CONSORZIO TUSCANIA

# ALLEGATI

## alla

# Relazione scientifica finale

## Linee di ricerca A1-A2

Consiglio Nazionale delle Ricerche
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# Lista Allegati

# Allegato 1.1 – Tabella soglie di controllo dati meteo

| MASTER | posizione file | dato aberrante | allarme |
|---|---|---|---|
| year<br>anno | 1 | -- | -- |
| doyM<br>giorno dell'anno | 2 | -- | -- |
| Tempmedia<br>Temperatura media dell'aria (°C) | 3 | da -20 a +50 | da 0 a +40 |
| Tmax<br>Temp massima dell'aria (°C) | 4 | da -10 a +60 | da 0 a +50 |
| Tmin<br>Temp minima dell'aria (°C) | 5 | da -20 a +50 | da -20 a +30 |
| Tdevstd<br>deviazione standard temperatura media | 6 | -- | -- |
| Tultimo<br>ultimo rilievo temperatura (°C) | 7 | da -20 a +50 | da -20 a +50 |
| Umidmedia<br>umidità relativa media (%) | 8 | da 0 a 110 | da 10 a 100 |
| URmax<br>umidità massima (%) | 9 | da 0 a 110 | da 20 a 100 |
| URmin<br>umidità minima (%) | 10 | da 0 a 110 | da 10 a 80 |
| URdevstd<br>deviazione standard umidità | 11 | -- | -- |
| URultimo<br>ultimo rilievo umidità (%) | 12 | da 0 a 110 | da 10 a 100 |
| Presmedia<br>pressione (hPa) | 13 | da 700 a 1400 | da 850 a 1200 |
| Pmax<br>pressione massima (hPa) | 14 | da 700 a 1400 | da 850 a 1200 |
| Pmin<br>pressione minima (hPa) | 15 | da 700 a 1400 | da 850 a 1200 |
| Pdevstd<br>deviazione standard umidità | 16 | -- | -- |
| Pultimo<br>ultimo rilievo pressione (hPa) | 17 | da 700 a 1400 | da 850 a 1200 |
| RadGmedia<br>radiazione globale media (W m-2) | 18 | da 0 a 2000 | da 0 a 2000 |
| Rmax<br>radiazione massima (W m-2) | 19 | da 0 a 2000 | da 0 a 2000 |
| Rmin<br>radiazione minima (W m-2) | 20 | da 0 a 2000 | da 0 a 2000 |
| Rdevstd<br>deviazione standard radiazione | 21 | -- | -- |
| Rultimo<br>ultimo rilievo radiazione (W m-2) | 22 | da 0 a 2000 | da 0 a 2000 |
| Piogsomma<br>precipitazioni (mm) | 23 | da 0 a 2000 | da 0 a 2000 |
| VVent1Vmed<br>velocità media del vento (m s-1) | 24 | da 0 a 10000 | da 0 a 10000 |
| Vdevstd<br>dev standard velocità vento | 25 | -- | -- |
| Vraf<br>vento di raffica (m s-1) | 26 | da 0 a 10000 | da 0 a 10000 |
| Vmin<br>velocità minima vento (m s-1) | 27 | da 0 a 10000 | da 0 a 10000 |

| | | | |
|---|---|---|---|
| Vultimo<br>ultimo rilievo vel. vento (m s-1) | 28 | da 0 a 10000 | da 0 a 10000 |
| DVent1Dprev<br>direzione prevalente del vento (°) | 29 | da 0 a 360 | da 0 a 360 |
| Draf<br>direzione del vento di raffica (°) | 30 | da 0 a 360 | da 0 a 360 |
| Dultimo<br>deviazione standard direzione vento | 31 | -- | -- |
| numcamp<br>numero di acquisizioni (#) | 32 | -- | -- |
| Batteria<br>livello della batteria (mV) | 33 | da 0 a 15000 | da 0 a 15000 |

| SLAVE | dati ogni ora | dato aberrante | allarme |
|---|---|---|---|
| year<br>anno | 1 | -- | -- |
| DOY_hh<br>giorno dell'anno | 2 | -- | -- |
| Rad<br>radiazione globale (W m-2) | 3 | da +25 a +1500 | da +25 a +800 |
| Tair<br>temperatura dell'aria media (°C) | 4 | da -20 a +50 | da -20 a +40 |
| Tgrap<br>temperatura del grappolo media (°C) | 5 | da -20 a +50 | da -20 a +40 |
| Tleaf<br>temperatura (infrarosso) della chioma (°C) | 6 | da -20 a +50 | da -20 a +40 |
| Tsoil1<br>tempertura del suolo 30cm (°C) | 7 | da -20 a +50 | da -20 a +40 |
| Tsoil2<br>tempertura del suolo 60cm (°C) | 8 | da -20 a +50 | da -20 a +40 |
| potenziale idrico 30<br>riscaldatore sensore di temperatura del suolo 30 cm (Delta T °C) | 9 | da +0.01 a +2.75 | da +0.01 a +2.75 |
| potenziale idrico 60<br>riscaldatore sensore di temperatura del suolo 60 cm (Delta T °C) | 10 | da +0.01 a +2.75 | da +0.01 a +2.75 |
| VV<br>velocità del vento (m s-1) | 11 | da 0 a 5000 | da 0 a 5000 |
| Bat<br>livello della batteria (mV) | 12 | da 0 a 15000 | da 0 a 15000 |
| Bagn_leaf<br>bagnatura fogliare (#) | 13 | da 0 a 60 | da 0 a 60 |

# Allegato 1.2 - Protocollo di installazione sensori delle stazioni Slave

Le stazioni periferiche (Slave) una volta posizionate all'interno del vigneto seguendo il disegno sperimentale, sono state dotate di un codice identificativo relativo al blocco di vigoria e alla parcella d'appartenenza. Nell'allegato X è mostrata la posizione di tutte le Slave all'interno di ciascun vigneto. I sensori collegati a ciascuna Slave sono stati installati secondo la metodologia seguente:

- TEMPERATURA GRAPPOLO: viene individuato ad inizio stagione un grappolo campione e su di esso viene posizionato il sensore di temperatura sul rachide a circa metà della lunghezza dello stesso fissato con un piccolo spezzone di filo da potatura in modo da non creare una strozzatura sul rachide. La scelta di questo posizionamento è stata valutata in base alla necessita di ottenere una misura della temperatura che fosse rappresentativa delle condizioni termiche medie all'interno del grappolo.
- BAGNATURA FOGLIARE: il sensore verrà posizionato vicino al grappolo campione, all'interno della cortina, alla stessa altezza del grappolo, fissato al palo di legno adiacente al grappolo stesso, parallelo alla linea del cordone, in modo da evidenziare le condizioni di umidità e bagnatura rappresentative del grappolo e del microclima che lo circonda.
- RADIAZIONE SOLARE: il sensore di radiazione solare è da posizionare vicino al grappolo campione sopra all'attacco del "rachide", simulando in maniera ottimale la superficie esposta.
- POTENZIALE IDRICO DEL SUOLO: i sensori verranno installati a coppie di 2, a 30 e 60cm di profondità in quanto tale posizionamento permette di capire oltre al contenuto anche le dinamiche dell'acqua nel suolo, in prossimità della pianta campione e sulle stazioni Slave considerate rappresentative delle aree, nella vigna Cacciagrande nelle Slave 1, 2, 4, 8, 9, nella vigna Cortigliano 1, 5, 8, 9, 10, nella vigna Donna Olimpia 1, 4, 6, 9, 10, nella vigna Brolio 1, 2, 3, 4, 11 (i numeri abbinati alle Slave sono mostrati nell'allegato X).
- TEMPERATURA FOGLIARE AD INFRAROSSO: i sensori verranno posizionati sul lato esposto a sud a circa 20 cm dalla cortina con angolo di vista ellittico orientato sulla spalliera verso il basso (evitando esposizione alla pioggia), così da raccogliere

informazioni su un'area più ampia e rappresentativa. Considerando l'angolo di vista (FOV) di 45° del sensore sarà posizionato evitando di puntare il terreno o oggetti di disturbo (sostegni, paleria ecc.). Nei casi in cui l'orientamento dei filari sia nord/sud il sensore sarà posizionato ad ovest. Essendo i box delle stazioni posizionati in modo asimmetrico rispetto ad i 2 pali il sensore IR verrà posizionato dal lato vicino al palo con un sistema di blocco di sicurezza sul palo stesso, per aumentarne la stabilità e mantenerne inalterata la posizione. La misura della temperatura fogliare puntuale non è rappresentativa della cortina in quanto, la singola foglia è soggetta ad alta variabilità di temperatura per diversi motivi (ombreggiamento, stato fisiologico della foglia, carenze nutrizionali e attacchi parassitari etc..). Pertanto è stato scelto un sensore che integrasse la misura della temperatura delle foglie presenti nell'area del campo di monitoraggio del sensore.

- TEMPERATURA ARIA: il sensore di temperatura aria verrà posizionato sul secondo filo a circa la metà della cortina ed in posizione il più possibile indisturbata per essere rappresentativa della spalliera.
- VELOCITA' VENTO: il sensore di velocità del vento verrà installato su un supporto che lo colloca al centro della zona interfilare a circa 50cm dal suolo. La posizione di questo sensore ci permette di valutare i differenti campi di vento sulle diverse tecniche di gestione della chioma (tesi defogliante e non).

# Allegato 1.3 – Tabelle di calibrazione sensori

| | | | | 2008 | | | | |
|---|---|---|---|---|---|---|---|---|
| BROLIO | Tair | | Tgrape | | Tleaf | | | |
| | span | offset | span | offset | span | offset | vigoria | tesi |
| A | 0.9768 | -0.3841 | 0.9947 | -0.4849 | X | X | 6 | 5 |
| B | 0.9687 | -0.4947 | 1.0013 | -0.5348 | X | X | 3 | 5 |
| C | uguale H | uguale H | uguale H | uguale H | X | X | 4 | 5 |
| D | 0.9805 | 0.3615 | 1 | 0.3224 | X | X | 1 | 5 |
| E | 0.9963 | 0.9952 | 0.9986 | 1.2254 | X | X | 1 | 3 |
| F | 0.9936 | -0.1988 | 0.9515 | 0.1085 | X | X | 1 | 7 |
| G | 0.9879 | 0.7426 | 0.9832 | 1.2596 | X | X | 1 | 4 |
| H | 0.9896 | 0.3281 | 0.998 | -0.515 | X | X | 1 | 6 |
| I | 1 | -0.0471 | 0.9995 | -0.2466 | X | X | 1 | 2 |
| L | 1.0245 | -1.0027 | 1.0293 | -1.0655 | X | X | 1 | 8 |
| M | 0.9871 | 0.5001 | 0.9659 | 0.5802 | X | X | 1 | 1 |
| DONNA | Tair | | Tgrape | | Tleaf | | | |
| OLIMPIA | span | offset | span | offset | span | offset | vigoria | tesi |
| A | 0.9635 | 0.2372 | 1.0497 | -0.7762 | X | X | 1 | 2 |
| B | 1.1082 | -1.8737 | 1.1019 | -1.9487 | X | X | 1 | 6 |
| C | 1.0333 | 0.0884 | 0.9895 | 0.8975 | X | X | 1 | 1 |
| D | 1.0157 | 0.9189 | 1.0048 | -0.2804 | X | X | 5 | 5 |
| E | 1.0389 | 0.017 | 0.9617 | -0.2618 | X | X | 1 | 8 |
| F | 1.0085 | -0.5595 | 1.0022 | -0.5959 | X | X | 1 | 3 |
| G | 0.9971 | 0.0606 | 0.9724 | 0.6029 | X | X | 1 | 5 |
| H | 0.9553 | -0.3388 | 0.9918 | -0.4012 | X | X | 1 | 4 |
| I | 0.9532 | 0.7286 | 1.0005 | 0.2987 | X | X | 1 | 7 |
| L | 0.9822 | -0.7899 | 1.0031 | 0.9814 | X | X | 4 | 5 |
| LE | Tair | | Tgrape | | Tleaf | | | |
| MORTELLE | span | offset | span | offset | span | offset | vigoria | tesi |
| A | 0.976 | -0.4343 | 0.9842 | 0.2374 | 1.0493 | -1.0401 | 1 | 6 |
| B | NO | NO | NO | NO | NO | NO | 1 | 7 |
| C | 1.0248 | -0.9627 | 0.9926 | 0.1723 | 1.1018 | -2.2474 | 1 | 1 |
| D | 0.9842 | 0.8467 | 0.9853 | 0.3958 | 1.0705 | -1.2487 | 1 | 3 |
| E | 1.0053 | -0.1367 | 0.9859 | 0.2215 | NO | NO | 1 | 5 |
| F | 0.9795 | 0.5064 | 0.9912 | 0.1312 | 1.0877 | -0.9331 | 1 | 4 |
| G | 1.0171 | -0.2492 | 0.9774 | 0.9222 | 1.113 | -1.5984 | 1 | 8 |
| H | 0.9686 | 0.4459 | 1.0022 | -0.6727 | ERROR | ERROR | 1 | 2 |
| I | NO | NO | NO | NO | NO | NO | 2 | 5 |
| L | 0.9805 | 0.8548 | 1.0192 | -0.1189 | ERROR | ERROR | 4 | 5 |
| M | NO | NO | NO | NO | NO | NO | 6 | 5 |
| N | NO | NO | NO | NO | NO | NO | 3 | 5 |
| O | 0.9922 | -0.2944 | 0.9882 | 0.1157 | 0.9509 | 0.2133 | 1 | 7 |
| P | 0.9844 | 0.1739 | 0.9745 | 0.5809 | 0.9724 | 0.3896 | 1 | 3 |
| Q | 0.9936 | 0.9748 | 0.9238 | 2.1741 | 1.0826 | -1.0441 | 1 | 4 |
| R | 1.0149 | -0.2097 | 0.9713 | 0.499 | 1.0143 | -0.1543 | 1 | 2 |
| S | 0.9786 | 0.2287 | 0.9783 | 0.1835 | ERROR | ERROR | 1 | 5 |
| T | 0.998 | 0.3717 | 0.9825 | 0.8863 | 0.9769 | 1.2074 | 1 | 8 |
| U | 0.9737 | 0.4536 | 0.9768 | 0.2278 | 0.9545 | 1.1554 | 1 | 6 |
| V | 0.9881 | -0.0971 | 0.9955 | -0.4314 | 0.9725 | -0.0696 | 1 | 1 |

| 2010 | Tair | | | Tgrape | | | | |
|---|---|---|---|---|---|---|---|---|
| BR | SPAN | OFFSET | R | SPAN | OFFSET | R | vigoria | tesi |
| A | 1.0188 | -0.8384 | 0.9994 | 1.0079 | -0.9532 | 0.9999 | 6 | 5 |
| B | 0.9942 | -0.9244 | 0.9999 | 1.0204 | -1.2992 | 0.9997 | 3 | 5 |
| C | 1.0091 | 0.1344 | 0.9996 | 1.003 | 0.0801 | 0.9999 | 4 | 5 |
| D | 1.0004 | 0.2262 | 0.9998 | 0.9799 | 0.1633 | 0.9991 | 1 | 5 |
| E | 1.0225 | 0.6878 | 0.9989 | 1.0057 | 0.748 | 0.9997 | 1 | 3 |
| F | 0.9317 | 0.4141 | 0.9945 | 1.0054 | -0.4873 | 0.9994 | 1 | 7 |
| G | 1.011 | 0.6059 | 0.9996 | 0.9953 | 0.7672 | 0.9999 | 1 | 4 |
| H | 1.0208 | 0.0152 | 0.9994 | 0.9991 | -0.8051 | 0.9999 | 1 | 6 |
| I | 0.9662 | 0.5053 | 0.9988 | 0.9697 | 0.2543 | 0.9995 | 1 | 2 |
| L | 1.0142 | -0.7781 | 0.9998 | 1.0202 | -1.3212 | 0.9998 | 1 | 8 |
| M | 1.0082 | 0.0379 | 0.9999 | 1.0095 | -0.5879 | 0.9997 | 1 | 1 |
| DO | SPAN | OFFSET | R | SPAN | OFFSET | R | vigoria | tesi |
| A | 0.99 | 0.1699 | 0.9985 | 0.9987 | 0.1038 | 0.9990 | 1 | 2 |
| B | 0.9585 | 0.1919 | 0.9961 | 0.9685 | -0.1121 | 0.9973 | 1 | 6 |
| C | 0.9829 | 1.1405 | 0.9998 | 1.0146 | 0.8983 | 0.9996 | 1 | 1 |
| D | 0.9743 | 1.677 | 0.9945 | 0.9892 | 0.4551 | 0.9955 | 5 | 5 |
| E | 1.0262 | 0.3749 | 0.9965 | 1.1276 | -98.3750 | 0.9765 | 1 | 8 |
| F | 1.0091 | -0.9814 | 0.9994 | 1.1609 | -2.9836 | 0.9304 | 1 | 3 |
| G | 1.0105 | -0.3057 | 0.9973 | 1.0123 | -0.1987 | 0.9993 | 1 | 5 |
| H | 1.0116 | -1.1616 | 0.9986 | 0.9790 | -0.5475 | 0.9997 | 1 | 4 |
| I | 1.0067 | -0.1615 | 0.9982 | 1.0087 | -0.0768 | 0.9997 | 1 | 7 |
| L | 1.0122 | -0.6744 | 0.9991 | 0.9654 | 1.4403 | 0.9969 | 4 | 5 |
| CO | SPAN | OFFSET | R2 | SPAN | OFFSET | R2 | vigoria | tesi |
| A | 1.0044 | -0.5906 | 0.9995 | 1.0169 | -0.7412 | 0.9963 | 1 | 6 |
| B | 1.0043 | 0.4623 | 0.9997 | 0.9938 | 0.4298 | 0.9992 | 1 | 7 |
| C | 1.002 | -0.4945 | 0.9997 | 0.9976 | -0.3232 | 0.9993 | 1 | 1 |
| D | 1.1139 | -10.123 | 0.9565 | 0.9957 | -0.3357 | 0.9994 | 1 | 3 |
| E | 0.9987 | -0.0766 | 0.9996 | 1.0861 | -13.036 | 0.9704 | 1 | 5 |
| F | 1.0048 | -0.147 | 0.999 | 1.0075 | -0.93 | 0.9987 | 1 | 4 |
| G | 0.9812 | -25.632 | 0.9686 | 1.0095 | -0.0173 | 0.9991 | 1 | 8 |
| H | 0.9993 | -0.6601 | 0.9994 | 0.9941 | -1.0343 | 0.9994 | 1 | 2 |
| I | 0.952 | 4.665 | 0.9949 | 1.0485 | -10.462 | 0.9834 | 2 | 5 |
| L | 1.0006 | 0.1833 | 0.9995 | 0.9953 | -0.1521 | 0.9996 | 4 | 5 |
| CA | SPAN | OFFSET | R2 | SPAN | OFFSET | R2 | vigoria | tesi |
| M | 0.9942 | 0.4249 | 0.9996 | 1.0018 | 0.3671 | 0.9996 | 6 | 5 |
| N | 1.0048 | 0.1023 | 0.9995 | 1.0104 | 0.0218 | 0.9994 | 3 | 5 |
| O | 0.9954 | -0.3013 | 0.9997 | 1.0101 | -0.3623 | 0.9994 | 1 | 7 |
| P | 1.0569 | -10 | 0.9949 | 0.9996 | -0.125 | 0.9994 | 1 | 3 |
| Q | 0.9949 | 1.0266 | 0.9994 | 0.9989 | 0.894 | 0.9993 | 1 | 4 |
| R | 0.9974 | 0.3551 | 0.9997 | 1.0021 | -0.2703 | 0.9993 | 1 | 2 |
| S | 0.9873 | -0.1147 | 0.999 | 0.9878 | -0.3561 | 0.9992 | 1 | 5 |
| T | 1.0001 | 0.2877 | 0.9995 | 1.0104 | -2.1315 | 0.9967 | 1 | 8 |
| U | 1.0007 | -0.0536 | 0.9994 | 0.992 | -0.4066 | 0.9993 | 1 | 6 |
| V | 1.0029 | -0.3098 | 0.9995 | 0.8269 | -6.8881 | 0.9853 | 1 | 1 |

| | | | | | | | | 2009 | |
|---|---|---|---|---|---|---|---|---|---|
| BROLIO | Tair | | | Tgrape | | | Tleaf | | |
| | SPAN | OFFSET | $R^2$ | SPAN | OFFSET | $R^2$ | SPAN | OFFSET | $R^2$ |
| A | 0.9986 | -0.4787 | 0.996 | 1.0105 | -0.8012 | 0.9985 | 1.0048 | -0.4084 | 0.9984 |
| B | 0.9998 | -0.7786 | 0.998 | 1.0132 | -0.8762 | 0.9983 | 0.9911 | -0.9066 | 0.9967 |
| C | 0.9873 | 0.5256 | 0.998 | 1.0178 | 0.2164 | 0.9988 | 1.0001 | 0.1508 | 0.9979 |
| D | 1.0031 | 0.4673 | 0.997 | 1.0109 | 0.0853 | 0.9961 | 0.9926 | 0.3013 | 0.9992 |
| E | 1.0014 | 1.0731 | 0.9921 | 1.0083 | 1.0467 | 0.9946 | 0.9925 | 1.0134 | 0.994 |
| F | 1.0062 | -0.1523 | 0.9969 | 1.0184 | -0.4123 | 0.9959 | 1.0035 | -0.0218 | 0.9982 |
| G | 0.9983 | 0.9217 | 0.9995 | 0.9929 | -4.754 | 0.984 | X | X | X |
| H | 0.9871 | -0.632 | 0.9996 | 0.9664 | -0.0009 | 0.9973 | 1.0863 | -7.6104 | 0.9405 |
| I | 0.9932 | 0.2644 | 0.9995 | 0.9633 | 0.6149 | 0.9974 | 1.192 | -17.116 | 0.9445 |
| L | 1.0162 | -1.2181 | 0.9995 | 0.9542 | -12.097 | 0.9986 | 1.0324 | -89.01 | 0.9632 |
| M | 0.984 | 0.1937 | 0.9984 | 0.9707 | 0.2857 | 0.998 | 1.0709 | -8.7856 | 0.9464 |
| DONNA | Tair | | | Tgrape | | | Tleaf | | |
| OLIMPIA | SPAN | OFFSET | $R^2$ | SPAN | OFFSET | $R^2$ | SPAN | OFFSET | $R^2$ |
| A | 0.9788 | 0.2369 | 0.9921 | 0.999 | 0.3749 | 0.9798 | 0.9919 | -0.153 | 0.9947 |
| B | 0.9795 | 0.0239 | 0.9923 | 0.998 | -0.1538 | 0.983 | 0.9839 | -0.2263 | 0.997 |
| C | 0.9864 | 0.8506 | 0.9884 | 0.993 | 1.2598 | 0.9891 | 0.9904 | 1.2385 | 0.9972 |
| D | 0.9944 | 0.8263 | 0.9873 | 1.003 | -0.2013 | 0.9847 | 0.9424 | -8.3202 | 0.9975 |
| E | 1.0424 | -0.2877 | 0.9883 | 1.0056 | -86.608 | 0.9791 | 0.9688 | -12.345 | 0.9985 |
| F | 1.0026 | -0.792 | 0.9896 | 1.0163 | -0.5571 | 0.9918 | 0.9909 | -0.4957 | 0.9682 |
| G | 0.9639 | 0.0876 | 0.966 | 0.9145 | 0.7891 | 0.9398 | 1.1171 | -10.776 | 0.9726 |
| H | 0.9725 | -0.732 | 0.9987 | 0.9513 | -0.3176 | 0.9965 | 1.0556 | -6.6562 | 0.9349 |
| I | 0.9605 | 0.1879 | 0.9556 | 0.9471 | 0.2983 | 0.9536 | 1.1161 | -10.505 | 0.9707 |
| L | 0.9794 | 0.7034 | 0.9983 | 0.9141 | -11.397 | 0.9968 | 1.0356 | -89.537 | 0.9684 |
| LE | Tair | | | Tgrape | | | Tleaf | | |
| MORTELLE | SPAN | OFFSET | $R^2$ | SPAN | OFFSET | $R^2$ | SPAN | OFFSET | $R^2$ |
| A | 0.9548 | -0.0942 | 0.9353 | 0.9938 | -0.0294 | 0.9949 | 0.9901 | 0.0339 | 0.9961 |
| B | 1.0117 | 0.6779 | 0.9939 | 0.9847 | 1.1542 | 0.9947 | 0.9974 | 0.3704 | 0.998 |
| C | 0.9956 | -0.0444 | 0.9938 | 0.9859 | 0.2331 | 0.9937 | 0.9971 | 0.0087 | 0.9966 |
| D | 1.0159 | 0.1027 | 0.9554 | 0.9984 | 0.034 | 0.9959 | 0.9974 | 0.1513 | 0.9972 |
| E | 0.99 | 0.0005 | 0.9936 | 0.9935 | 0.0323 | 0.9967 | 0.992 | 0.0754 | 0.9976 |
| F | 0.8773 | 1.5153 | 0.7814 | 0.7297 | 2.8069 | 0.7859 | 0.9953 | -88.51 | 0.9319 |
| G | 0.9179 | -4.7264 | 0.9722 | 0.9906 | 0.4958 | 0.9941 | 0.9917 | 0.5024 | 0.9946 |
| H | 0.9964 | -0.1811 | 0.995 | 0.9929 | -0.3474 | 0.9975 | 1.0197 | -0.1468 | 0.9741 |
| I | 0.9323 | 5.1852 | 0.9833 | 0.9971 | 0.0039 | 0.9932 | 0.9854 | -0.4012 | 0.9798 |
| L | 1.0101 | 0.213 | 0.9877 | 0.9771 | 0.4906 | 0.9732 | 0.9977 | 0.0628 | 0.9922 |
| M | 0.9923 | 0.7539 | 0.9955 | 0.9899 | 0.8492 | 0.997 | 0.9925 | 0.6657 | 0.9984 |
| N | 1.0085 | 0.4724 | 0.9961 | 1.0018 | 0.5539 | 0.9976 | 0.9902 | 0.5189 | 0.998 |
| O | 0.9997 | 0.0667 | 0.9941 | 0.9996 | 0.2551 | 0.9973 | 0.9928 | 0.0485 | 0.9983 |
| P | 0.9598 | -7.0232 | 0.9366 | 0.9854 | 0.5774 | 0.9971 | 0.99 | 0.5852 | 0.9981 |
| Q | 1 | 1.2136 | 0.9973 | 0.9865 | 1.3162 | 0.9977 | 1.0008 | -2.9023 | 0.9571 |
| R | 0.9934 | 0.5465 | 0.9952 | 0.9954 | -5.7291 | 0.9866 | 0.9873 | 0.3903 | 0.9982 |
| S | 0.9921 | 0.3158 | 0.9836 | 0.9796 | 0.5696 | 0.9845 | 0.9846 | 0.4683 | 0.9849 |
| T | 0.9906 | 0.6995 | 0.9824 | 0.9758 | 0.9061 | 0.9872 | 1.0151 | -2.6994 | 0.9618 |
| U | 0.9771 | 0.6183 | 0.9919 | 1.0209 | 0.2218 | 0.9823 | 0.996 | 0.1953 | 0.9907 |
| V | 0.9925 | 0.2132 | 0.9882 | 0.9916 | 0.1567 | 0.9778 | 0.9894 | 0.2872 | 0.9904 |

# Allegati 1.4 – 1.5 – 1.6 – Listati delle procedure matlab di despiking dati slave (2008-2009-2010)

```
clear all;
close all;
clc;

disp('          CI SONO I COEFFICIENTI CALIBRAZIONE le soglie e il
despiking  e anche media mobile      ')

st=input('ID station (LOC=Master;S=Slave): ','s');
stt=input('Vigna (BR=Brolio;MA=Mortelle alta Cacciagrande;MB=Mortelle bassa
Cortigliano;DO=Donna Olimpia): ','s');
styear=input('Anno: ');
safety=input('Vuoi salvare il file output ? Si(1) No(2); ');
File_save='C:\TUSCANIA\DATI_2008\Scheduler\OUTPUT';
File_save_desp='C:\TUSCANIA\DATI_2008\Scheduler\DESPIKING';
File_path_master='C:\TUSCANIA\DATI_2008\Scheduler\Master';

if stt == 'BR'
    File_path='C:\TUSCANIA\DATI_2008\Scheduler\Brolio\OUTPUT';
    File_path_loc='C:\TUSCANIA\DATI_2008\Scheduler\Brolio\OUTPUT';
    %tolto coef Tgrape di G ed L
    slavenumb=[65 66 67 68 69 70 71 72 73 76 77];
        span_air=[0.9768        0.9687  0.9896  0.9805  0.9963  0.9936
        0.9879  0.9896  1       1.0245  0.9871];
        offset_air=[-0.3841     -0.4947 0.3281  0.3615  0.9952  -0.1988
        0.7426  0.3281  -0.0471 -1.0027 0.5001];
        span_grape=[0.9947      1.0013  0.998   1       0.9986  0.9515  1
        0.998   0.9995  1       0.9659];
        offset_grape=[-0.4849   -0.5348 -0.515  0.3224  1.2254  0.1085  0
        -0.515  -0.2466 0       0.5802];
%         span_grape=[0.9947    1.0013  0.998   1       0.9986  0.9515
0.9832  0.998   0.9995  1.0293  0.9659];
%         offset_grape=[-0.4849 -0.5348 -0.515  0.3224  1.2254  0.1085
1.2596  -0.515  -0.2466 -1.0655 0.5802];
        span_leaf=[1    1       1       1       1       1       1       1
        1       1       1];
        offset_leaf=[0  0       0       0       0       0       0       0
        0       0       0];
        offset_rad=[-13.1       5.2     8.1     -5.6    -13.4   9.3
        -2.0    12.6    -6.6    -1.3    -5.6];
        doy_cal=9400;
        doy_rad=15900;
        doy_cal2=13900;
        doy_delta=10600;

    %slavenumb=char('A','B','C','D','E','F','G','H','I','L','M');
elseif stt == 'DO'
    File_path='C:\TUSCANIA\DATI_2008\Scheduler\Donna_Olimpia\OUTPUT';
    File_path_loc='C:\TUSCANIA\DATI_2008\Scheduler\Donna_Olimpia\OUTPUT';
    slavenumb=[65 66 67 68 69 70 71 72 73 76];
        span_air=[0.9635        1.1082  1.0333  1.0157  1.0389  1.0085
        0.9971  0.9553  0.9532  0.9822];
        offset_air=[0.2372      -1.8737 0.0884  0.9189  0.017   -0.5595
        0.0606  -0.3388 0.7286  -0.7899];
        span_grape=[1.0497      1.1019  0.9895  1.0048  0.9617  1.0022
        0.9724  0.9918  1.0005  1.0031];
        offset_grape=[-0.7762   -1.9487 0.8975  -0.2804 -0.2618 -0.5959
        0.6029  -0.4012 0.2987  0.9814];
        span_leaf=[1    1       1       1       1       1       1       1
        1       1];
        offset_leaf=[0  0       0       0       0       0       0       0
        0       0];
        offset_rad=[19.1        14.7    14.7    14.7    10.2    -4.3
        -17.9   -5.2    -2.8    -13.7];
        doy_cal=10200;
        doy_rad=16500;
        doy_cal2=14700;
        doy_delta=11400;
    %slavenumb=char('A','B','C','D','E','F','G','H','I','L');
elseif stt == 'MB'
    File_path='C:\TUSCANIA\DATI_2008\Scheduler\Mortelle\OUTPUT';
    File_path_loc='C:\TUSCANIA\DATI_2008\Scheduler\Mortelle_Bassa\OUTPUT';
    slavenumb=[65 66 67 68 69 70 71 72 73 76];
        span_air=[0.976 1       1.0248  0.9842  1.0053  0.9795  1.0171
```

```
        0.9686  1       0.9805];
        offset_air=[-0.4343     0       -0.9627 0.8467  -0.1367 0.5064
        -0.2492 0.4459  0       0.8548];
        span_grape=[0.9842      1       0.9926  0.9853  0.9859  0.9912
        0.9774  1.0022  1       1.0192];
        offset_grape=[0.2374    0       0.1723  0.3958  0.2215  0.1312
        0.9222  -0.6727 0       -0.1189];
        span_leaf=[1.0493       1       1.1018  1.0705  1       1.0877
        1.113   1       1       1];
        offset_leaf=[-1.0401    0       -2.2474 -1.2487 0       -0.9331
        -1.5984 0       0       0];
        offset_rad=[-20.0       7.3     -18.5   9.6     11.5    -9.7    0.0
        19.7    2.0     3.0];
        doy_cal=10200;
        doy_rad=15000;
        doy_cal2=14700;
        doy_delta=11400;
    %slavenumb=char('A','B','C','D','E','F','G','H','I','L');
elseif stt == 'MA'
    File_path='C:\TUSCANIA\DATI_2008\Scheduler\Mortelle\OUTPUT';
    File_path_loc='C:\TUSCANIA\DATI_2008\Scheduler\Mortelle_Alta\OUTPUT';
    slavenumb=[77 78 79 80 81 82 83 84 85 86];
        span_air=[1     1       0.9922  0.9844  0.9936  1.0149  0.9786
        0.998   0.9737  0.9881];
        offset_air=[0   0       -0.2944 0.1739  0.9748  -0.2097 0.2287
        0.3717  0.4536  -0.0971];
        span_grape=[1   1       0.9882  0.9745  0.9238  0.9713  0.9783
        0.9825  0.9768  0.9955];
        offset_grape=[0 0       0.1157  0.5809  2.1741  0.499   0.1835
        0.8863  0.2278  -0.4314];
        span_leaf=[1    1       0.9509  0.9724  1.0826  1.0143  1
        0.9769  0.9545  0.9725];
        offset_leaf=[0  0       0.2133  0.3896  -1.0441 -0.1543 0
        1.2074  1.1554  -0.0696];
        offset_rad=[-13.7       12.9    7.7     16.6    -16.3   9.6     0.0
        -10.4   9.6     -17.4];
        doy_cal=10200;
        doy_rad=15000;
        doy_cal2=14700;
        doy_delta=11400;
        %slavenumb=char('M','N','O','P','Q','R','S','T','U','V');
end

if st=='LOC'
  File_wrk=[File_path_loc '\' st '.dat'];
        N=dload(File_wrk);
    % MASTER
% year  doyM    Tempmedia       Tmax    Tmin    Tdevstd Tultimo Umidmedia
URmax   URmin   URdevstd        URultimo        Presmedia
% 1       2       3       4     5       6       7       8       9     10
11      12              13
% Pmax  Pmin    Pdevstd Pultimo RadGmedia       Rmax    Rmin    Rdevstd
Rultimo Piogsomma       VVent1Vmed      Vdevstd Vraf
% 14    15      16      17      18      19      20      21      22      23
24              25      26
% Vmin  Vultimo DVent1Dprev     Draf    Dultimo numcamp Batteria
% 27      28            29        30      31      32            33
        %step 1 ordina ed elimina doppie
        [Y,I]=sort(N.doyM(:,1));
        datatemp=[N.year(I,1) N.doyM(I,1) N.Tempmedia(I,1) N.Tmax(I,1)
        N.Tmin(I,1) N.Tdevstd(I,1) N.Tultimo(I,1) N.Umidmedia(I,1)
        N.URmax(I,1) N.URmin(I,1) N.URdevstd(I,1) N.URultimo(I,1)
        N.Presmedia(I,1) N.Pmax(I,1) N.Pmin(I,1) N.Pdevstd(I,1)
        N.Pultimo(I,1) N.RadGmedia(I,1) N.Rmax(I,1) N.Rmin(I,1)
        N.Rdevstd(I,1) N.Rultimo(I,1) N.Piogsomma(I,1) N.VVent1Vmed(I,1)
        N.Vdevstd(I,1) N.Vraf(I,1) N.Vmin(I,1) N.Vultimo(I,1)
        N.DVent1Dprev(I,1) N.Draf(I,1) N.Dultimo(I,1) N.numcamp(I,1)
        N.Batteria(I,1)];
        [I,J]=unique(datatemp(:,2));
        data=[datatemp(J,1) datatemp(J,2) datatemp(J,3) datatemp(J,4)
        datatemp(J,5) datatemp(J,6) datatemp(J,7) datatemp(J,8)
        datatemp(J,9) datatemp(J,10) datatemp(J,11) datatemp(J,12)
        datatemp(J,13) datatemp(J,14) datatemp(J,15) datatemp(J,16)
```

```
        datatemp(J,17) datatemp(J,18) datatemp(J,19) datatemp(J,20)
        datatemp(J,21) datatemp(J,22) datatemp(J,23) datatemp(J,24)
        datatemp(J,25) datatemp(J,26) datatemp(J,27) datatemp(J,28)
        datatemp(J,29) datatemp(J,30) datatemp(J,31) datatemp(J,32)
        datatemp(J,33)];
        F = data(:,:);
        F(F==-999) = NaN;
        data(:,:)=F;



       % elaborazioni giornaliere
        appog=data(1,2);
        app2=num2str(data(1,2));
        data(1,2)=1111111;
        prova=num2str(data(:,2));
        D=str2num(prova(:,1:3));
        D(1)=appog;
        doyi=D(2);
        doyf=D(end);
        %elaborazioni orarie
        prova2=num2str(data(:,2));%
        D2=str2num(prova2(:,4:7));%
        %D2(1)=str2num(app2(:,4:7));
        D2=D2/100;%
        D3=fix((D2+0.1)*24/100) ; %
        D3(1)=D3(2);
        ii=1;
        i2=1;%
        data(1,2)=appog;

        for i=doyi:doyf
          ijj = find(D==i);
         if size(ijj,1)>1
          daily(ii,:) = nanmean(data(ijj,:)); % per le medie giornaliere
          daily(ii,2)=i;
          daily(ii,23)= nansum(data(ijj,23));  % cumulate giornaliere
          precipitazione mm
          daily(ii,4)= nanmax(data(ijj,4));
          daily(ii,5)= nanmin(data(ijj,5));
          daily(ii,9)= nanmax(data(ijj,9));
          daily(ii,10)= nanmin(data(ijj,10));
          daily(ii,19)= nanmax(data(ijj,19));
          daily(ii,20)= nanmin(data(ijj,20));

              if styear>2007
                daily(ii,24)= nansum(data(ijj,24)*300/1000);  % vento
                sfilato km giorno rilev 5 min
                daily(ii,18)= nansum(data(ijj,18)*300/1000000);  % cumulate
                radiazione Mj /m2
              else
                if (stt=='DO' & i>=222 | stt=='BR' & i>=194 | stt=='MB' &
                i>=261 | stt=='MA' & i>=261)
                daily(ii,24)= nansum(data(ijj,24)*300/1000);  % vento
                sfilato km giorno rilev 5 min
                daily(ii,18)= nansum(data(ijj,18)*300/1000000);  % cumulate
                radiazione Mj /m2
                else
                daily(ii,24)= nansum(data(ijj,24)*900/1000);  % vento
                sfilato km giorno rilev 15 min
                daily(ii,18)= nansum(data(ijj,18)*900/1000000);  % cumulate
                radiazione Mj /m2
                end
              end
          ii=ii+1;
          else
          daily(ii,:) = NaN;
          daily(ii,2)=i;
          ii=ii+1;
         end

         %elaborazione oraria
                           if size(ijj,1)>1
```

```
                              zz1=ijj(1);
                              for iii=D3(ijj(1)):D3(ijj(end))
                                ij2=find(D3(ijj)==iii);
                                if size(ij2,1)>1
                                  zz=zz1+length(ij2);
                                  azz=data(zz1:(zz-1),:);
                                  zz1=zz;
                                  hourly(i2,:)=nanmean(azz(:,:));
                                  hourly(i2,2)=i+double(iii*100/24)/100;
                                  hhour(i2,1)=i;
                                  hhour(i2,2)=iii;
                                     hourly(i2,23)= nansum(azz(:,23));  %
                                     cumulate giornaliere precipitazione mm
                                     hourly(i2,4)= nanmax(azz(:,4));
                                     hourly(i2,5)= nanmin(azz(:,5));
                                     hourly(i2,9)= nanmax(azz(:,9));
                                     hourly(i2,10)= nanmin(azz(:,10));
                                     hourly(i2,19)= nanmax(azz(:,19));
                                     hourly(i2,20)= nanmin(azz(:,20));

                                  if iii==24
                                    hourly(i2,2)=i;
                                  end
                                  i2=i2+1;
                                else
                                  hourly(i2,:) = NaN;
                                  hourly(i2,2)=i+double(iii*100/24)/100;
                                  i2=i2+1;
                                end
                              end
                            else
                              hourly(i2,:) = NaN;
                              hourly(i2,2)=i+double(iii*100/24)/100;
                              i2=i2+1;
                            end
                            %fine elab oraria
        end

                %inserisci giorni mancanti
        hourly(:,2)=hourly(:,2)*100;
                             startday=fix(hourly(1,2)/100);
                             endday=fix(hourly(end,2)/100);
                             ndays=endday-startday+1;
                             ncol=33;
                             A=NaN*ones(ndays*24,ncol);
                             A(:,1)=styear;
                             for i=0:ndays-1
                                for j=0:23
                                  A(i*24+j+1,2)=
                                  str2num([num2str(startday+i,'%.3d')
                                  num2str(j,'%.2d')]);
                                end
                             end

                                newdoy1=hourly(:,2)/100-fix(hourly(:,2)
                                /100);
                                newdoy2=int16(newdoy1*24);
                                appdoy=hourly(:,2);
                                hourly(:,2)=str2num([num2str(fix(hourly(:,2)
                                /100),'%.3d') num2str(newdoy2,'%.2d')]);;
                                B=hourly(:,:);

                              for i=1:size(A,1)
                                index=find(B(:,2)==A(i,2));
                                if length(index)>=1
                                  A(i,:)=B(index(1),:);
                                end
                              end
    hourly=A;
        % salvataggio file .mat
%         eval(['M_' stt '_RT = data(:,:);']);
         eval(['M_' stt '_DY = daily(:,:);']);
         eval(['M_' stt '_HY = hourly(:,:);']);
```

```
%         %eval(['M ' stt '_HY(:,2) = M_' stt '_HY(:,2)*100;']);
         fname=['M_' stt];
         eval(['save C:\TUSCANIA\DATI_2008\Scheduler\Master\' fname '
         M_*;']);


          % salvataggio files REAL TIME MASTER

    if safety == 1
      adesso=datestr(now, 'ddmmyyyy');
      file_out=[File_path '\' stt '_M_' adesso '.out'];
        fid1 = fopen(file_out, 'w');
        fprintf(fid1,'data ora Tempmedia Tmax Tmin Tdevstd Tultimo
        Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd
        Pultimo RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed
        Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo numcamp
        Batteria\r');
        in = size(data);
        for xx=1:in(1)
         annoj=data(xx,1);
         jd=D(xx,1);
         jd1=double(yearday(annoj,jd));
         jd2=(data(xx,2)/10000)-(D(xx,1));
         jd3=double(jd1+jd2+0.0001);
         stringadoy=datestr(jd3,'dd/mm/yyyy HH:MM');
        fprintf(fid1, ...
        '%s %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r', ...
        stringadoy, ' ',  data(xx,3), ' ', data(xx,4), ' ', data(xx,5), '
        ', ...
        data(xx,6), ' ', data(xx,7), ' ', data(xx,8), ' ', data(xx,9), ' ',
        data(xx,10), ' ' ,...
        data(xx,11), ' ', data(xx,12), ' ', data(xx,13), ' ', data(xx,14),
        ' ', data(xx,15), ' ' ,...
        data(xx,16), ' ', data(xx,17), ' ', data(xx,18), ' ', data(xx,19),
        ' ', data(xx,20), ' ' ,...
        data(xx,21), ' ', data(xx,22), ' ', data(xx,23), ' ', data(xx,24),
        ' ', data(xx,25), ' ' ,...
        data(xx,26), ' ', data(xx,27), ' ', data(xx,28), ' ', data(xx,29),
        ' ', data(xx,30), ' ' ,...
        data(xx,31), ' ', data(xx,32), ' ', data(xx,33));
        %year doyM Tempmedia Tmax Tmin Tdevstd Tultimo Umidmedia URmax
        URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd Pultimo
        RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed Vdevstd
        Vraf Vmin Vultimo DVent1Dprev Draf Dultimo numcamp Batteria
        %2007 2424687 28.0 28.0 28.0 0.008 28.0 62 63 60 1.23 60 1015 1015
        1015 0.00 1015 664 689 638 25.28 689 0.0 5.64 5.6371 11.27 0.00
        11.27 99 99 99 2 13564
        %2007 2393645 25.61 26.04 25.21 -999 -999 57.25 61.12 53.51 -999
        -999 1024.34 1024.82 -999 -999 -999 455.04 469.35 -999 -999 -999 0
        0.81 -999 1.13 -999 -999 158 135 -999 -999 -999
        end
        fclose(fid1);

   %salvataggio file orario
        adesso=datestr(now, 'ddmmyyyy');
        file_out=[File_save '\' stt '_TUS_M_HY_0_' adesso '.out'];
        fid2 = fopen(file_out, 'w');
        fprintf(fid2,'Year JDT Tempmedia Tmax Tmin Tdevstd Tultimo
        Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd
        Pultimo RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed
        Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo numcamp
        Batteria\r');
        in = size(hourly);
        for xx=1:in(1)
        fprintf(fid2, ...
        '%d %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r',
        ...
        hourly(xx,1), ' ',hourly(xx,2), ' ', hourly(xx,3), ' ',
        hourly(xx,4), ' ', hourly(xx,5), ' ', ...
```

```
        hourly(xx,6), ' ', hourly(xx,7), ' ', hourly(xx,8), ' ',
        hourly(xx,9), ' ', hourly(xx,10), ' ' ,...
        hourly(xx,11), ' ', hourly(xx,12), ' ', hourly(xx,13), ' ',
        hourly(xx,14), ' ', hourly(xx,15), ' ' ,...
        hourly(xx,16), ' ', hourly(xx,17), ' ', hourly(xx,18), ' ',
        hourly(xx,19), ' ', hourly(xx,20), ' ' ,...
        hourly(xx,21), ' ', hourly(xx,22), ' ', hourly(xx,23), ' ',
        hourly(xx,24), ' ', hourly(xx,25), ' ' ,...
        hourly(xx,26), ' ', hourly(xx,27), ' ', hourly(xx,28), ' ',
        hourly(xx,29), ' ', hourly(xx,30), ' ' ,...
        hourly(xx,31), ' ', hourly(xx,32), ' ', hourly(xx,33));
        end
        fclose(fid2);

       %salvataggio file orario  despiking
        adesso=datestr(now, 'ddmmyyyy');
        file_out=[File_save_desp '\' stt '_TUS_M_HY_0_despike' adesso
        '.out'];
        fid2 = fopen(file_out, 'w');
        fprintf(fid2,'Year JDT Tempmedia Tmax Tmin Tdevstd Tultimo
        Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd
        Pultimo RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed
        Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo numcamp
        Batteria\r');
        in = size(hourly);
        for xx=1:in(1)
        fprintf(fid2, ...
        '%d %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r',
        ...
        hourly(xx,1), ' ',hourly(xx,2), ' ', hourly(xx,3), ' ',
        hourly(xx,4), ' ', hourly(xx,5), ' ', ...
        hourly(xx,6), ' ', hourly(xx,7), ' ', hourly(xx,8), ' ',
        hourly(xx,9), ' ', hourly(xx,10), ' ' ,...
        hourly(xx,11), ' ', hourly(xx,12), ' ', hourly(xx,13), ' ',
        hourly(xx,14), ' ', hourly(xx,15), ' ' ,...
        hourly(xx,16), ' ', hourly(xx,17), ' ', hourly(xx,18), ' ',
        hourly(xx,19), ' ', hourly(xx,20), ' ' ,...
        hourly(xx,21), ' ', hourly(xx,22), ' ', hourly(xx,23), ' ',
        hourly(xx,24), ' ', hourly(xx,25), ' ' ,...
        hourly(xx,26), ' ', hourly(xx,27), ' ', hourly(xx,28), ' ',
        hourly(xx,29), ' ', hourly(xx,30), ' ' ,...
        hourly(xx,31), ' ', hourly(xx,32), ' ', hourly(xx,33));
        end
        fclose(fid2);



        %salvataggio file giornaliero
        adesso=datestr(now, 'ddmmyyyy');
        file_out=[File_save '\' stt '_TUS_M_DY_0_' adesso '.out'];
        fid2 = fopen(file_out, 'w');
        fprintf(fid2,'Year JDT Tempmedia Tmax Tmin Tdevstd Tultimo
        Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd
        Pultimo RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed
        Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo numcamp
        Batteria\r');
        in = size(daily);
        for xx=1:in(1)
        fprintf(fid2, ...
        '%d %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r',
        ...
        daily(xx,1), ' ',daily(xx,2), ' ', daily(xx,3), ' ', daily(xx,4), '
        ', daily(xx,5), ' ', ...
        daily(xx,6), ' ', daily(xx,7), ' ', daily(xx,8), ' ', daily(xx,9),
        ' ', daily(xx,10), ' ' ,...
        daily(xx,11), ' ', daily(xx,12), ' ', daily(xx,13), ' ',
        daily(xx,14), ' ', daily(xx,15), ' ' ,...
        daily(xx,16), ' ', daily(xx,17), ' ', daily(xx,18), ' ',
        daily(xx,19), ' ', daily(xx,20), ' ' ,...
```

```
        daily(xx,21), ' ', daily(xx,22), ' ', daily(xx,23), ' ',
        daily(xx,24), ' ', daily(xx,25), ' ' ,...
        daily(xx,26), ' ', daily(xx,27), ' ', daily(xx,28), ' ',
        daily(xx,29), ' ', daily(xx,30), ' ' ,...
        daily(xx,31), ' ', daily(xx,32), ' ', daily(xx,33));
        end
        fclose(fid2);

        %salvataggio file giornaliero despiking
        adesso=datestr(now, 'ddmmyyyy');
        file_out=[File_save_desp '\' stt '_TUS_M_DY_0_despike' adesso
        '.out'];
        fid2 = fopen(file_out, 'w');
        fprintf(fid2,'Year JDT Tempmedia Tmax Tmin Tdevstd Tultimo
        Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd
        Pultimo RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed
        Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo numcamp
        Batteria\r');
        in = size(daily);
        for xx=1:in(1)
        fprintf(fid2, ...
        '%d %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r',
        ...
        daily(xx,1), ' ',daily(xx,2), ' ', daily(xx,3), ' ', daily(xx,4), '
        ', daily(xx,5), ' ', ...
        daily(xx,6), ' ', daily(xx,7), ' ', daily(xx,8), ' ', daily(xx,9),
        ' ', daily(xx,10), ' ' ,...
        daily(xx,11), ' ', daily(xx,12), ' ', daily(xx,13), ' ',
        daily(xx,14), ' ', daily(xx,15), ' ' ,...
        daily(xx,16), ' ', daily(xx,17), ' ', daily(xx,18), ' ',
        daily(xx,19), ' ', daily(xx,20), ' ' ,...
        daily(xx,21), ' ', daily(xx,22), ' ', daily(xx,23), ' ',
        daily(xx,24), ' ', daily(xx,25), ' ' ,...
        daily(xx,26), ' ', daily(xx,27), ' ', daily(xx,28), ' ',
        daily(xx,29), ' ', daily(xx,30), ' ' ,...
        daily(xx,31), ' ', daily(xx,32), ' ', daily(xx,33));
        end
        fclose(fid2);


    end


%        figure('Name','Master Hourly ');
% %        doyM Tempmedia Tmax Tmin Tdevstd Tultimo Umidmedia URmax URmin
URdevstd URultimo
%                        subplot(4,2,1),plot(hourly(:,2),hourly(:,3));
%                        hold on
%                        ylabel('Temperature')
%                        subplot(4,2,1),plot(hourly(:,2),hourly(:,4),'r');
%                        hold on
%                        %ylabel('Tmax')
%                        subplot(4,2,1),plot(hourly(:,2),hourly(:,5),'r');
%                        hold on
%                        %ylabel('Tmin')
%                        %axis([600 900 15 28])
%                        subplot(4,2,2),plot(hourly(:,2),hourly(:,8));
%                         hold on
%                        ylabel('Relative Humidity')
%                        %axis([0 i -20 20])
%
subplot(4,2,2),plot(hourly(:,2),hourly(:,9),'r');%URmax
%                         hold on
%
subplot(4,2,2),plot(hourly(:,2),hourly(:,10),'r');%URmin
%                         hold on
% %        Presmedia Pmax Pmin Pdevstd Pultimo RadGmedia Rmax Rmin Rdevstd
Rultimo Piogsomma
%                        subplot(4,2,3),plot(hourly(:,2),hourly(:,13));
%                        hold on
%                        ylabel('Pressure (hPA)')
```

```
%                        subplot(4,2,4),plot(hourly(:,2),hourly(:,18));
%                        hold on
%                        ylabel('Radiation (W/m2)Medie orarie non SUM')
%                        subplot(4,2,5),plot(hourly(:,2),hourly(:,23));
%                        hold on
%                        ylabel('Precipitation (mm)')
% %         VVent1Vmed Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo
numcamp Batteria
%                        subplot(4,2,6),plot(hourly(:,2),hourly(:,24));
%                        hold on
%                        ylabel('Wind (Km giorno)')
%                        subplot(4,2,7),plot(hourly(:,2),hourly(:,32));
%                        hold on
%                        ylabel('numpack (#)')
%                        subplot(4,2,8),plot(hourly(:,2),hourly(:,33));
%                        hold on
%                        ylabel('Battery (mV)')
%
%               figure('Name','Master Acquisition-time 5min');
% %         doyM Tempmedia Tmax Tmin Tdevstd Tultimo Umidmedia URmax URmin
URdevstd URultimo
%                        subplot(4,2,1),plot(data(:,2),data(:,3));
%                        hold on
%                        ylabel('Temperature')
%                        subplot(4,2,1),plot(data(:,2),data(:,4),'r');
%                        hold on
%                        %ylabel('Tmax')
%                        subplot(4,2,1),plot(data(:,2),data(:,5),'r');
%                        hold on
%                        %ylabel('Tmin')
%                        %axis([600 900 15 28])
%                        subplot(4,2,2),plot(data(:,2),data(:,8));
%                         hold on
%                        ylabel('Relative Humidity')
%                        %axis([0 i -20 20])
%                        subplot(4,2,2),plot(data(:,2),data(:,9),'r');%URmax
%                         hold on
%
subplot(4,2,2),plot(data(:,2),data(:,10),'r');%URmin
%                         hold on
% %         Presmedia Pmax Pmin Pdevstd Pultimo RadGmedia Rmax Rmin Rdevstd
Rultimo Piogsomma
%                        subplot(4,2,3),plot(data(:,2),data(:,13));
%                        hold on
%                        ylabel('Pressure (hPA)')
%                        subplot(4,2,4),plot(data(:,2),data(:,18));
%                        hold on
%                        ylabel('Radiation (W/m2)')
%                        subplot(4,2,5),plot(data(:,2),data(:,23));
%                        hold on
%                        ylabel('Precipitation (mm)')
% %         VVent1Vmed Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo
numcamp Batteria
%                        subplot(4,2,6),plot(data(:,2),data(:,24));
%                        hold on
%                        ylabel('Wind (Km giorno)')
%                        subplot(4,2,7),plot(data(:,2),data(:,32));
%                        hold on
%                        ylabel('numpack (#)')
%                        subplot(4,2,8),plot(data(:,2),data(:,33));
%                        hold on
%                        ylabel('Battery (mV)')
%
%               figure('Name','Master Daily')
%                        subplot(4,2,1),plot(daily(:,2),daily(:,3));
%                        hold on
%                        ylabel('Temperature')
%                        subplot(4,2,1),plot(daily(:,2),daily(:,4),'r');
%                        hold on
%                        %ylabel('Tmax')
%                        subplot(4,2,1),plot(daily(:,2),daily(:,5),'r');
%                        hold on
%
```

```
%                       %ylabel('Tmin')
%                        %axis([600 900 15 28])
%                        subplot(4,2,2),plot(daily(:,2),daily(:,8));
%                         hold on
%                        ylabel('Relative Humidity')
%                        %axis([0 i -20 20])
%
subplot(4,2,2),plot(daily(:,2),daily(:,9),'r');%URmax
%                         hold on
%
subplot(4,2,2),plot(daily(:,2),daily(:,10),'r');%URmin
%                         hold on
% %         Presmedia Pmax Pmin Pdevstd Pultimo RadGmedia Rmax Rmin Rdevstd
Rultimo Piogsomma
%                        subplot(4,2,3),plot(daily(:,2),daily(:,13));
%                        hold on
%                        ylabel('Pressure (hPA)')
%                        subplot(4,2,4),plot(daily(:,2),daily(:,18));
%                        hold on
%                        ylabel('Radiation (MJ/m2)Sum Daily')
%                        subplot(4,2,5),plot(daily(:,2),daily(:,23));
%                        hold on
%                        ylabel('Precipitation (mm)')
% %         VVent1Vmed Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo
numcamp Batteria
%                        subplot(4,2,6),plot(daily(:,2),daily(:,24));
%                        hold on
%                        ylabel('Wind (m/s)')
%                        subplot(4,2,7),plot(daily(:,2),daily(:,32));
%                        hold on
%                        ylabel('numpack (#)')
%                        subplot(4,2,8),plot(daily(:,2),daily(:,33));
%                        hold on
%                        ylabel('Battery (mV)')


else
    s1=1;%inizializzo indici vettori calibrazione
    f1=1;
    for hh=slavenumb(1):slavenumb(end)
      if (hh==74 | hh==75)
          pippo='N';
      else
         File_wrk=[File_path '\' hh '.dat'];
         M=dload(File_wrk);
         File_master=[File_path_master '\M_' stt '.mat'];
         load(File_master);
         eval(['Master_hy=M_' stt '_HY;'])
         eval(['Master_dy=M_' stt '_DY;'])

% SLAVE
% year  DOY_hh  rad     Tair    Tgrap   Tleaf   Tsoil1  Tsoil2  T_heatsoil1
T_heatsoil2     VV      Bat     Bagn_leaf
% 1       2       3     4       5       6       7       8               9
10      11  12          13
            %step 1 ordina ed elimina doppie
            [Y,I]=sort(M.DOY hh(:,1));
            datatemp=[M.Year(I,1) M.DOY hh(I,1) M.Tcjc(I,1) M.Tair(I,1)
            M.Tgrap(I,1) M.Tleaf(I,1) M.Tsoil1(I,1) M.Tsoil2(I,1)
            M.T_heatsoil1(I,1) M.T_heatsoil2(I,1) M.VV(I,1) M.Bat(I,1)
            M.Bagn_leaf(I,1)];
            [I,J]=unique(datatemp(:,2));
            data=[datatemp(J,1) datatemp(J,2) datatemp(J,3) datatemp(J,4)
            datatemp(J,5) datatemp(J,6) datatemp(J,7) datatemp(J,8)
            datatemp(J,9) datatemp(J,10) datatemp(J,11) datatemp(J,12)
            datatemp(J,13)];
            F = data(:,:);
            F(F==-999) = NaN;
            data(:,:)=F;

            wind=data(:,11);
            wind(wind==0.2)=0;
            data(:,11)=wind;
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%
            %applico i coefficienti di calibrazione per le slave
            data(data(:,2)<=doy_cal,4)=(data(data(:,2)<=doy_cal,4)
            *span_air(s1))+offset_air(f1);
            data(data(:,2)<=doy_cal,5)=(data(data(:,2)<=doy_cal,5)
            *span_grape(s1))+offset_grape(f1);
            data(data(:,2)<=doy_cal,6)=(data(data(:,2)<=doy_cal,6)
            *span_leaf(s1))+offset_leaf(f1);

            %dalla data di inserimento span-offset errore nel calcolo
            data(data(:,2)>=doy_cal & data(:,2)<=doy_cal2,4)=
            ((data(data(:,2)>=doy_cal & data(:,2)<=doy_cal2,4)-
            offset_air(f1))*span_air(s1))+offset_air(f1);
            data(data(:,2)>=doy_cal & data(:,2)<=doy_cal2,5)=
            ((data(data(:,2)>=doy_cal & data(:,2)<=doy_cal2,5)-
            offset_grape(f1))*span_grape(s1))+offset_grape(f1);
            data(data(:,2)>=doy_cal & data(:,2)<=doy_cal2,6)=
            ((data(data(:,2)>=doy_cal & data(:,2)<=doy_cal2,6)-
            offset_leaf(f1))*span_leaf(s1))+offset_leaf(f1);
            data(data(:,2)>=doy_cal & data(:,2)<=doy_cal2,4)=
            data(data(:,2)>=doy_cal & data(:,2)<=doy_cal2,4)-
            offset_air(f1);
            data(data(:,2)>=doy_cal & data(:,2)<=doy_cal2,5)=
            data(data(:,2)>=doy_cal & data(:,2)<=doy_cal2,5)-
            offset_grape(f1);
            data(data(:,2)>=doy_cal & data(:,2)<=doy_cal2,6)=
            data(data(:,2)>=doy_cal & data(:,2)<=doy_cal2,6)-
            offset_leaf(f1);

            %dopo aver ripristinato gli span-offset 1 e 0 il seguente
            data(data(:,2)>=doy_cal2,4)=(data(data(:,2)>=doy_cal2,4)
            *span_air(s1))+offset_air(f1);
            data(data(:,2)>=doy_cal2,5)=(data(data(:,2)>=doy_cal2,5)
            *span_grape(s1))+offset_grape(f1);
            data(data(:,2)>=doy_cal2,6)=(data(data(:,2)>=doy_cal2,6)
            *span_leaf(s1))+offset_leaf(f1);

            %sensori radiazione grappolo
            data(data(:,2)<doy_rad,3)=NaN;
            %coefficienti calibrazione radiazione grappolo
            data(data(:,2)>=doy_rad,3)=data(data(:,2)>=doy_rad,3)
            +offset_rad(f1);
            %elimino i negativi
            apprad=data(:,3);
            apprad(apprad<=25)=0;
            data(:,3)=apprad;
            s1=s1+1;
            f1=f1+1;
            %conversione T_heatsoil da temperatura a delta T
            data(data(:,2)<=doy_delta,9)=(data(data(:,2)<=
            doy_delta,9))-(data(data(:,2)<=doy_delta,7));
            data(data(:,2)<=doy_delta,10)=(data(data(:,2)<=
            doy_delta,10))-(data(data(:,2)<=doy_delta,8));

            %inserimento soglie deltaT per il potenziale idrico
            %considerare solo valori di delta tra 0.01<x<2.75
            pot30=data(:,9);
            pot30(pot30>=2.75)=2.75;
            pot30(pot30<=0.01)=0.01;

            pot60=data(:,10);
            pot60(pot60>=2.75)=2.75;
            pot60(pot60<=0.01)=0.01;

            %RANGE DI POTENZIALE IDRICO
%             Tasterisco30=(3.15-pot30)/(3.15-0.75);
%             pot30=-0.056*(Tasterisco30.^(-1/0.45)-1);
%             Tasterisco60=(3.15-pot60)/(3.15-0.75);
%             pot60=-0.056*(Tasterisco60.^(-1/0.45)-1);
            %da Mpa a pF (scala 1-7)  %-LOG10(1/ASS(E12*10000))   %-
            log10(1/abs(-2.95*10000))
```

```
%             pf i 30=abs(pot30*10000);
%             pf_i_60=abs(pot60*10000);
%             pf30=-log10(1./pf_i_30);
%             pf60=-log10(1./pf_i_60);
%             rh30=-22.392*log(pf30-1)+42.554; curva ritenzione media
campioni donna olimpia
%             rh60=-22.392*log(pf60-1)+42.554;
%             data(:,9)=rh30;
%             data(:,10)=rh60;
             %%%%%%%%%
             data(:,9)=pot30;
             data(:,10)=pot60;

            %inserimento soglie temperatura aria e grappolo
            s_air=data(:,4);
            s_air(s_air>=50 | s_air<=-20)=NaN;
            data(:,4)=s air;
            s_grape=data(:,5);
            s_grape(s_grape>=50 | s_grape<=-20)=NaN;
            data(:,5)=s_grape;
            s_leaf=data(:,6);
            s_leaf(s_leaf>=60 | s_leaf<=-20)=NaN;
            data(:,6)=s_leaf;


            %despiking manuale ESEGUITO GUARDANDO I DATI GIORNALIERI

                %filtro a 12 ore potenziale idrico
                aaa=1;
                bb12 = [1/12 1/12 1/12 1/12 1/12 1/12 1/12 1/12 1/12 1/12
                1/12 1/12];
                yy12_30 = filter(bb12,aaa,data(:,9));
                yy12 60 = filter(bb12,aaa,data(:,10));
                data(:,9)=yy12_30;
                data(:,10)=yy12_60;

        if stt == 'BR'
                %slavenumb=[65 66 67 68 69 70 71 72 73 76 77];
                data(data(:,2)<9199,4)=NaN; %Tair dal 150 in poi
                data(data(:,2)<15999,5)=NaN; %Tgrape dal 178 in poi
                data(data(:,2)>28100,3:12)=NaN; %dati oltre vendemmia
                data(data(:,2)<17099,6)=NaN; %Tleaf dal 170 in poi
                %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                if hh==slavenumb(5) | hh==slavenumb(6)| hh==slavenumb(7)|
                hh==slavenumb(8)| hh==slavenumb(9)| hh==slavenumb(10)
                %tolgo pot idr
                data(data(:,2)>100,7:10)=NaN;
                end
                if hh==slavenumb(5) | hh==slavenumb(7)| hh==slavenumb(9)|
                hh==slavenumb(11)%tolgo wind
                data(data(:,2)>100,11)=NaN;
                end
                if hh==slavenumb(7) % tgrape G tolgo le ore 8-9-10
                    orenull=num2str(data(:,2));%
                    nuoveore=str2num(orenull(:,4:5));%
                    nnore=find(nuoveore<43 & nuoveore>32);
                    data(nnore,5) = NaN;
                end
                if hh==slavenumb(4)%tgrape D tolgo le ore dalle 12 alle 16
                troppo alte
                    orenull=num2str(data(:,2));%
                    nuoveore=str2num(orenull(:,4:5));%
                    nnore=find(nuoveore<72 & nuoveore>49);
                    data(nnore,5) = NaN;
               end
                if hh==slavenumb(10)%tgrape L tolgo le ore centrali troppo
                alte
                    orenull=num2str(data(:,2));%
                    nuoveore=str2num(orenull(:,4:5));%
                    nnore=find(nuoveore<79 & nuoveore>59);
                    data(nnore,5) = NaN;
                end
                if hh==slavenumb(8)%tgrape H
```

```
            data((data(:,2)>=22100 & data(:,2)<=24899),5)=
            data((data(:,2)>=22100 & data(:,2)<=24899),5)-11.8;
            data((data(:,2)>=24900 & data(:,2)<=24999),5)=NaN;
            data((data(:,2)>=22000 & data(:,2)<=22099),5)=NaN;
            end
            if hh==slavenumb(10)%tleaf L
            data(:,6)=data(:,6)-10;
            end
            if hh==slavenumb(3)%tleaf C
            data((data(:,2)>=20900 & data(:,2)<=20999),6)=NaN;
            end
            if hh==slavenumb(1) | hh==slavenumb(3)| hh==slavenumb(5)|
            hh==slavenumb(6)| hh==slavenumb(9)
            data((data(:,2)>=25700 & data(:,2)<=26099),6)=NaN;
            data((data(:,2)>=26300 & data(:,2)<=26399),6)=NaN;
            data((data(:,2)>=27700 & data(:,2)<=27799),6)=NaN;
            end

        elseif stt == 'DO'
            %slavenumb=[65 66 67 68 69 70 71 72 73 76];
            data(data(:,2)<9199,4)=NaN; %Tair dal 150 in poi
            data(data(:,2)<15999,5)=NaN; %Tgrape dal 178 in poi
            data(data(:,2)>28100,3:12)=NaN; %dati oltre vendemmia
            data(data(:,2)<17099,6)=NaN; %Tleaf dal 170 in poi
            data((data(:,2)>=11300 & data(:,2)<=11699),7:10)=NaN; %pot
            idr di tutte
            %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
            if hh==slavenumb(2) | hh==slavenumb(3)| hh==slavenumb(5)|
            hh==slavenumb(7)| hh==slavenumb(8) %tolgo pot idr
            data(data(:,2)>100,7:10)=NaN;
            end
            if hh==slavenumb(1) | hh==slavenumb(3)| hh==slavenumb(6)|
            hh==slavenumb(8)%tolgo wind
            data(data(:,2)>100,11)=NaN;
            end

            if hh==slavenumb(2)%tolgo valori della slave B
            data((data(:,2)>=15000 & data(:,2)<=28000),4:12)=NaN;
            end
            if hh==slavenumb(3)%tleaf C
            data((data(:,2)>=17000 & data(:,2)<=28099),6)=NaN;
            end
            if hh==slavenumb(5)%tleaf E
            data((data(:,2)>=17000 & data(:,2)<=28099),6)=NaN;
            end
            if hh==slavenumb(7)%tleaf G
            data((data(:,2)>=17000 & data(:,2)<=28099),6)=NaN;
            end
            if hh==slavenumb(4)%tleaf D
            data((data(:,2)>=18900 & data(:,2)<=19299),7:10)=NaN;
            data((data(:,2)>=22600 & data(:,2)<=28099),7:10)=NaN;
            end

        elseif stt == 'MB'
             %slavenumb=[65 66 67 68 69 70 71 72 73 76];
            data(data(:,2)<9199,4)=NaN; %Tair dal 150 in poi
            data(data(:,2)<15999,5)=NaN; %Tgrape dal 178 in poi
            data(data(:,2)>28100,3:12)=NaN; %dati oltre vendemmia
            data(data(:,2)<17099,6)=NaN; %Tleaf dal 170 in poi
            if hh==slavenumb(2) | hh==slavenumb(3)| hh==slavenumb(4)|
            hh==slavenumb(6)| hh==slavenumb(7) %tolgo pot idr
            data(data(:,2)>100,7:10)=NaN;
            end
            if hh==slavenumb(2) | hh==slavenumb(4)| hh==slavenumb(6)|
            hh==slavenumb(8)%tolgo wind
            data(data(:,2)>100,11)=NaN;
            end
            if hh==slavenumb(5)%tgrape E
            data((data(:,2)>=18400 & data(:,2)<=18499),5)=NaN;
            data((data(:,2)>=18700 & data(:,2)<=18799),5)=NaN;
            data((data(:,2)>=19600 & data(:,2)<=20099),5)=NaN;
            data((data(:,2)>=21000 & data(:,2)<=21099),5)=NaN;
            data((data(:,2)>=21200 & data(:,2)<=21799),5)=NaN;
```

```
                data((data(:,2)>=22200 & data(:,2)<=22299),5)=NaN;
                data((data(:,2)>=24600 & data(:,2)<=25299),5)=NaN;
                data((data(:,2)>=25600 & data(:,2)<=25899),5)=NaN;
                data((data(:,2)>=26700 & data(:,2)<=28099),5)=NaN;
                end
                if hh==slavenumb(4)%tgrape D
                data((data(:,2)>=22800 & data(:,2)<=22899),5)=NaN;
                data((data(:,2)>=26200 & data(:,2)<=26499),5)=NaN;
                data((data(:,2)>=27400 & data(:,2)<=28099),5)=NaN;
                end
                if hh==slavenumb(6)%tgrape E
                data((data(:,2)>=27000 & data(:,2)<=28099),5)=NaN;
                end
%                 if hh==slavenumb(4)%tgrape D tolgo le ore dalle 12 alle
16 troppo alte
%                     orenull=num2str(data(:,2));%
%                     nuoveore=str2num(orenull(:,4:5));%
%                     nnore=find(nuoveore<72 & nuoveore>49);
%                     data(nnore,5) = NaN;
%                 end
                if hh==slavenumb(2)%tgrape B senza coeff
                data(:,5)=data(:,5)+1;
                end
                if hh==slavenumb(7)%tgrape G tolgo le ore dalle 12 alle 16
                troppo alte
                    orenull=num2str(data(:,2));%
                    nuoveore=str2num(orenull(:,4:5));%
                    nnore=find(nuoveore<72 & nuoveore>49);
                    data(nnore,5) = NaN;
                end
                if hh==slavenumb(7)%tair G la tolgo
                data((data(:,2)>=15000 & data(:,2)<=28099),4)=NaN;
                end
                if hh==slavenumb(3)%tair C tolgo le ore dalle 12 alle 16
                troppo alte
                    orenull=num2str(data(:,2));%
                    nuoveore=str2num(orenull(:,4:5));%
                    nnore=find(nuoveore<72 & nuoveore>49);
                    data(nnore,4) = NaN;
                end
                if hh==slavenumb(4)%tleaf D
                data((data(:,2)>=17000 & data(:,2)<=28099),6)=NaN;
                end
                if hh==slavenumb(9)%tleaf I
                data((data(:,2)>=17000 & data(:,2)<=28099),6)=NaN;
                end
                if hh==slavenumb(2)%tleaf B
                data((data(:,2)>=17000 & data(:,2)<=21999),6)=NaN;
                end
                if hh==slavenumb(7)%tleaf G
                data((data(:,2)>=17000 & data(:,2)<=22699),6)=NaN;
                data((data(:,2)>=23600 & data(:,2)<=28099),6)=NaN;
                end
                if hh==slavenumb(10)%tleaf L
                data((data(:,2)>=22600 & data(:,2)<=23099),6)=NaN;
                data((data(:,2)>=25700 & data(:,2)<=26099),6)=NaN;
                end
                if hh==slavenumb(1)%tleaf A
                data((data(:,2)>=22800 & data(:,2)<=22999),6)=NaN;
                data((data(:,2)>=25700 & data(:,2)<=25999),6)=NaN;
                end

        elseif stt == 'MA'
                 %slavenumb=[77 78 79 80 81 82 83 84 85 86];
                data(data(:,2)<9199,4)=NaN; %Tair dal 150 in poi
                data(data(:,2)<15999,5)=NaN; %Tgrape dal 178 in poi
                data(data(:,2)>28100,3:12)=NaN; %dati oltre vendemmia
                data(data(:,2)<17099,6)=NaN; %Tleaf dal 170 in poi
                %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                if hh==slavenumb(3) | hh==slavenumb(5)| hh==slavenumb(6)|
                hh==slavenumb(7)| hh==slavenumb(10) %tolgo pot idr
                data(data(:,2)>100,7:10)=NaN;
                end
```

```
        if hh==slavenumb(5) | hh==slavenumb(6)| hh==
        slavenumb(7)%tolgo wind
        data(data(:,2)>100,11)=NaN;
        end

        if hh==slavenumb(6)%tgrape R  troppo alta
        data((data(:,2)>=20400 & data(:,2)<=25699),5)=
        data((data(:,2)>=20400 & data(:,2)<=25699),5)-6;
        data((data(:,2)>=20300 & data(:,2)<=20399),5)=NaN;

        data((data(:,2)>=21750 & data(:,2)<=22200),5)=NaN;
        data((data(:,2)>=22400 & data(:,2)<=22600),5)=NaN;
        data((data(:,2)>=23000 & data(:,2)<=23550),5)=NaN;
        data((data(:,2)>=23600 & data(:,2)<=23950),5)=NaN;
        data((data(:,2)>=24600 & data(:,2)<=25700),5)=NaN;
        end
        if hh==slavenumb(3)%tgrape O tolgo le ore dalle 12 alle 15
        troppo alte
            orenull=num2str(data(:,2));%
            nuoveore=str2num(orenull(:,4:5));%
            nnore=find(nuoveore<69 & nuoveore>42);
            data(nnore,5) = NaN;
        end
        if hh==slavenumb(4)%tair P
        data((data(:,2)>=23600 & data(:,2)<=28099),4)=NaN;
        end
        if hh==slavenumb(5)%tleaf Q
        data((data(:,2)>=17000 & data(:,2)<=23099),6)=NaN;
        end
        if hh==slavenumb(7)%tleaf S
        data((data(:,2)>=17000 & data(:,2)<=28099),6)=NaN;
        end
        if hh==slavenumb(3)%tleaf O
        data((data(:,2)>=25700 & data(:,2)<=28099),6)=NaN;
        end
        if hh==slavenumb(6)%tleaf R
        data((data(:,2)>=25700 & data(:,2)<=26099),6)=NaN;
        data((data(:,2)>=26300 & data(:,2)<=26499),6)=NaN;
        end
end

          disp('         DESPIKE MANUALE INSERITO        ')

    %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

                        %inserisci giorni mancanti
hourly=data;
                    startday=fix(hourly(1,2)/100);
                    endday=fix(hourly(end,2)/100);
                    ndays=endday-startday+1;
                    ncol=13;
                    A=NaN*ones(ndays*24,ncol);
                    A(:,1)=styear;
                    for i=0:ndays-1
                       for j=0:23
                         A(i*24+j+1,2)=
                         str2num([num2str(startday+i,'%.3d')
                         num2str(j,'%.2d')]);
                       end
                    end

                       newdoy1=hourly(:,2)/100-fix(hourly(:,2)
                       /100);
                       newdoy2=int16(newdoy1*24);
                       appdoy=hourly(:,2);
                       hourly(:,2)=str2num([num2str(fix(hourly(:,2)
                       /100),'%.3d') num2str(newdoy2,'%.2d')]);;
                       B=hourly(:,:);

                     for i=1:size(A,1)
                       index=find(B(:,2)==A(i,2));
                       if length(index)>=1
                         A(i,:)=B(index(1),:);
```

```
                              end
                          end
    hourly=A;


        appog=hourly(1,2);
        hourly(1,2)=11111;

              doyi=int16(hourly(2,2)/100);
              doyf=int16(hourly(end,2)/100);
              prova=num2str(hourly(:,2));
              D=str2num(prova(:,1:3));
              ii=1;
        hourly(1,2)=appog;
        D(1)=D(2);
              for i=doyi:doyf
                ijj = find(D==i);
                if size(ijj,1)>1
                  % controllo giorni parziali
                  for iii=1:13
                    ina=isnan(hourly(ijj,iii));
                    if sum(ina) >= 7
                      hourly(ijj,iii) = NaN;
                    end
                  end
                  %%%%%%%%%%%%%%%%
                daily(ii,1:13) = nanmean(hourly(ijj,:)); % per le medie
                giornaliere
                daily(ii,2)=i;
                daily(ii,13)= sum(hourly(ijj,13));  % per le cumulate
                giornaliere es. pioggia
                daily(ii,11)= sum(hourly(ijj,11)*3.6);  % vento sfilato
                daily(ii,3)= nansum(hourly(ijj,3)); %radiazione W m-2
                (integrale giornaliera)
                  daily(ii,14)= nanmax(hourly(ijj,4));  %Tair max
                  daily(ii,15)= nanmin(hourly(ijj,4));  %Tair min
                  daily(ii,16)= nanmax(hourly(ijj,5));  %Tgrap max
                  daily(ii,17)= nanmin(hourly(ijj,5));  %Tgrap min
                  daily(ii,18)= nanmax(hourly(ijj,6));  %Tleaf max
                  daily(ii,19)= nanmin(hourly(ijj,6));  %Tleaf min
                  daily(ii,20)= nanmax(hourly(ijj,7));  %Tsoil1 max
                  daily(ii,21)= nanmin(hourly(ijj,7));  %Tsoil1 min
                  daily(ii,22)= nanmax(hourly(ijj,8));  %Tsoil2 max
                  daily(ii,23)= nanmin(hourly(ijj,8));  %Tsoil2 min
                  daily(ii,24)= nanmax(hourly(ijj,11));  %Wind max
                  daily(ii,25)= nanmin(hourly(ijj,11));  %Wind min

                ii=ii+1;
                else
                daily(ii,:) = NaN;
                daily(ii,2)=i;
                ii=ii+1;
                end
              end

                 % salvataggio file .mat per despiking
                 %eval(['S_' hh '_' stt '_HY = hourly(:,:);']);

                           if safety == 1
                            %salvataggio file orario  per elaborazioni
                            statistiche tuscania
                            adesso=datestr(now, 'ddmmyyyy');
                            file_out=[File_save '\' stt '_TUS_S_HY_' hh
                            '_' adesso '.out'];
                              fid2 = fopen(file_out, 'w');
                                  fprintf(fid2,'Year JDT Rad Tair Tgrap
                                  Tleaf Tsoil1 Tsoil2 T_heatsoil1
                                  T_heatsoil2 VV Bat Bagn_leaf \r');
                              in = size(hourly);
                              for xx=1:in(1)
                              fprintf(fid2, ...
                                  '%d %c %f %c %f %c %f %c %f %c %f %c %f
                                  %c %f %c %f %c %f %c %f %c %f %c %f\r',
```

```
                                        ...
                                        hourly(xx,1), ' ', hourly(xx,2), ' ',
                                        hourly(xx,3), ' ', hourly(xx,4), ' ',
                                        hourly(xx,5), ' ', ...
                                        hourly(xx,6), ' ', hourly(xx,7), ' ',
                                        hourly(xx,8), ' ', hourly(xx,9), ' ',
                                        hourly(xx,10), ' ' ,...
                                        hourly(xx,11), ' ', hourly(xx,12), ' ',
                                        hourly(xx,13));
                                    end
                                    fclose(fid2);

                                  %salvataggio files giornalieri
% 14 Tair max % 15 Tair min % 16 Tgrap max % 17 Tgrap min %18 Tleaf max %19
Tleaf min % 20 Tsoil1 max
% 21 Tsoil1 min % 22 Tsoil2 max % 23 Tsoil2 min  % 24 Wind max  % 25 Wind
min
                                    adesso=datestr(now, 'ddmmyyyy');
                                    file_out=[File_save '\' stt '_TUS_S_DY_' hh
                                    '_' adesso '.out'];
                                    fid3 = fopen(file_out, 'w');
                                    fprintf(fid3,'Year JDT Rad Tair Tgrap Tleaf
                                    Tsoil1 Tsoil2 T_heatsoil1 T_heatsoil2 VV
                                    Bat Bagn_leaf Tair_max Tair_min Tgrap_max
                                    Tgrap_min Tleaf_max Tleaf_min Tsoil1_max
                                    Tsoil1_min Tsoil2_max Tsoil2_min Wind_max
                                    Wind_min\r');
                                    in = size(daily);
                                    for xx=1:in(1)
                                    fprintf(fid3, ...
                                        '%d %c %d %c %f %c %f %c %f %c %f %c %f
                                        %c %f %c %f %c %f %c %f %c %f %c %f %c
                                        %f %c %f %c %f %c %f %c %f %c %f %c %f
                                        %c %f %c %f %c %f %c %f %c %f\r', ...
                                        daily(xx,1), ' ', daily(xx,2), ' ',
                                        daily(xx,3), ' ', daily(xx,4), ' ',
                                        daily(xx,5), ' ', ...
                                        daily(xx,6), ' ', daily(xx,7), ' ',
                                        daily(xx,8), ' ', daily(xx,9), ' ',
                                        daily(xx,10), ' ' ,...
                                        daily(xx,11), ' ', daily(xx,12), ' ',
                                        daily(xx,13), ' ', daily(xx,14), ' ',
                                        daily(xx,15), ' ', daily(xx,16), ' ',
                                        daily(xx,17), ' ', daily(xx,18), ' ',
                                        daily(xx,19), ' ', daily(xx,20), ' ',
                                        daily(xx,21), ' ', daily(xx,22), ' ',
                                        daily(xx,23), ' ', daily(xx,24), ' ',
                                        daily(xx,25));
                                    end
                                    fclose(fid3);
                                end


          %%%%%%%%%%%%%%  DESPIKING GIORNALIERO  %%%%%%%%%%%%%%%

%           gi=daily(1,2);
%           gf=daily(end,2);
%           mast = find(Master_dy(:,2)<=gf & Master_dy(:,2)>=gi);
%           Mair=Master_dy(mast,3);
%

%        METTERE IL NAN ANCHE ALLE MASSIME E MINIME

%           rif = abs(daily(:,4)-Mair);
%           indd2 = find(rif>5);
%           daily(indd2,4)=NaN;
%           rif = abs(daily(:,5)-Mair);
%           indd2 = find(rif>5);
%           daily(indd2,5)=NaN;
%           rif = abs(daily(:,6)-Mair);
%           indd2 = find(rif>10);
%           daily(indd2,6)=NaN;
%
```

```
%           Tasterisco30=(3.15-daily(:,9))/(3.15-0.75);
%           T_heatsoil1=-0.056*(Tasterisco30.^(-1/0.45)-1);
%           Tasterisco60=(3.15-daily(:,10))/(3.15-0.75);
%           T_heatsoil2=-0.056*(Tasterisco60.^(-1/0.45)-1);
%           ind30=find(T_heatsoil1<-1.75);
%           ind60=find(T_heatsoil2<-1.75);
%           daily(ind30,9)=2.65;
%           daily(ind60,10)=2.65;
%
%             if safety == 1
%             adesso=datestr(now, 'ddmmyyyy');
%             file_out=[File_save_desp '\' stt '_TUS_S_DY_' hh '_despike_'
adesso '.out'];
%             fid3 = fopen(file_out, 'w');
%             fprintf(fid3,'Year JDT Rad Tair Tgrap Tleaf Tsoil1 Tsoil2
T_heatsoil1 T_heatsoil2 VV Bat Bagn_leaf Tair_max Tair_min Tgrap_max
Tgrap min Tleaf max Tleaf_min Tsoil1_max Tsoil1_min Tsoil2_max Tsoil2_min
Wind_max Wind_min\r');
%             in = size(daily);
%             for xx=1:in(1)
%                 fprintf(fid3, ...
%                     '%d %c %d %c %f %c %f %c %f %c %f %c %f %c %f %c %f
%c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
%f %c %f %c %f %c %f\r', ...
%                     daily(xx,1), ' ', daily(xx,2), ' ', daily(xx,3), ' ',
daily(xx,4), ' ', daily(xx,5), ' ', ...
%                     daily(xx,6), ' ', daily(xx,7), ' ', daily(xx,8), ' ',
daily(xx,9), ' ', daily(xx,10), ' ' ,...
%                     daily(xx,11), ' ', daily(xx,12), ' ', daily(xx,13), '
', daily(xx,14), ' ', daily(xx,15), ' ', daily(xx,16), ' ', daily(xx,17), '
', daily(xx,18), ' ', daily(xx,19), ' ', daily(xx,20), ' ', daily(xx,21), '
', daily(xx,22), ' ', daily(xx,23), ' ', daily(xx,24), ' ', daily(xx,25));
%             end
%             fclose(fid3);
%             end
          %%%%%%%%%%%%%%  DESPIKING giornaliero fine %%%%%%%%%%%%%%

                        daily=[];
                        alle=length(hourly);
                        hourly=[];

      disp('          ok         ')
      end
    end
          disp('          ok ok         ')
          disp('          --------------------         ')
          disp('          ho tolto potenziale e wind dove non era collegato
          ')

          end
```

```
clear all;
close all;
clc;

disp('          CI SONO I COEFFICIENTI CALIBRAZIONE le soglie e il
despiking  e anche media mobile      ')

st=input('ID station (LOC=Master;S=Slave): ','s');
stt=input('Vigna (BR=Brolio;MA=Mortelle alta Cacciagrande;MB=Mortelle bassa
Cortigliano;DO=Donna Olimpia): ','s');
styear=input('Anno: ');
safety=input('Vuoi salvare il file output ? Si(1) No(2); ');
File_save='C:\TUSCANIA\DATI_2009\Scheduler\OUTPUT_ORARI_DESPIKING';
File_save_desp='C:\TUSCANIA\DATI_2009\Scheduler\OUTPUT_GIORNALIERI_DESPIKIN
G';
filemast=input('File MASTER: ','s');


%                             coefficienti calibrazione 2008
% if stt == 'BR'
%     File_path='C:\TUSCANIA\DATI\Scheduler\Brolio\OUTPUT';
%     File_path_loc='C:\TUSCANIA\DATI\Scheduler\Brolio\OUTPUT';
%     slavenumb=[65 66 67 68 69 70 71 72 73 76 77];
%         span_air=[0.9768      0.9687  0.9896  0.9805  0.9963  0.9936
0.9879  0.9896  1       1.0245  0.9871];
%         offset_air=[-0.3841   -0.4947 0.3281  0.3615  0.9952  -0.1988
0.7426  0.3281  -0.0471 -1.0027 0.5001];
%         span_grape=[0.9947    1.0013  0.998   1       0.9986  0.9515
0.9832  0.998   0.9995  1.0293  0.9659];
%         offset_grape=[-0.4849 -0.5348 -0.515  0.3224  1.2254  0.1085
1.2596  -0.515  -0.2466 -1.0655 0.5802];
%         span_leaf=[1  1       1       1       1       1       1       1
1       1       1];
%         offset_leaf=[0        0       0       0       0       0       0
0       0       0       0];
%         offset_rad=[-13.1     5.2     8.1     -5.6    -13.4   9.3
-2.0    12.6    -6.6    -1.3    -5.6];
%         doy_cal=9400;
%         doy_rad=15900;
%         doy_cal2=13900;
%         doy_delta=10600;
%
%     %slavenumb=char('A','B','C','D','E','F','G','H','I','L','M');
% elseif stt == 'DO'
%     File_path='C:\TUSCANIA\DATI\Scheduler\Donna_Olimpia\OUTPUT';
%     File_path_loc='C:\TUSCANIA\DATI\Scheduler\Donna_Olimpia\OUTPUT';
%     slavenumb=[65 66 67 68 69 70 71 72 73 76];
%         span_air=[0.9635      1.1082  1.0333  1.0157  1.0389  1.0085
0.9971  0.9553  0.9532  0.9822];
%         offset_air=[0.2372    -1.8737 0.0884  0.9189  0.017   -0.5595
0.0606  -0.3388 0.7286  -0.7899];
%         span_grape=[1.0497    1.1019  0.9895  1.0048  0.9617  1.0022
0.9724  0.9918  1.0005  1.0031];
%         offset_grape=[-0.7762 -1.9487 0.8975  -0.2804 -0.2618 -0.5959
0.6029  -0.4012 0.2987  0.9814];
%         span_leaf=[1  1       1       1       1       1       1       1
1       1];
%         offset_leaf=[0        0       0       0       0       0       0
0       0       0];
%         offset_rad=[19.1      14.7    14.7    14.7    10.2    -4.3
-17.9   -5.2    -2.8    -13.7];
%         doy_cal=10200;
%         doy_rad=16500;
%         doy_cal2=14700;
%         doy_delta=11400;
%     %slavenumb=char('A','B','C','D','E','F','G','H','I','L');
% elseif stt == 'MB'
%     File_path='C:\TUSCANIA\DATI\Scheduler\Mortelle\OUTPUT';
%     File_path_loc='C:\TUSCANIA\DATI\Scheduler\Mortelle_Bassa\OUTPUT';
%     slavenumb=[65 66 67 68 69 70 71 72 73 76];
%         span_air=[0.976       1       1.0248  0.9842  1.0053  0.9795
1.0171  0.9686  1       0.9805];
%         offset_air=[-0.4343   0       -0.9627 0.8467  -0.1367 0.5064
```

```
-0.2492 0.4459  0       0.8548];
%           span_grape=[0.9842    1       0.9926  0.9853  0.9859  0.9912
0.9774  1.0022  1       1.0192];
%           offset_grape=[0.2374  0       0.1723  0.3958  0.2215  0.1312
0.9222  -0.6727 0       -0.1189];
%           span_leaf=[1.0493     1       1.1018  1.0705  1       1.0877
1.113   1       1       1];
%           offset_leaf=[-1.0401  0       -2.2474 -1.2487 0       -0.9331
-1.5984 0       0       0];
%           offset_rad=[-20.0     7.3     -18.5   9.6     11.5    -9.7    0.0
19.7    2.0     3.0];
%           doy_cal=10200;
%           doy_rad=15000;
%           doy_cal2=14700;
%           doy_delta=11400;
%       %slavenumb=char('A','B','C','D','E','F','G','H','I','L');
% elseif stt == 'MA'
%       File_path='C:\TUSCANIA\DATI\Scheduler\Mortelle\OUTPUT';
%       File_path_loc='C:\TUSCANIA\DATI\Scheduler\Mortelle_Alta\OUTPUT';
%       slavenumb=[77 78 79 80 81 82 83 84 85 86];
%           span_air=[1   1       0.9922  0.9844  0.9936  1.0149  0.9786
0.998   0.9737  0.9881];
%           offset_air=[0 0       -0.2944 0.1739  0.9748  -0.2097 0.2287
0.3717  0.4536  -0.0971];
%           span_grape=[1 1       0.9882  0.9745  0.9238  0.9713  0.9783
0.9825  0.9768  0.9955];
%           offset_grape=[0       0       0.1157  0.5809  2.1741  0.499
0.1835  0.8863  0.2278  -0.4314];
%           span_leaf=[1  1       0.9509  0.9724  1.0826  1.0143  1
0.9769  0.9545  0.9725];
%           offset_leaf=[0        0       0.2133  0.3896  -1.0441 -0.1543 0
1.2074  1.1554  -0.0696];
%           offset_rad=[-13.7     12.9    7.7     16.6    -16.3   9.6     0.0
-10.4   9.6     -17.4];
%           doy_cal=10200;
%           doy_rad=15000;
%           doy_cal2=14700;
%           doy_delta=11400;
%           %slavenumb=char('M','N','O','P','Q','R','S','T','U','V');
% end

if stt == 'BR'
    File_path='C:\TUSCANIA\DATI_2009\Scheduler\Brolio\OUTPUT';
    File_path_loc='C:\TUSCANIA\DATI_2009\Scheduler\Brolio\OUTPUT';
    slavenumb=[65 66 67 68 69 70 71 72 73 76 77];
        span_air=[0.9986        0.9998  0.9873  1.0031  1.0014  1.0062
        0.9983  0.9871  0.9932  1.0162  0.984];
        offset_air=[-0.4787     -0.7786 0.5256  0.4673  1.0731  -0.1523
        0.9217  -0.632  0.2644  -1.2181 0.1937];
        span_grape=[1.0105      1.0132  1.0178  1.0109  1.0083  1.0184
        1.0083  0.9664  0.9633  1.0132  0.9707];
        offset_grape=[-0.8012   -0.8762 0.2164  0.0853  1.0467  -0.4123
        1.0467  -0.0009 0.6149  -0.8762 0.2857];
        span_leaf=[1.0048       0.9911  1.0001  0.9926  0.9925  1.0035  1
        1.0863  1.192   1.0324  1.0709];
        offset_leaf=[-0.4084    -0.9066 0.1508  0.3013  1.0134  -0.0218 0
        -7.6104 -17.116 -89.01  -8.7856];
        offset_rad=[-13.1       5.2     8.1     -5.6    -13.4   9.3
        -2.0    12.6    -6.6    -1.3    -5.6];

        span_grape2=[1  1       1       1       0.9479  0.9164  0.9586
        0.923   0.5545  0.9891  1];
        offset_grape2=[0        0       0       0       0.6468  0.947
        0.6883  0.2833  17.756  0.3975  0];
        span_grape3=[1  1       1       1       0.9419  0.9479  0.9718
        0.9538  1.0063  0.9966  0.9664  1];
        offset_grape3=[0    0   0       0       1.2228  0.6468  0.785
        0.0037  0.4635  -0.5021 0];

        doy_cal=6000;
        doy_rad=6000;
        doy_cal2=6000;
        doy_delta=6000;
```

```
    %slavenumb=char('A','B','C','D','E','F','G','H','I','L','M');
elseif stt == 'DO'
    File_path='C:\TUSCANIA\DATI_2009\Scheduler\Donna_Olimpia\OUTPUT';
    File_path_loc='C:\TUSCANIA\DATI_2009\Scheduler\Donna_Olimpia\OUTPUT';
    slavenumb=[65 66 67 68 69 70 71 72 73 76];
        span_air=[0.9788        0.9795  0.9864  0.9944  1.0424  1.0026
        0.9639  0.9725  0.9605  0.9794];
        offset_air=[0.2369      0.0239  0.8506  0.8263  -0.2877 -0.792
        0.0876  -0.732  0.1879  0.7034];
        span_grape=[0.999       0.998   0.993   1.003   1       1.0163
        0.9145  0.9513  0.9471  1];
        offset_grape=[0.3749    -0.1538 1.2598  -0.2013 0       -0.5571
        0.7891  -0.3176 0.2983  0];
        span_leaf=[0.9919       0.9839  0.9904  0.9424  0.9688  0.9909
        1.1171  1.0556  1.1161  1.0356];
        offset_leaf=[-0.153     -0.2263 1.2385  -8.3202 -12.345 -0.4957
        -10.776 -6.6562 -10.505 -89.537];
        offset_rad=[19.1        14.7    14.7    14.7    10.2    -4.3
        -17.9   -5.2    -2.8    -13.7];

        span_grape2=[1  0.9894  0.9373  1   0.8827      1   0.9935
        0.9619  1       1];
        offset_grape2=[0        0.3922  0.6034  0   2.8871      0   -0.2301
        0.6141  0       0];
        span_grape3=[1  0.9971  0.9595  1       0.891   1   1.0009
        0.9414  1   1];
        offset_grape3=[0    -0.5111     0.5734  0       1.4996  0
        -0.1732 1.3277  0   0];

        doy_cal=6000;
        doy_rad=6000;
        doy_cal2=6000;
        doy_delta=6000;
    %slavenumb=char('A','B','C','D','E','F','G','H','I','L');
elseif stt == 'MB'
    File_path='C:\TUSCANIA\DATI_2009\Scheduler\Mortelle\OUTPUT';
    File_path_loc='C:\TUSCANIA\DATI_2009\Scheduler\Mortelle_Bassa\OUTPUT';
    slavenumb=[65 66 67 68 69 70 71 72 73 76];
        span_air=[0.9563        1.0174  1.0020  1       0.9957  1
        0.9238  1.003   1       1.0152];
        offset_air=[-0.5709     0.1590  -0.5750 -5      -0.5224 0
        -5.2875 -0.7151 0       -0.3015];
        span_grape=[0.9935      0.9845  0.9856  0.998   0.9932  1
        0.9903  0.9926  1       0.9756];
        offset_grape=[-0.3551   0.8275  -0.0938 -0.2911 -0.2935 -3
        0.1701  -0.6737 0       0.1772];
        span_leaf=[0.9901       0.9974  0.9971  0.9974  0.992   0.9953
        0.9917  1.0197  0.9854  0.9977];
        offset_leaf=[0.0339     0.3704  0.0087  0.1513  0.0754  -88.51
        0.5024  -0.1468 -0.4012 0.0628];
        offset_rad=[-20.0       7.3     -18.5   9.6     11.5    -9.7    0.0
        19.7    2.0     3.0];
        span_grape2=[1  1.0767  1.0134  1       1       0.7785  0.8568  1
        1       1];
        offset_grape2=[0        0.0343  -1.1855 0       0       3.0006
        6.2336  0       0       0];
        span_grape3=[1  0.9537  1.4806  1       1       0.7903  0.9374  1
        1       1];
        offset_grape3=[0        0.9909  -6.472  0       0       2.3206
        1.5795  0       0       0];
        doy_cal=6000;
        doy_rad=6000;
        doy_cal2=6000;
        doy_delta=6000;
    %slavenumb=char('A','B','C','D','E','F','G','H','I','L');
elseif stt == 'MA'
    File_path='C:\TUSCANIA\DATI_2009\Scheduler\Mortelle\OUTPUT';
    File_path_loc='C:\TUSCANIA\DATI_2009\Scheduler\Mortelle_Alta\OUTPUT';
    slavenumb=[77 78 79 80 81 82 83 84 85 86];
        span_air=[0.9990        1.0152  1.0063  0.9621  1.0064  0.9991
        0.9991  0.9975  0.9838  0.9991];
        offset_air=[0.2243      -0.0583 -0.4651 -7.5271 0.6906  0.0262
```

```
        -0.2196 0.1673  0.0872  -0.3192];
        span_grape=[0.9895      1.0015  0.9993  0.9851  0.9861  1
        0.9794  0.9754  1.0208  0.9908];
        offset_grape=[0.524     0.227   -0.0716 0.2514  0.9906  0
        0.2423  0.5813  -0.1064 -0.1645];
        span_leaf=[0.9925       0.9902  0.9928  0.99    1.0008  0.9873
        0.9846  1.0151  0.996   0.9894];
        offset_leaf=[0.6657     0.5189  0.0485  0.5852  -2.9023 0.3903
        0.4683  -2.6994 0.1953  0.2872];
        offset_rad=[-13.7       12.9    7.7     16.6    -16.3   9.6     0.0
        -10.4   9.6     -17.4];

        span_grape2=[1  1   0.8662      1       1       1.1     0.9969  1
        1       0.9919];
        offset_grape2=[0    0   2.6229  0       0       -0.7983 -0.4557 0
        0       -0.1082];
        span_grape3=[1  1   0.9581      1       1       0.9921  1.0114  1
        1       1.0238];
        offset_grape3=[0    0   0.8046  0       0       -0.0535 -0.105  0
        0       -0.5867];

        doy_cal=6000;
        doy_rad=6000;
        doy_cal2=6000;
        doy delta=6000;
        %slavenumb=char('M','N','O','P','Q','R','S','T','U','V');
end

if st=='LOC'
  File_wrk=[File_path_loc '\' st '.dat'];
        N=dload(File_wrk);
    % MASTER
% year  doyM    Tempmedia       Tmax    Tmin    Tdevstd Tultimo Umidmedia
URmax   URmin   URdevstd        URultimo        Presmedia
% 1       2       3       4     5       6       7       8       9     10
11      12              13
% Pmax  Pmin    Pdevstd Pultimo RadGmedia       Rmax    Rmin    Rdevstd
Rultimo Piogsomma       VVent1Vmed      Vdevstd Vraf
% 14    15      16      17      18      19      20      21      22      23
24              25      26
% Vmin  Vultimo DVent1Dprev     Draf    Dultimo numcamp Batteria
% 27      28            29        30      31      32            33
        %step 1 ordina ed elimina doppie
        [Y,I]=sort(N.doyM(:,1));
        datatemp=[N.year(I,1) N.doyM(I,1) N.Tempmedia(I,1) N.Tmax(I,1)
        N.Tmin(I,1) N.Tdevstd(I,1) N.Tultimo(I,1) N.Umidmedia(I,1)
        N.URmax(I,1) N.URmin(I,1) N.URdevstd(I,1) N.URultimo(I,1)
        N.Presmedia(I,1) N.Pmax(I,1) N.Pmin(I,1) N.Pdevstd(I,1)
        N.Pultimo(I,1) N.RadGmedia(I,1) N.Rmax(I,1) N.Rmin(I,1)
        N.Rdevstd(I,1) N.Rultimo(I,1) N.Piogsomma(I,1) N.VVent1Vmed(I,1)
        N.Vdevstd(I,1) N.Vraf(I,1) N.Vmin(I,1) N.Vultimo(I,1)
        N.DVent1Dprev(I,1) N.Draf(I,1) N.Dultimo(I,1) N.numcamp(I,1)
        N.Batteria(I,1)];
        [I,J]=unique(datatemp(:,2));
        data=[datatemp(J,1) datatemp(J,2) datatemp(J,3) datatemp(J,4)
        datatemp(J,5) datatemp(J,6) datatemp(J,7) datatemp(J,8)
        datatemp(J,9) datatemp(J,10) datatemp(J,11) datatemp(J,12)
        datatemp(J,13) datatemp(J,14) datatemp(J,15) datatemp(J,16)
        datatemp(J,17) datatemp(J,18) datatemp(J,19) datatemp(J,20)
        datatemp(J,21) datatemp(J,22) datatemp(J,23) datatemp(J,24)
        datatemp(J,25) datatemp(J,26) datatemp(J,27) datatemp(J,28)
        datatemp(J,29) datatemp(J,30) datatemp(J,31) datatemp(J,32)
        datatemp(J,33)];
        F = data(:,:);
        F(F==-999) = NaN;
        data(:,:)=F;



       % elaborazioni giornaliere
        appog=data(1,2);
        app2=num2str(data(1,2));
        data(1,2)=1111111;
```

```
        prova=num2str(data(:,2));
        D=str2num(prova(:,1:3));
        D(1)=appog;
        doyi=D(2);
        doyf=D(end);
        %elaborazioni orarie
        prova2=num2str(data(:,2));%
        D2=str2num(prova2(:,4:7));%
        %D2(1)=str2num(app2(:,4:7));
        D2=D2/100;%
        D3=fix((D2+0.1)*24/100) ; %
        D3(1)=D3(2);
        ii=1;
        i2=1;%
        data(1,2)=appog;

        for i=doyi:doyf
          ijj = find(D==i);
         if size(ijj,1)>1
          daily(ii,:) = nanmean(data(ijj,:)); % per le medie giornaliere
          daily(ii,2)=i;
          daily(ii,23)= nansum(data(ijj,23));  % cumulate giornaliere
          precipitazione mm
          daily(ii,4)= nanmax(data(ijj,4));
          daily(ii,5)= nanmin(data(ijj,5));
          daily(ii,9)= nanmax(data(ijj,9));
          daily(ii,10)= nanmin(data(ijj,10));
          daily(ii,19)= nanmax(data(ijj,19));
          daily(ii,20)= nanmin(data(ijj,20));

              if styear>2007
                daily(ii,24)= nansum(data(ijj,24)*300/1000);  % vento
                sfilato km giorno rilev 5 min
                daily(ii,18)= nansum(data(ijj,18)*300/1000000);  % cumulate
                radiazione Mj /m2
              else
                if (stt=='DO' & i>=222 | stt=='BR' & i>=194 | stt=='MB' &
                i>=261 | stt=='MA' & i>=261)
                daily(ii,24)= nansum(data(ijj,24)*300/1000);  % vento
                sfilato km giorno rilev 5 min
                daily(ii,18)= nansum(data(ijj,18)*300/1000000);  % cumulate
                radiazione Mj /m2
                else
                daily(ii,24)= nansum(data(ijj,24)*900/1000);  % vento
                sfilato km giorno rilev 15 min
                daily(ii,18)= nansum(data(ijj,18)*900/1000000);  % cumulate
                radiazione Mj /m2
                end
              end
          ii=ii+1;
          else
          daily(ii,:) = NaN;
          daily(ii,2)=i;
          ii=ii+1;
         end

         %elaborazione oraria
                        if size(ijj,1)>1
                          zz1=ijj(1);
                          for iii=D3(ijj(1)):D3(ijj(end))
                            ij2=find(D3(ijj)==iii);
                            if size(ij2,1)>1
                              zz=zz1+length(ij2);
                              azz=data(zz1:(zz-1),:);
                              zz1=zz;
                              hourly(i2,:)=nanmean(azz(:,:));
                              hourly(i2,2)=i+double(iii*100/24)/100;
                              hhour(i2,1)=i;
                              hhour(i2,2)=iii;
                                 hourly(i2,23)= nansum(azz(:,23));  %
                                 cumulate giornaliere precipitazione mm
                                 hourly(i2,4)= nanmax(azz(:,4));
                                 hourly(i2,5)= nanmin(azz(:,5));
```

```
                                    hourly(i2,9)= nanmax(azz(:,9));
                                    hourly(i2,10)= nanmin(azz(:,10));
                                    hourly(i2,19)= nanmax(azz(:,19));
                                    hourly(i2,20)= nanmin(azz(:,20));

                                 if iii==24
                                   hourly(i2,2)=i;
                                 end
                                 i2=i2+1;
                               else
                                 hourly(i2,:) = NaN;
                                 hourly(i2,2)=i+double(iii*100/24)/100;
                                 i2=i2+1;
                               end
                             end
                           else
                             hourly(i2,:) = NaN;
                             hourly(i2,2)=i+double(iii*100/24)/100;
                             i2=i2+1;
                           end
                           %fine elab oraria
        end

                %inserisci giorni mancanti
        hourly(:,2)=hourly(:,2)*100;
                            startday=fix(hourly(1,2)/100);
                            endday=fix(hourly(end,2)/100);
                            ndays=endday-startday+1;
                            ncol=33;
                            A=NaN*ones(ndays*24,ncol);
                            A(:,1)=styear;
                            for i=0:ndays-1
                               for j=0:23
                                 A(i*24+j+1,2)=
                                 str2num([num2str(startday+i,'%.3d')
                                 num2str(j,'%.2d')]);
                               end
                            end

                               newdoy1=hourly(:,2)/100-fix(hourly(:,2)
                               /100);
                               newdoy2=int16(newdoy1*24);
                               appdoy=hourly(:,2);
                               hourly(:,2)=str2num([num2str(fix(hourly(:,2)
                               /100),'%.3d') num2str(newdoy2,'%.2d')]);;
                               B=hourly(:,:);

                             for i=1:size(A,1)
                               index=find(B(:,2)==A(i,2));
                               if length(index)>=1
                                 A(i,:)=B(index(1),:);
                               end
                             end
    hourly=A;
%         % salvataggio file .mat
% %         eval(['M_' stt '_RT = data(:,:);']);
%          eval(['M_' stt '_DY = daily(:,:);']);
%          eval(['M_' stt '_HY = hourly(:,:);']);
% %         %eval(['M_' stt '_HY(:,2) = M_' stt '_HY(:,2)*100;']);
%          fname=['M_' stt];
%          eval(['save C:\TUSCANIA\DATI\Scheduler\Master\' fname ' M_*;']);


         % salvataggio files REAL TIME MASTER

    if safety == 1
%       adesso=datestr(now, 'ddmmyyyy');
%       file_out=[File_path '\' stt '_M_' adesso '.out'];
%         fid1 = fopen(file_out, 'w');
%         fprintf(fid1,'data ora Tempmedia Tmax Tmin Tdevstd Tultimo
Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd Pultimo
RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed Vdevstd Vraf Vmin
Vultimo DVent1Dprev Draf Dultimo numcamp Batteria\r');
```

```
%         in = size(data);
%         for xx=1:in(1)
%          annoj=data(xx,1);
%          jd=D(xx,1);
%          jd1=double(yearday(annoj,jd));
%          jd2=(data(xx,2)/10000)-(D(xx,1));
%          jd3=double(jd1+jd2+0.0001);
%          stringadoy=datestr(jd3,'dd/mm/yyyy HH:MM');
%         fprintf(fid1, ...
%         '%s %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f
%c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
%f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r', ...
%         stringadoy, ' ',  data(xx,3), ' ', data(xx,4), ' ', data(xx,5), '
', ...
%         data(xx,6), ' ', data(xx,7), ' ', data(xx,8), ' ', data(xx,9), '
', data(xx,10), ' ' ,...
%         data(xx,11), ' ', data(xx,12), ' ', data(xx,13), ' ',
data(xx,14), ' ', data(xx,15), ' ' ,...
%         data(xx,16), ' ', data(xx,17), ' ', data(xx,18), ' ',
data(xx,19), ' ', data(xx,20), ' ' ,...
%         data(xx,21), ' ', data(xx,22), ' ', data(xx,23), ' ',
data(xx,24), ' ', data(xx,25), ' ' ,...
%         data(xx,26), ' ', data(xx,27), ' ', data(xx,28), ' ',
data(xx,29), ' ', data(xx,30), ' ' ,...
%         data(xx,31), ' ', data(xx,32), ' ', data(xx,33));
%         %year doyM Tempmedia Tmax Tmin Tdevstd Tultimo Umidmedia URmax
URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd Pultimo RadGmedia Rmax
Rmin Rdevstd Rultimo Piogsomma VVent1Vmed Vdevstd Vraf Vmin Vultimo
DVent1Dprev Draf Dultimo numcamp Batteria
%         %2007 2424687 28.0 28.0 28.0 0.008 28.0 62 63 60 1.23 60 1015
1015 1015 0.00 1015 664 689 638 25.28 689 0.0 5.64 5.6371 11.27 0.00 11.27
99 99 99 2 13564
%         %2007 2393645 25.61 26.04 25.21 -999 -999 57.25 61.12 53.51 -999
-999 1024.34 1024.82 -999 -999 -999 455.04 469.35 -999 -999 -999 0 0.81
-999 1.13 -999 -999 158 135 -999 -999 -999
%         end
%         fclose(fid1);

   %salvataggio file orario
        adesso=datestr(now, 'ddmmyyyy');
        file_out=[File_save '\' stt '_TUS_M_HY_0_' adesso '.out'];
        fid2 = fopen(file_out, 'w');
        fprintf(fid2,'Year JDT Tempmedia Tmax Tmin Tdevstd Tultimo
        Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd
        Pultimo RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed
        Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo numcamp
        Batteria\r');
        in = size(hourly);
        for xx=1:in(1)
        fprintf(fid2, ...
        '%d %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r',
        ...
        hourly(xx,1), ' ',hourly(xx,2), ' ', hourly(xx,3), ' ',
        hourly(xx,4), ' ', hourly(xx,5), ' ', ...
        hourly(xx,6), ' ', hourly(xx,7), ' ', hourly(xx,8), ' ',
        hourly(xx,9), ' ', hourly(xx,10), ' ' ,...
        hourly(xx,11), ' ', hourly(xx,12), ' ', hourly(xx,13), ' ',
        hourly(xx,14), ' ', hourly(xx,15), ' ' ,...
        hourly(xx,16), ' ', hourly(xx,17), ' ', hourly(xx,18), ' ',
        hourly(xx,19), ' ', hourly(xx,20), ' ' ,...
        hourly(xx,21), ' ', hourly(xx,22), ' ', hourly(xx,23), ' ',
        hourly(xx,24), ' ', hourly(xx,25), ' ' ,...
        hourly(xx,26), ' ', hourly(xx,27), ' ', hourly(xx,28), ' ',
        hourly(xx,29), ' ', hourly(xx,30), ' ' ,...
        hourly(xx,31), ' ', hourly(xx,32), ' ', hourly(xx,33));
        end
        fclose(fid2);

       %salvataggio file orario  despiking
%         adesso=datestr(now, 'ddmmyyyy');
%         file_out=[File_save_desp '\' stt '_TUS_M_HY_0_despike' adesso
```

```
'.out'];
%         fid2 = fopen(file_out, 'w');
%         fprintf(fid2,'Year JDT Tempmedia Tmax Tmin Tdevstd Tultimo 
Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd Pultimo 
RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed Vdevstd Vraf Vmin 
Vultimo DVent1Dprev Draf Dultimo numcamp Batteria\r');
%         in = size(hourly);
%         for xx=1:in(1)
%         fprintf(fid2, ...
%         '%d %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f 
%c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c 
%f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r', ...
%         hourly(xx,1), ' ',hourly(xx,2), ' ', hourly(xx,3), ' ', 
hourly(xx,4), ' ', hourly(xx,5), ' ', ...
%         hourly(xx,6), ' ', hourly(xx,7), ' ', hourly(xx,8), ' ', 
hourly(xx,9), ' ', hourly(xx,10), ' ' ,...
%         hourly(xx,11), ' ', hourly(xx,12), ' ', hourly(xx,13), ' ', 
hourly(xx,14), ' ', hourly(xx,15), ' ' ,...
%         hourly(xx,16), ' ', hourly(xx,17), ' ', hourly(xx,18), ' ', 
hourly(xx,19), ' ', hourly(xx,20), ' ' ,...
%         hourly(xx,21), ' ', hourly(xx,22), ' ', hourly(xx,23), ' ', 
hourly(xx,24), ' ', hourly(xx,25), ' ' ,...
%         hourly(xx,26), ' ', hourly(xx,27), ' ', hourly(xx,28), ' ', 
hourly(xx,29), ' ', hourly(xx,30), ' ' ,...
%         hourly(xx,31), ' ', hourly(xx,32), ' ', hourly(xx,33));
%         end
%         fclose(fid2);



        %salvataggio file giornaliero
%         adesso=datestr(now, 'ddmmyyyy');
%         file_out=[File save '\' stt '_TUS_M_DY_0_' adesso '.out'];
%         fid2 = fopen(file_out, 'w');
%         fprintf(fid2,'Year JDT Tempmedia Tmax Tmin Tdevstd Tultimo 
Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd Pultimo 
RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed Vdevstd Vraf Vmin 
Vultimo DVent1Dprev Draf Dultimo numcamp Batteria\r');
%         in = size(daily);
%         for xx=1:in(1)
%         fprintf(fid2, ...
%         '%d %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f 
%c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c 
%f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r', ...
%         daily(xx,1), ' ',daily(xx,2), ' ', daily(xx,3), ' ', daily(xx,4), 
' ', daily(xx,5), ' ', ...
%         daily(xx,6), ' ', daily(xx,7), ' ', daily(xx,8), ' ', 
daily(xx,9), ' ', daily(xx,10), ' ' ,...
%         daily(xx,11), ' ', daily(xx,12), ' ', daily(xx,13), ' ', 
daily(xx,14), ' ', daily(xx,15), ' ' ,...
%         daily(xx,16), ' ', daily(xx,17), ' ', daily(xx,18), ' ', 
daily(xx,19), ' ', daily(xx,20), ' ' ,...
%         daily(xx,21), ' ', daily(xx,22), ' ', daily(xx,23), ' ', 
daily(xx,24), ' ', daily(xx,25), ' ' ,...
%         daily(xx,26), ' ', daily(xx,27), ' ', daily(xx,28), ' ', 
daily(xx,29), ' ', daily(xx,30), ' ' ,...
%         daily(xx,31), ' ', daily(xx,32), ' ', daily(xx,33));
%         end
%         fclose(fid2);

        %salvataggio file giornaliero despiking
        adesso=datestr(now, 'ddmmyyyy');
        file_out=[File_save_desp '\' stt '_TUS_M_DY_0_' adesso '.out'];
        fid2 = fopen(file_out, 'w');
        fprintf(fid2,'Year JDT Tempmedia Tmax Tmin Tdevstd Tultimo 
        Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd 
        Pultimo RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed 
        Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo numcamp 
        Batteria\r');
        in = size(daily);
        for xx=1:in(1)
        fprintf(fid2, ...
        '%d %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
```

```
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r',
        ...
        daily(xx,1), ' ',daily(xx,2), ' ', daily(xx,3), ' ', daily(xx,4), '
        ', daily(xx,5), ' ', ...
        daily(xx,6), ' ', daily(xx,7), ' ', daily(xx,8), ' ', daily(xx,9),
        ' ', daily(xx,10), ' ' ,...
        daily(xx,11), ' ', daily(xx,12), ' ', daily(xx,13), ' ',
        daily(xx,14), ' ', daily(xx,15), ' ' ,...
        daily(xx,16), ' ', daily(xx,17), ' ', daily(xx,18), ' ',
        daily(xx,19), ' ', daily(xx,20), ' ' ,...
        daily(xx,21), ' ', daily(xx,22), ' ', daily(xx,23), ' ',
        daily(xx,24), ' ', daily(xx,25), ' ' ,...
        daily(xx,26), ' ', daily(xx,27), ' ', daily(xx,28), ' ',
        daily(xx,29), ' ', daily(xx,30), ' ' ,...
        daily(xx,31), ' ', daily(xx,32), ' ', daily(xx,33));
        end
        fclose(fid2);


    end


%        figure('Name','Master Hourly ');
% %        doyM Tempmedia Tmax Tmin Tdevstd Tultimo Umidmedia URmax URmin
URdevstd URultimo
%                        subplot(4,2,1),plot(hourly(:,2),hourly(:,3));
%                        hold on
%                        ylabel('Temperature')
%                        subplot(4,2,1),plot(hourly(:,2),hourly(:,4),'r');
%                        hold on
%                        %ylabel('Tmax')
%                        subplot(4,2,1),plot(hourly(:,2),hourly(:,5),'r');
%                        hold on
%                        %ylabel('Tmin')
%                        %axis([600 900 15 28])
%                        subplot(4,2,2),plot(hourly(:,2),hourly(:,8));
%                         hold on
%                        ylabel('Relative Humidity')
%                        %axis([0 i -20 20])
%
subplot(4,2,2),plot(hourly(:,2),hourly(:,9),'r');%URmax
%                         hold on
%
subplot(4,2,2),plot(hourly(:,2),hourly(:,10),'r');%URmin
%                         hold on
% %        Presmedia Pmax Pmin Pdevstd Pultimo RadGmedia Rmax Rmin Rdevstd
Rultimo Piogsomma
%                        subplot(4,2,3),plot(hourly(:,2),hourly(:,13));
%                        hold on
%                        ylabel('Pressure (hPA)')
%                        subplot(4,2,4),plot(hourly(:,2),hourly(:,18));
%                        hold on
%                        ylabel('Radiation (W/m2)Medie orarie non SUM')
%                        subplot(4,2,5),plot(hourly(:,2),hourly(:,23));
%                        hold on
%                        ylabel('Precipitation (mm)')
% %        VVent1Vmed Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo
numcamp Batteria
%                        subplot(4,2,6),plot(hourly(:,2),hourly(:,24));
%                        hold on
%                        ylabel('Wind (Km giorno)')
%                        subplot(4,2,7),plot(hourly(:,2),hourly(:,32));
%                        hold on
%                        ylabel('numpack (#)')
%                        subplot(4,2,8),plot(hourly(:,2),hourly(:,33));
%                        hold on
%                        ylabel('Battery (mV)')
%
%              figure('Name','Master Acquisition-time 5min');
% %        doyM Tempmedia Tmax Tmin Tdevstd Tultimo Umidmedia URmax URmin
URdevstd URultimo
%                        subplot(4,2,1),plot(data(:,2),data(:,3));
```

```
%                       hold on
%                       ylabel('Temperature')
%                       subplot(4,2,1),plot(data(:,2),data(:,4),'r');
%                       hold on
%                       %ylabel('Tmax')
%                       subplot(4,2,1),plot(data(:,2),data(:,5),'r');
%                       hold on
%                       %ylabel('Tmin')
%                       %axis([600 900 15 28])
%                       subplot(4,2,2),plot(data(:,2),data(:,8));
%                        hold on
%                       ylabel('Relative Humidity')
%                       %axis([0 i -20 20])
%                       subplot(4,2,2),plot(data(:,2),data(:,9),'r');%URmax
%                        hold on
%
subplot(4,2,2),plot(data(:,2),data(:,10),'r');%URmin
%                        hold on
% %         Presmedia Pmax Pmin Pdevstd Pultimo RadGmedia Rmax Rmin Rdevstd
Rultimo Piogsomma
%                       subplot(4,2,3),plot(data(:,2),data(:,13));
%                       hold on
%                       ylabel('Pressure (hPA)')
%                       subplot(4,2,4),plot(data(:,2),data(:,18));
%                       hold on
%                       ylabel('Radiation (W/m2)')
%                       subplot(4,2,5),plot(data(:,2),data(:,23));
%                       hold on
%                       ylabel('Precipitation (mm)')
% %         VVent1Vmed Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo
numcamp Batteria
%                       subplot(4,2,6),plot(data(:,2),data(:,24));
%                       hold on
%                       ylabel('Wind (Km giorno)')
%                       subplot(4,2,7),plot(data(:,2),data(:,32));
%                       hold on
%                       ylabel('numpack (#)')
%                       subplot(4,2,8),plot(data(:,2),data(:,33));
%                       hold on
%                       ylabel('Battery (mV)')
%
%              figure('Name','Master Daily')
%                       subplot(4,2,1),plot(daily(:,2),daily(:,3));
%                       hold on
%                       ylabel('Temperature')
%                       subplot(4,2,1),plot(daily(:,2),daily(:,4),'r');
%                       hold on
%                       %ylabel('Tmax')
%                       subplot(4,2,1),plot(daily(:,2),daily(:,5),'r');
%                       hold on
%
%                      %ylabel('Tmin')
%                       %axis([600 900 15 28])
%                       subplot(4,2,2),plot(daily(:,2),daily(:,8));
%                        hold on
%                       ylabel('Relative Humidity')
%                       %axis([0 i -20 20])
%
subplot(4,2,2),plot(daily(:,2),daily(:,9),'r');%URmax
%                        hold on
%
subplot(4,2,2),plot(daily(:,2),daily(:,10),'r');%URmin
%                        hold on
% %         Presmedia Pmax Pmin Pdevstd Pultimo RadGmedia Rmax Rmin Rdevstd
Rultimo Piogsomma
%                       subplot(4,2,3),plot(daily(:,2),daily(:,13));
%                       hold on
%                       ylabel('Pressure (hPA)')
%                       subplot(4,2,4),plot(daily(:,2),daily(:,18));
%                       hold on
%                       ylabel('Radiation (MJ/m2)Sum Daily')
%                       subplot(4,2,5),plot(daily(:,2),daily(:,23));
%                       hold on
```

```
%                       ylabel('Precipitation (mm)')
% %         VVent1Vmed Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo
numcamp Batteria
%                       subplot(4,2,6),plot(daily(:,2),daily(:,24));
%                       hold on
%                       ylabel('Wind (m/s)')
%                       subplot(4,2,7),plot(daily(:,2),daily(:,32));
%                       hold on
%                       ylabel('numpack (#)')
%                       subplot(4,2,8),plot(daily(:,2),daily(:,33));
%                       hold on
%                       ylabel('Battery (mV)')
%

else
    s1=1;%inizializzo indici vettori calibrazione
    f1=1;
    for hh=slavenumb(1):slavenumb(end)
      if (hh==74 | hh==75)
          pippo='N';
      else
         File_wrk=[File_path '\' hh '.dat'];
         M=dload(File_wrk);
%          File_master=[File_path_master '\M_' stt '.mat'];
%          load(File master);
%          eval(['Master_hy=M_' stt '_HY;'])
%          eval(['Master_dy=M_' stt '_DY;'])

% SLAVE
% year  DOY_hh  rad     Tair    Tgrap   Tleaf   Tsoil1  Tsoil2  T_heatsoil1
T_heatsoil2     VV      Bat     Bagn_leaf
% 1       2       3       4       5       6       7       8               9
10      11  12          13
            %step 1 ordina ed elimina doppie
            [Y,I]=sort(M.DOY_hh(:,1));
            datatemp=[M.Year(I,1) M.DOY_hh(I,1) M.Tcjc(I,1) M.Tair(I,1)
            M.Tgrap(I,1) M.Tleaf(I,1) M.Tsoil1(I,1) M.Tsoil2(I,1)
            M.T_heatsoil1(I,1) M.T_heatsoil2(I,1) M.VV(I,1) M.Bat(I,1)
            M.Bagn_leaf(I,1)];
            [I,J]=unique(datatemp(:,2));
            data=[datatemp(J,1) datatemp(J,2) datatemp(J,3) datatemp(J,4)
            datatemp(J,5) datatemp(J,6) datatemp(J,7) datatemp(J,8)
            datatemp(J,9) datatemp(J,10) datatemp(J,11) datatemp(J,12)
            datatemp(J,13)];
            F = data(:,:);
            F(F==-999) = NaN;
            data(:,:)=F;

            wind=data(:,11);
            wind(wind==0.2)=0;
            data(:,11)=wind;

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%
            %applico i coefficienti di calibrazione per le slave
            data(data(:,2)>=doy_cal,4)=(data(data(:,2)>=doy_cal,4)
            *span air(s1))+offset air(f1);
            data(data(:,2)>=doy cal,5)=(data(data(:,2)>=doy_cal,5)
            *span_grape(s1))+offset_grape(f1);
            data(data(:,2)>=doy_cal,6)=(data(data(:,2)>=doy_cal,6)
            *span_leaf(s1))+offset_leaf(f1);
            data(data(:,2)>=doy_cal,7)=(data(data(:,2)>=doy_cal,7)
            *span_grape2(s1))+offset_grape2(f1);
            data(data(:,2)>=doy_cal,8)=(data(data(:,2)>=doy_cal,8)
            *span_grape3(s1))+offset_grape3(f1);
%
%
            %sensori radiazione grappolo
            data(data(:,2)<doy_rad,3)=NaN;
            %coefficienti calibrazione radiazione grappolo
            data(data(:,2)>=doy_rad,3)=data(data(:,2)>=doy_rad,3)
            +offset_rad(f1);
            %elimino i negativi
```

```
            apprad=data(:,3);
            apprad(apprad<=25)=0;
            data(:,3)=apprad;
            s1=s1+1;
            f1=f1+1;
%             %conversione T_heatsoil da temperatura a delta T
%             data(data(:,2)<=doy_delta,9)=(data(data(:,2)<=
doy_delta,9))-(data(data(:,2)<=doy_delta,7));
%             data(data(:,2)<=doy_delta,10)=(data(data(:,2)<=
doy_delta,10))-(data(data(:,2)<=doy_delta,8));
%
            %inserimento soglie deltaT per il potenziale idrico
            %considerare solo valori di delta tra 0.01<x<2.75
            pot30=data(:,9);
            pot30(pot30>=2.75)=2.75;
            pot30(pot30<=0.01)=0.01;

            pot60=data(:,10);
            pot60(pot60>=2.75)=2.75;
            pot60(pot60<=0.01)=0.01;
%
%             %RANGE DI POTENZIALE IDRICO
%             Tasterisco30=(3.15-pot30)/(3.15-0.75);
%             pot30=-0.056*(Tasterisco30.^(-1/0.45)-1);
%             Tasterisco60=(3.15-pot60)/(3.15-0.75);
%             pot60=-0.056*(Tasterisco60.^(-1/0.45)-1);
%             %da Mpa a pF (scala 1-7)  %-LOG10(1/ASS(E12*10000))   %-
log10(1/abs(-2.95*10000))
% %             pf_i_30=abs(pot30*10000);
% %             pf_i_60=abs(pot60*10000);
% %             pf30=-log10(1./pf_i_30);
% %             pf60=-log10(1./pf_i_60);
% %             rh30=-22.392*log(pf30-1)+42.554; curva ritenzione media
campioni donna olimpia
% %             rh60=-22.392*log(pf60-1)+42.554;
% %             %data(:,9)=rh30;
% %             %data(:,10)=rh60;
%              %%%%%%%%%
             data(:,9)=pot30;
             data(:,10)=pot60;
%
            %inserimento soglie temperatura aria e grappolo
            s_air=data(:,4);
            s_air(s_air>=50 | s_air<=-20)=NaN;
            data(:,4)=s_air;
            s_grape=data(:,5);
            s_grape(s_grape>=50 | s_grape<=-20)=NaN;
            data(:,5)=s_grape;
            s_leaf=data(:,6);
            s_leaf(s_leaf>=60 | s_leaf<=-20)=NaN;
            data(:,6)=s_leaf;
%
%
%             %despiking manuale ESEGUITO GUARDANDO I DATI GIORNALIERI
%
                %filtro a 12 ore potenziale idrico
                aaa=1;
                bb12 = [1/12 1/12 1/12 1/12 1/12 1/12 1/12 1/12 1/12 1/12
                1/12 1/12];
                yy12_30 = filter(bb12,aaa,data(:,9));
                yy12_60 = filter(bb12,aaa,data(:,10));
                data(:,9)=yy12_30;
                data(:,10)=yy12_60;
%
        if stt == 'BR'
                %slavenumb=[65 66 67 68 69 70 71 72 73 76 77];
                data(data(:,2)<9099,4)=NaN; %Tair dal 91 in poi
                data(data(:,2)<15299,5)=NaN; %Tgrape dal 162 in poi
                data(data(:,2)>36500,3:12)=NaN; %dati oltre vendemmia
                data(data(:,2)<16299,6)=NaN; %Tleaf dal 162 in poi

                data(data(:,2)<16299,7)=NaN; %Tgrape2 dal 162 in poi
                data(data(:,2)<16299,8)=NaN; %Tgrape3 dal 162 in poi
```

```
%                 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%                 if hh==slavenumb(5) | hh==slavenumb(6)| hh==slavenumb(7)|
hh==slavenumb(8)| hh==slavenumb(9)| hh==slavenumb(10) %tolgo pot idr
%                 data(data(:,2)>100,7:10)=NaN;
%                 end
                if hh==slavenumb(5) | hh==slavenumb(7)| hh==slavenumb(9)|
                hh==slavenumb(11)%tolgo wind
                data(data(:,2)>100,11)=NaN;
                end

                if hh==slavenumb(4)%tgrape D tolgo le ore dalle 12 alle 16
                troppo alte
                    orenull=num2str(data(:,2));%
                    nuoveore=str2num(orenull(:,4:5));%
                    nnore=find(nuoveore<72 & nuoveore>49);
                    data(nnore,5) = NaN; %QUI METTO VETTORE MASTER
                    !!!!!!!!!!!!!!!!
                end

                if hh==slavenumb(10)%tgrape L
                data(data(:,2)>=23800,5)=NaN;
                end
%
        elseif stt == 'DO'
                %slavenumb=[65 66 67 68 69 70 71 72 73 76];
                data(data(:,2)<9099,4)=NaN; %Tair dal 91 in poi
                data(data(:,2)<15299,5)=NaN; %Tgrape dal 160 in poi
                data(data(:,2)>36500,3:12)=NaN; %dati oltre vendemmia
                data(data(:,2)<17799,6)=NaN; %Tleaf dal 170 in poi

                data(data(:,2)<16099,7)=NaN; %Tgrape2 dal 160 in poi
                data(data(:,2)<16099,8)=NaN; %Tgrape3 dal 160 in poi

%                 data((data(:,2)>=11300 & data(:,2)<=11699),7:10)=NaN;
%pot idr di tutte
%                 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%                 if hh==slavenumb(2) | hh==slavenumb(3)| hh==slavenumb(5)|
hh==slavenumb(7)| hh==slavenumb(8) %tolgo pot idr
%                 data(data(:,2)>100,7:10)=NaN;
%                 end
                if hh==slavenumb(1) | hh==slavenumb(3)| hh==slavenumb(6)|
                hh==slavenumb(8)%tolgo wind
                data(data(:,2)>100,11)=NaN;
                end
                if hh==slavenumb(2)%tolgo valori RAD della slave B
                data((data(:,2)>=9200 & data(:,2)<=28000),3)=NaN;
                end
%                 if hh==slavenumb(2)%tolgo valori della slave B
%                 data((data(:,2)>=15000 & data(:,2)<=28000),4:12)=NaN;
%                 end
%
        elseif stt == 'MB'
                 %slavenumb=[65 66 67 68 69 70 71 72 73 76];
                data(data(:,2)<9099,4)=NaN; %Tair dal 148 in poi
                data(data(:,2)<15299,5)=NaN; %Tgrape dal 160 in poi
                data(data(:,2)>36500,3:12)=NaN; %dati oltre vendemmia
                data(data(:,2)<16999,6)=NaN; %Tleaf dal 170 in poi

%                 if hh==slavenumb(2) | hh==slavenumb(3)| hh==slavenumb(4)|
hh==slavenumb(6)| hh==slavenumb(7) %tolgo pot idr
%                 data(data(:,2)>100,7:10)=NaN;
%                 end
                if hh==slavenumb(2) | hh==slavenumb(4)| hh==slavenumb(6)|
                hh==slavenumb(8)%tolgo wind
                data(data(:,2)>100,11)=NaN;
                end

                if hh==slavenumb(5)%tair E la tolgo
                data((data(:,2)>=9200 & data(:,2)<=28099),4)=NaN;
                end
                if hh==slavenumb(5)%tgrape E la tolgo
                data((data(:,2)>=9200 & data(:,2)<=28099),5)=NaN;
                end
```

```
%                  if hh==slavenumb(5)%tgrape E
%                  data((data(:,2)>=18400 & data(:,2)<=18499),5)=NaN;
%                  data((data(:,2)>=18700 & data(:,2)<=18799),5)=NaN;
%                  data((data(:,2)>=19600 & data(:,2)<=20099),5)=NaN;
%                  data((data(:,2)>=21000 & data(:,2)<=21099),5)=NaN;
%                  data((data(:,2)>=21200 & data(:,2)<=21799),5)=NaN;
%                  data((data(:,2)>=22200 & data(:,2)<=22299),5)=NaN;
%                  data((data(:,2)>=24600 & data(:,2)<=25299),5)=NaN;
%                  data((data(:,2)>=25600 & data(:,2)<=25899),5)=NaN;
%                  data((data(:,2)>=26700 & data(:,2)<=28099),5)=NaN;
%                  end
%                  if hh==slavenumb(4)%tgrape D
%                  data((data(:,2)>=22800 & data(:,2)<=22899),5)=NaN;
%                  data((data(:,2)>=26200 & data(:,2)<=26499),5)=NaN;
%                  data((data(:,2)>=27400 & data(:,2)<=28099),5)=NaN;
%                  end
%                  if hh==slavenumb(6)%tgrape E
%                  data((data(:,2)>=27000 & data(:,2)<=28099),5)=NaN;
%                  end
% %                  if hh==slavenumb(4)%tgrape D tolgo le ore dalle 12 alle
16 troppo alte
% %                      orenull=num2str(data(:,2));%
% %                      nuoveore=str2num(orenull(:,4:5));%
% %                      nnore=find(nuoveore<72 & nuoveore>49);
% %                      data(nnore,5) = NaN;
% %                  end
%                  if hh==slavenumb(2)%tgrape B senza coeff
%                  data(:,5)=data(:,5)+1;
%                  end
%                  if hh==slavenumb(7)%tgrape G tolgo le ore dalle 12 alle
16 troppo alte
%                      orenull=num2str(data(:,2));%
%                      nuoveore=str2num(orenull(:,4:5));%
%                      nnore=find(nuoveore<72 & nuoveore>49);
%                      data(nnore,5) = NaN;
%                  end
%                  if hh==slavenumb(7)%tair G la tolgo
%                  data((data(:,2)>=15000 & data(:,2)<=28099),4)=NaN;
%                  end
%                  if hh==slavenumb(3)%tair C tolgo le ore dalle 12 alle 16
troppo alte
%                      orenull=num2str(data(:,2));%
%                      nuoveore=str2num(orenull(:,4:5));%
%                      nnore=find(nuoveore<72 & nuoveore>49);
%                      data(nnore,4) = NaN;
%                  end
%                  if hh==slavenumb(4)%tleaf D
%                  data((data(:,2)>=17000 & data(:,2)<=28099),6)=NaN;
%                  end
%                  if hh==slavenumb(9)%tleaf I
%                  data((data(:,2)>=17000 & data(:,2)<=28099),6)=NaN;
%                  end
%                  if hh==slavenumb(2)%tleaf B
%                  data((data(:,2)>=17000 & data(:,2)<=21999),6)=NaN;
%                  end
%                  if hh==slavenumb(7)%tleaf G
%                  data((data(:,2)>=17000 & data(:,2)<=22699),6)=NaN;
%                  data((data(:,2)>=23600 & data(:,2)<=28099),6)=NaN;
%                  end
%                  if hh==slavenumb(10)%tleaf L
%                  data((data(:,2)>=22600 & data(:,2)<=23099),6)=NaN;
%                  data((data(:,2)>=25700 & data(:,2)<=26099),6)=NaN;
%                  end
%                  if hh==slavenumb(1)%tleaf A
%                  data((data(:,2)>=22800 & data(:,2)<=22999),6)=NaN;
%                  data((data(:,2)>=25700 & data(:,2)<=25999),6)=NaN;
%                  end
%
        elseif stt == 'MA'
                 %slavenumb=[77 78 79 80 81 82 83 84 85 86];
                data(data(:,2)<9099,4)=NaN; %Tair dal 148 in poi
```

```
                data(data(:,2)<15299,5)=NaN; %Tgrape dal 160 in poi
                data(data(:,2)>36500,3:12)=NaN; %dati oltre vendemmia
                data(data(:,2)<16999,6)=NaN; %Tleaf dal 169 in poi

%                 %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%                 if hh==slavenumb(3) | hh==slavenumb(5)| hh==slavenumb(6)|
hh==slavenumb(7)| hh==slavenumb(10) %tolgo pot idr
%                 data(data(:,2)>100,7:10)=NaN;
%                 end
                if hh==slavenumb(5) | hh==slavenumb(6)| hh==
                slavenumb(7)%tolgo wind
                data(data(:,2)>100,11)=NaN;
                end
                if hh==slavenumb(9)%tair U
                data((data(:,2)>=15200 & data(:,2)<=15399),4)=NaN;
                end
                if hh==slavenumb(8)%tgrape T
                data((data(:,2)>=9200 & data(:,2)<=28099),5)=NaN;
                end
                if hh==slavenumb(4)%tgrape P
                data((data(:,2)>=9200 & data(:,2)<=28099),5)=NaN;
                end
                if hh==slavenumb(4)%tair P
                data((data(:,2)>=9200 & data(:,2)<=28099),4)=NaN;
                end
                if hh==slavenumb(4)%rad P
                data((data(:,2)>=9200 & data(:,2)<=28099),3)=NaN;
                end

                if hh==slavenumb(6)%tgrape R  troppo alta
                data((data(:,2)>=20400 & data(:,2)<=25699),5)=
                data((data(:,2)>=20400 & data(:,2)<=25699),5)-6;
                data((data(:,2)>=20300 & data(:,2)<=20399),5)=NaN;

                data((data(:,2)>=21750 & data(:,2)<=22200),5)=NaN;
                data((data(:,2)>=22400 & data(:,2)<=22600),5)=NaN;
                data((data(:,2)>=23000 & data(:,2)<=23550),5)=NaN;
                data((data(:,2)>=23600 & data(:,2)<=23950),5)=NaN;
                data((data(:,2)>=24600 & data(:,2)<=25700),5)=NaN;
                end
                if hh==slavenumb(3)%tgrape O tolgo le ore dalle 12 alle 15
                troppo alte
                    orenull=num2str(data(:,2));%
                    nuoveore=str2num(orenull(:,4:5));%
                    nnore=find(nuoveore<69 & nuoveore>42);
                    data(nnore,5) = NaN;
                end
                if hh==slavenumb(4)%tair P
                data((data(:,2)>=23600 & data(:,2)<=28099),4)=NaN;
                end

         end

                  disp('         DESPIKE MANUALE INSERITO        ')

            %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%


                            %inserisci giorni mancanti
        hourly=data;
                            startday=fix(hourly(1,2)/100);
                            endday=fix(hourly(end,2)/100);
                            ndays=endday-startday+1;
                            ncol=13;
                            A=NaN*ones(ndays*24,ncol);
                            A(:,1)=styear;
                            for i=0:ndays-1
                               for j=0:23
                                 A(i*24+j+1,2)=
                                 str2num([num2str(startday+i,'%.3d')
                                 num2str(j,'%.2d')]);
                               end
                            end
```

```
                              newdoy1=hourly(:,2)/100-fix(hourly(:,2)
                              /100);
                              newdoy2=int16(newdoy1*24);
                              appdoy=hourly(:,2);
                              hourly(:,2)=str2num([num2str(fix(hourly(:,2)
                              /100),'%.3d') num2str(newdoy2,'%.2d')]);;
                              B=hourly(:,:);

                            for i=1:size(A,1)
                              index=find(B(:,2)==A(i,2));
                              if length(index)>=1
                                A(i,:)=B(index(1),:);
                              end
                            end
    hourly=A;


        appog=hourly(1,2);
        hourly(1,2)=11111;

              doyi=int16(hourly(2,2)/100);
              doyf=int16(hourly(end,2)/100);
              prova=num2str(hourly(:,2));
              D=str2num(prova(:,1:3));
              ii=1;
        hourly(1,2)=appog;
        D(1)=D(2);
              for i=doyi:doyf
                ijj = find(D==i);
                if size(ijj,1)>1
                  % controllo giorni parziali
                  for iii=1:13
                    ina=isnan(hourly(ijj,iii));
                    if sum(ina) >= 7
                      hourly(ijj,iii) = NaN;
                    end
                  end
                  %%%%%%%%%%%%%%%%
                daily(ii,1:13) = nanmean(hourly(ijj,:)); % per le medie
                giornaliere
                daily(ii,2)=i;
                daily(ii,13)= sum(hourly(ijj,13));  % per le cumulate
                giornaliere es. pioggia
                daily(ii,11)= sum(hourly(ijj,11)*3.6);  % vento sfilato
                daily(ii,3)= nansum(hourly(ijj,3)); %radiazione W m-2
                (integrale giornaliera)
                  daily(ii,14)= nanmax(hourly(ijj,4));  %Tair max
                  daily(ii,15)= nanmin(hourly(ijj,4));  %Tair min
                  daily(ii,16)= nanmax(hourly(ijj,5));  %Tgrap max
                  daily(ii,17)= nanmin(hourly(ijj,5));  %Tgrap min
                  daily(ii,18)= nanmax(hourly(ijj,6));  %Tleaf max
                  daily(ii,19)= nanmin(hourly(ijj,6));  %Tleaf min
                  daily(ii,20)= nanmax(hourly(ijj,7));  %Tsoil1 max
                  daily(ii,21)= nanmin(hourly(ijj,7));  %Tsoil1 min
                  daily(ii,22)= nanmax(hourly(ijj,8));  %Tsoil2 max
                  daily(ii,23)= nanmin(hourly(ijj,8));  %Tsoil2 min
                  daily(ii,24)= nanmax(hourly(ijj,11));  %Wind max
                  daily(ii,25)= nanmin(hourly(ijj,11));  %Wind min

                ii=ii+1;
                else
                daily(ii,:) = NaN;
                daily(ii,2)=i;
                ii=ii+1;
                end
              end

                 % salvataggio file .mat per despiking
                 %eval(['S_' hh '_' stt '_HY = hourly(:,:);']);

                            if safety == 1
                             %salvataggio file orario  per elaborazioni
```

```
                              statistiche tuscania
                              adesso=datestr(now, 'ddmmyyyy');
                              file_out=[File_save '\' stt '_TUS_S_HY_' hh
                              '_' adesso '.out'];
                                fid2 = fopen(file_out, 'w');
                                    fprintf(fid2,'Year JDT Rad Tair Tgrap
                                    Tleaf Tsoil1 Tsoil2 T_heatsoil1
                                    T_heatsoil2 VV Bat Bagn_leaf \r');
                                in = size(hourly);
                                for xx=1:in(1)
                                fprintf(fid2, ...
                                    '%d %c %f %c %f %c %f %c %f %c %f %c %f
                                    %c %f %c %f %c %f %c %f %c %f %c %f\r',
                                    ...
                                    hourly(xx,1), ' ', hourly(xx,2), ' ',
                                    hourly(xx,3), ' ', hourly(xx,4), ' ',
                                    hourly(xx,5), ' ', ...
                                    hourly(xx,6), ' ', hourly(xx,7), ' ',
                                    hourly(xx,8), ' ', hourly(xx,9), ' ',
                                    hourly(xx,10), ' ' ,...
                                    hourly(xx,11), ' ', hourly(xx,12), ' ',
                                    hourly(xx,13));
                                end
                                fclose(fid2);

                              %salvataggio files giornalieri
% 14 Tair max % 15 Tair min % 16 Tgrap max % 17 Tgrap min %18 Tleaf max %19
Tleaf min % 20 Tsoil1 max
% 21 Tsoil1 min % 22 Tsoil2 max % 23 Tsoil2 min  % 24 Wind max  % 25 Wind
min
                                adesso=datestr(now, 'ddmmyyyy');
                                file_out=[File_save_desp '\' stt
                                '_TUS_S_DY_' hh '_' adesso '.out'];
                                fid3 = fopen(file_out, 'w');
                                fprintf(fid3,'Year JDT Rad Tair Tgrap Tleaf
                                Tsoil1 Tsoil2 T_heatsoil1 T_heatsoil2 VV
                                Bat Bagn_leaf Tair_max Tair_min Tgrap_max
                                Tgrap_min Tleaf_max Tleaf_min Tsoil1_max
                                Tsoil1_min Tsoil2_max Tsoil2_min Wind_max
                                Wind_min\r');
                                in = size(daily);
                                for xx=1:in(1)
                                fprintf(fid3, ...
                                    '%d %c %d %c %f %c %f %c %f %c %f %c %f
                                    %c %f %c %f %c %f %c %f %c %f %c %f %c
                                    %f %c %f %c %f %c %f %c %f %c %f %c %f
                                    %c %f %c %f %c %f %c %f %c %f\r', ...
                                    daily(xx,1), ' ', daily(xx,2), ' ',
                                    daily(xx,3), ' ', daily(xx,4), ' ',
                                    daily(xx,5), ' ', ...
                                    daily(xx,6), ' ', daily(xx,7), ' ',
                                    daily(xx,8), ' ', daily(xx,9), ' ',
                                    daily(xx,10), ' ' ,...
                                    daily(xx,11), ' ', daily(xx,12), ' ',
                                    daily(xx,13), ' ', daily(xx,14), ' ',
                                    daily(xx,15), ' ', daily(xx,16), ' ',
                                    daily(xx,17), ' ', daily(xx,18), ' ',
                                    daily(xx,19), ' ', daily(xx,20), ' ',
                                    daily(xx,21), ' ', daily(xx,22), ' ',
                                    daily(xx,23), ' ', daily(xx,24), ' ',
                                    daily(xx,25));
                                end
                                fclose(fid3);
                             end


%           %%%%%%%%%%%%%%  DESPIKING GIORNALIERO  %%%%%%%%%%%%%%%
%
%           gi=daily(1,2);
%           gf=daily(end,2);
%           mast = find(Master_dy(:,2)<=gf & Master_dy(:,2)>=gi);
%           Mair=Master_dy(mast,3);
%
```

```
%
%        %METTERE IL NAN ANCHE ALLE MASSIME E MINIME
%
%           rif = abs(daily(:,4)-Mair);
%           indd2 = find(rif>5);
%           daily(indd2,4)=NaN;
%           rif = abs(daily(:,5)-Mair);
%           indd2 = find(rif>5);
%           daily(indd2,5)=NaN;
%           rif = abs(daily(:,6)-Mair);
%           indd2 = find(rif>10);
%           daily(indd2,6)=NaN;
%
%           Tasterisco30=(3.15-daily(:,9))/(3.15-0.75);
%           T_heatsoil1=-0.056*(Tasterisco30.^(-1/0.45)-1);
%           Tasterisco60=(3.15-daily(:,10))/(3.15-0.75);
%           T heatsoil2=-0.056*(Tasterisco60.^(-1/0.45)-1);
%           ind30=find(T_heatsoil1<-1.75);
%           ind60=find(T_heatsoil2<-1.75);
%           daily(ind30,9)=2.65;
%           daily(ind60,10)=2.65;
%
%             if safety == 1
%             adesso=datestr(now, 'ddmmyyyy');
%             file_out=[File_save_desp '\' stt '_TUS_S_DY_' hh '_despike_'
adesso '.out'];
%             fid3 = fopen(file_out, 'w');
%             fprintf(fid3,'Year JDT Rad Tair Tgrap Tleaf Tsoil1 Tsoil2
T_heatsoil1 T_heatsoil2 VV Bat Bagn_leaf Tair_max Tair_min Tgrap_max
Tgrap_min Tleaf_max Tleaf_min Tsoil1_max Tsoil1_min Tsoil2_max Tsoil2_min
Wind_max Wind_min\r');
%             in = size(daily);
%             for xx=1:in(1)
%                 fprintf(fid3, ...
%                     '%d %c %d %c %f %c %f %c %f %c %f %c %f %c %f %c %f
%c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
%f %c %f %c %f %c %f\r', ...
%                     daily(xx,1), ' ', daily(xx,2), ' ', daily(xx,3), ' ',
daily(xx,4), ' ', daily(xx,5), ' ', ...
%                     daily(xx,6), ' ', daily(xx,7), ' ', daily(xx,8), ' ',
daily(xx,9), ' ', daily(xx,10), ' ' ,...
%                     daily(xx,11), ' ', daily(xx,12), ' ', daily(xx,13), '
', daily(xx,14), ' ', daily(xx,15), ' ', daily(xx,16), ' ', daily(xx,17), '
', daily(xx,18), ' ', daily(xx,19), ' ', daily(xx,20), ' ', daily(xx,21), '
', daily(xx,22), ' ', daily(xx,23), ' ', daily(xx,24), ' ', daily(xx,25));
%             end
%             fclose(fid3);
%             end
          %%%%%%%%%%%%%%  DESPIKING giornaliero fine %%%%%%%%%%%%%%%

                        daily=[];
                        alle=length(hourly);
                        hourly=[];

      disp('          ok         ')
      end
    end
          disp('          ok ok         ')

          end
```

```
clear all;
close all;
clc;

disp('         CI SONO I COEFFICIENTI CALIBRAZIONE le soglie e anche media
mobile      ')

st=input('ID station (LOC=Master;S=Slave): ','s');
stt=input('Vigna (BR=Brolio;MA=Mortelle alta Cacciagrande;MB=Mortelle bassa
Cortigliano;DO=Donna Olimpia): ','s');
styear=input('Anno: ');
safety=input('Vuoi salvare il file output ? Si(1) No(2); ');
File_save='C:\TUSCANIA\DATI_2010\Scheduler\OUTPUT_ORARI_DESPIKING';
File_save_desp='C:\TUSCANIA\DATI_2010\Scheduler\OUTPUT_GIORNALIERI_DESPIKIN
G';
%File_path_master='C:\TUSCANIA\DATI_2009\Scheduler\Master';


%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%CALIBRAZIONI
2010%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

if stt == 'BR'
    File_path='C:\TUSCANIA\DATI_2010\Scheduler\Brolio\OUTPUT';
    File_path_loc='C:\TUSCANIA\DATI_2010\Scheduler\Brolio\OUTPUT';
    slavenumb=[65 66 67 68 69 70 71 72 73 76 77 78];
        span_air=[1.0188        0.9942  1.0091  1.0004  1.0225  0.9317
        1.011   1.0208  0.9662  1.0142  1.0082 1];
        offset_air=[-0.8384     -0.9244 0.1344  0.2262  0.6878  0.4141
        0.6059  0.0152  0.5053  -0.7781 0.0379 0];
        span_grape=[1.0079      1.0204  1.003   0.9799  1.0057  1.0054
        0.9953  0.9991  1   1.0202  1.0095  1];
        offset_grape=[-0.9532   -1.2992 0.0801  0.1633  0.748   -0.4873
        0.7672  -0.8051 0       -1.3212 -0.5879 0];
        span_leaf=[1    1       1       1       1       1       1       1
        1       1       1 1];
        offset_leaf=[0  0       0       0       0       0       0       0
        0       0       0 0];
        offset_rad=[-13.1       5.2     8.1     -5.6    -13.4   9.3
        -2.0    12.6    -6.6    -1.3    -5.6 0];

%         span_grape2=[1        1       1       1       0.9479  0.9164
0.9586  0.923   0.5545  0.9891  1];
%         offset_grape2=[0      0       0       0       0.6468  0.947
0.6883  0.2833  17.756  0.3975  0];
%         span_grape3=[1        1       1       1       0.9419  0.9479
0.9718  0.9538  1.0063  0.9966  0.9664  1];
%         offset_grape3=[0    0 0       0       1.2228  0.6468  0.785
0.0037  0.4635  -0.5021 0];

        doy cal=6000;
        doy_rad=6000;
        doy_cal2=6000;
        doy_delta=6000;

    %slavenumb=char('A','B','C','D','E','F','G','H','I','L','M');
elseif stt == 'DO'
    File path='C:\TUSCANIA\DATI 2010\Scheduler\Donna Olimpia\OUTPUT';
    File path loc='C:\TUSCANIA\DATI_2010\Scheduler\Donna_Olimpia\OUTPUT';
    slavenumb=[65 66 67 68 69 70 71 72 73 76];
        span_air=[0.99  0.9585  0.9829  0.9743  1.0262  1.0091  1.0105
        1.0116  1.0067  1.0122];
        offset_air=[0.1699      0.1919  1.1405  1.677   0.3749  -0.9814
        -0.3057 -1.1616 -0.1615 -0.6744];
        span_grape=[0.9987      0.9685  1.0146  0.9892  1       1.1609
        1.0123  0.979   1.0087  0.9654];
        offset grape=[0.1038    -0.1121 0.8983  0.4551  0       -2.9836
        -0.1987 -0.5475 -0.0768 1.4403];
        span_leaf=[1    1       1       1       1       1       1       1
        1       1];
        offset_leaf=[0  0       0       0       0       0       0       0
        0       0];
        offset_rad=[19.1        14.7    14.7    14.7    10.2    -4.3
        -17.9   -5.2    -2.8    -13.7];
```

```
%         span_grape2=[1        0.9894  0.9373  1   0.8827      1   0.9935
0.9619  1       1];
%         offset_grape2=[0      0.3922  0.6034  0   2.8871      0   -0.2301
0.6141  0       0];
%         span_grape3=[1  0.9971        0.9595  1       0.891   1   1.0009
0.9414  1   1];
%         offset_grape3=[0    -0.5111   0.5734  0       1.4996  0
-0.1732 1.3277  0   0];

        doy_cal=6000;
        doy_rad=6000;
        doy_cal2=6000;
        doy_delta=6000;
    %slavenumb=char('A','B','C','D','E','F','G','H','I','L');
elseif stt == 'MB'
    File_path='C:\TUSCANIA\DATI_2010\Scheduler\Mortelle\OUTPUT';
    File_path_loc='C:\TUSCANIA\DATI_2010\Scheduler\Mortelle_Bassa\OUTPUT';
    slavenumb=[65 66 67 68 69 70 71 72 73 76];
        span_air=[1.0044        1.0043  1.002   1.1139  0.9987  1.0048
        0.9812  0.9993  0.952   1.0006];
        offset_air=[-0.5906     0.4623  -0.4945 -10.123 -0.0766 -0.147
        -25.632 -0.6601 4.665   0.1833];
        span_grape=[1.0169      0.9938  0.9976  0.9957  1.0861  1.0075
        1.0095  0.9941  1.0485  0.9953];
        offset_grape=[-0.7412   0.4298  -0.3232 -0.3357 -13.036 -0.93
        -0.0173 -1.0343 -10.462 -0.1521];
        span_leaf=[1    1       1       1       1       1       1       1
        1       1];
        offset_leaf=[0  0       0       0       0       0       0       0
        0       0];
        offset_rad=[-20.0       7.3     -18.5   9.6     11.5    -9.7    0.0
        19.7    2.0     3.0];

%         span_grape2=[1        1.0767  1.0134  1       1       0.7785
0.8568  1       1       1];
%         offset_grape2=[0      0.0343  -1.1855 0       0       3.0006
6.2336  0       0       0];
%         span_grape3=[1        0.9537  1.4806  1       1       0.7903
0.9374  1       1       1];
%         offset_grape3=[0      0.9909  -6.472  0       0       2.3206
1.5795  0       0       0];
        doy_cal=6000;
        doy_rad=6000;
        doy_cal2=6000;
        doy_delta=6000;
    %slavenumb=char('A','B','C','D','E','F','G','H','I','L');
elseif stt == 'MA'
    File_path='C:\TUSCANIA\DATI_2010\Scheduler\Mortelle\OUTPUT';
    File_path_loc='C:\TUSCANIA\DATI_2010\Scheduler\Mortelle_Alta\OUTPUT';
    slavenumb=[77 78 79 80 81 82 83 84 85 86];
        span_air=[0.9942        1.0048  0.9954  1       0.9949  0.9974
        0.9873  1.0001  1.0007  1.0029];
        offset_air=[0.4249      0.1023  -0.3013 0       1.0266  0.3551
        -0.1147 0.2877  -0.0536 -0.3098];
        span_grape=[1.0018      1.0104  1.0101  0.9996  0.9989  1.0021
        0.9878  1.0104  0.992   1];
        offset_grape=[0.3671    0.0218  -0.3623 -0.125  0.894   -0.2703
        -0.3561 -2.1315 -0.4066 0];
        span_leaf=[1    1       1       1       1       1       1       1
        1       1];
        offset_leaf=[0  0       0       0       0       0       0       0
        0       0];
        offset_rad=[-13.7       12.9    7.7     16.6    -16.3   9.6     0.0
        -10.4   9.6     -17.4];

%         span_grape2=[1  1   0.8662    1       1       1.1     0.9969  1
1       0.9919];
%         offset_grape2=[0    0   2.6229        0       0       -0.7983
-0.4557 0       0       -0.1082];
%         span_grape3=[1  1   0.9581    1       1       0.9921  1.0114  1
1       1.0238];
%         offset_grape3=[0    0   0.8046        0       0       -0.0535
```

```
-0.105  0       0       -0.5867];

        doy_cal=6000;
        doy_rad=6000;
        doy_cal2=6000;
        doy_delta=6000;
        %slavenumb=char('M','N','O','P','Q','R','S','T','U','V');
end

%%%%%
if st=='LOC'
  File_wrk=[File_path_loc '\' st '.dat'];
        N=dload(File_wrk);
    % MASTER
% year  doyM    Tempmedia       Tmax    Tmin    Tdevstd Tultimo Umidmedia
URmax   URmin   URdevstd        URultimo        Presmedia
% 1       2       3       4     5       6       7       8       9     10
11      12              13
% Pmax  Pmin    Pdevstd Pultimo RadGmedia       Rmax    Rmin    Rdevstd
Rultimo Piogsomma       VVent1Vmed      Vdevstd Vraf
% 14    15      16      17      18      19      20      21      22      23
24              25      26
% Vmin  Vultimo DVent1Dprev     Draf    Dultimo numcamp Batteria
% 27      28            29        30      31      32            33
        %step 1 ordina ed elimina doppie
        [Y,I]=sort(N.doyM(:,1));
        datatemp=[N.year(I,1) N.doyM(I,1) N.Tempmedia(I,1) N.Tmax(I,1)
        N.Tmin(I,1) N.Tdevstd(I,1) N.Tultimo(I,1) N.Umidmedia(I,1)
        N.URmax(I,1) N.URmin(I,1) N.URdevstd(I,1) N.URultimo(I,1)
        N.Presmedia(I,1) N.Pmax(I,1) N.Pmin(I,1) N.Pdevstd(I,1)
        N.Pultimo(I,1) N.RadGmedia(I,1) N.Rmax(I,1) N.Rmin(I,1)
        N.Rdevstd(I,1) N.Rultimo(I,1) N.Piogsomma(I,1) N.VVent1Vmed(I,1)
        N.Vdevstd(I,1) N.Vraf(I,1) N.Vmin(I,1) N.Vultimo(I,1)
        N.DVent1Dprev(I,1) N.Draf(I,1) N.Dultimo(I,1) N.numcamp(I,1)
        N.Batteria(I,1)];
        [I,J]=unique(datatemp(:,2));
        data=[datatemp(J,1) datatemp(J,2) datatemp(J,3) datatemp(J,4)
        datatemp(J,5) datatemp(J,6) datatemp(J,7) datatemp(J,8)
        datatemp(J,9) datatemp(J,10) datatemp(J,11) datatemp(J,12)
        datatemp(J,13) datatemp(J,14) datatemp(J,15) datatemp(J,16)
        datatemp(J,17) datatemp(J,18) datatemp(J,19) datatemp(J,20)
        datatemp(J,21) datatemp(J,22) datatemp(J,23) datatemp(J,24)
        datatemp(J,25) datatemp(J,26) datatemp(J,27) datatemp(J,28)
        datatemp(J,29) datatemp(J,30) datatemp(J,31) datatemp(J,32)
        datatemp(J,33)];
        F = data(:,:);
        F(F==-999) = NaN;
        data(:,:)=F;



       % elaborazioni giornaliere
        appog=data(1,2);
        app2=num2str(data(1,2));
        data(1,2)=1111111;
        prova=num2str(data(:,2));
        D=str2num(prova(:,1:3));
        D(1)=appog;
        doyi=D(2);
        doyf=D(end);
        %elaborazioni orarie
        prova2=num2str(data(:,2));%
        D2=str2num(prova2(:,4:7));%
        %D2(1)=str2num(app2(:,4:7));
        D2=D2/100;%
        D3=fix((D2+0.1)*24/100) ; %
        D3(1)=D3(2);
        ii=1;
        i2=1;%
        data(1,2)=appog;

        for i=doyi:doyf
          ijj = find(D==i);
```

```
        if size(ijj,1)>1
         daily(ii,:) = nanmean(data(ijj,:)); % per le medie giornaliere
         daily(ii,2)=i;
         daily(ii,23)= nansum(data(ijj,23));  % cumulate giornaliere
         precipitazione mm
         daily(ii,4)= nanmax(data(ijj,4));
         daily(ii,5)= nanmin(data(ijj,5));
         daily(ii,9)= nanmax(data(ijj,9));
         daily(ii,10)= nanmin(data(ijj,10));
         daily(ii,19)= nanmax(data(ijj,19));
         daily(ii,20)= nanmin(data(ijj,20));

             if styear>2007
               daily(ii,24)= nansum(data(ijj,24)*300/1000);  % vento
               sfilato km giorno rilev 5 min
               daily(ii,18)= nansum(data(ijj,18)*300/1000000);  % cumulate
               radiazione Mj /m2
             else
               if (stt=='DO' & i>=222 | stt=='BR' & i>=194 | stt=='MB' &
               i>=261 | stt=='MA' & i>=261)
               daily(ii,24)= nansum(data(ijj,24)*300/1000);  % vento
               sfilato km giorno rilev 5 min
               daily(ii,18)= nansum(data(ijj,18)*300/1000000);  % cumulate
               radiazione Mj /m2
               else
               daily(ii,24)= nansum(data(ijj,24)*900/1000);  % vento
               sfilato km giorno rilev 15 min
               daily(ii,18)= nansum(data(ijj,18)*900/1000000);  % cumulate
               radiazione Mj /m2
               end
             end
         ii=ii+1;
         else
         daily(ii,:) = NaN;
         daily(ii,2)=i;
         ii=ii+1;
        end

        %elaboration oraria
```

```
        %elaborazione oraria
                          if size(ijj,1)>1
                            zz1=ijj(1);
                            for iii=D3(ijj(1)):D3(ijj(end))
                              ij2=find(D3(ijj)==iii);
                              if size(ij2,1)>1
                                zz=zz1+length(ij2);
                                azz=data(zz1:(zz-1),:);
                                zz1=zz;
                                hourly(i2,:)=nanmean(azz(:,:));
                                hourly(i2,2)=i+double(iii*100/24)/100;
                                hhour(i2,1)=i;
                                hhour(i2,2)=iii;
                                   hourly(i2,23)= nansum(azz(:,23));  %
                                   cumulate giornaliere precipitazione mm
                                   hourly(i2,4)= nanmax(azz(:,4));
                                   hourly(i2,5)= nanmin(azz(:,5));
                                   hourly(i2,9)= nanmax(azz(:,9));
                                   hourly(i2,10)= nanmin(azz(:,10));
                                   hourly(i2,19)= nanmax(azz(:,19));
                                   hourly(i2,20)= nanmin(azz(:,20));

                                if iii==24
                                  hourly(i2,2)=i;
                                end
                                i2=i2+1;
                              else
                                hourly(i2,:) = NaN;
                                hourly(i2,2)=i+double(iii*100/24)/100;
                                i2=i2+1;
                              end
                            end
                          else
                            hourly(i2,:) = NaN;
                            hourly(i2,2)=i+double(iii*100/24)/100;
```

```
                            i2=i2+1;
                          end
                          %fine elab oraria
        end

                %inserisci giorni mancanti
        hourly(:,2)=hourly(:,2)*100;
                           startday=fix(hourly(1,2)/100);
                           endday=fix(hourly(end,2)/100);
                           ndays=endday-startday+1;
                           ncol=33;
                           A=NaN*ones(ndays*24,ncol);
                           A(:,1)=styear;
                           for i=0:ndays-1
                              for j=0:23
                                A(i*24+j+1,2)=
                                str2num([num2str(startday+i,'%.3d')
                                num2str(j,'%.2d')]);
                              end
                           end

                              newdoy1=hourly(:,2)/100-fix(hourly(:,2)
                              /100);
                              newdoy2=int16(newdoy1*24);
                              appdoy=hourly(:,2);
                              hourly(:,2)=str2num([num2str(fix(hourly(:,2)
                              /100),'%.3d') num2str(newdoy2,'%.2d')]);;
                              B=hourly(:,:);

                            for i=1:size(A,1)
                              index=find(B(:,2)==A(i,2));
                              if length(index)>=1
                                A(i,:)=B(index(1),:);
                              end
                            end
    hourly=A;
%         % salvataggio file .mat
% %         eval(['M_' stt '_RT = data(:,:);']);
%          eval(['M_' stt '_DY = daily(:,:);']);
%          eval(['M_' stt '_HY = hourly(:,:);']);
% %         %eval(['M ' stt '_HY(:,2) = M_' stt '_HY(:,2)*100;']);
%          fname=['M_' stt];
%          eval(['save C:\TUSCANIA\DATI\Scheduler\Master\' fname ' M_*;']);


          % salvataggio files REAL TIME MASTER

    if safety == 1
%       adesso=datestr(now, 'ddmmyyyy');
%       file out=[File path '\' stt ' M_' adesso '.out'];
%         fid1 = fopen(file_out, 'w');
%         fprintf(fid1,'data ora Tempmedia Tmax Tmin Tdevstd Tultimo
Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd Pultimo
RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed Vdevstd Vraf Vmin
Vultimo DVent1Dprev Draf Dultimo numcamp Batteria\r');
%         in = size(data);
%         for xx=1:in(1)
%          annoj=data(xx,1);
%          jd=D(xx,1);
%          jd1=double(yearday(annoj,jd));
%          jd2=(data(xx,2)/10000)-(D(xx,1));
%          jd3=double(jd1+jd2+0.0001);
%          stringadoy=datestr(jd3,'dd/mm/yyyy HH:MM');
%         fprintf(fid1, ...
%         '%s %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f
%c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
%f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r', ...
%        stringadoy, ' ',  data(xx,3), ' ', data(xx,4), ' ', data(xx,5), '
', ...
%        data(xx,6), ' ', data(xx,7), ' ', data(xx,8), ' ', data(xx,9), '
', data(xx,10), ' ' ,...
%        data(xx,11), ' ', data(xx,12), ' ', data(xx,13), ' ',
data(xx,14), ' ', data(xx,15), ' ' ,...
```

```
%         data(xx,16), ' ', data(xx,17), ' ', data(xx,18), ' ',
data(xx,19), ' ', data(xx,20), ' ' ,...
%         data(xx,21), ' ', data(xx,22), ' ', data(xx,23), ' ',
data(xx,24), ' ', data(xx,25), ' ' ,...
%         data(xx,26), ' ', data(xx,27), ' ', data(xx,28), ' ',
data(xx,29), ' ', data(xx,30), ' ' ,...
%         data(xx,31), ' ', data(xx,32), ' ', data(xx,33));
%         %year doyM Tempmedia Tmax Tmin Tdevstd Tultimo Umidmedia URmax
URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd Pultimo RadGmedia Rmax
Rmin Rdevstd Rultimo Piogsomma VVent1Vmed Vdevstd Vraf Vmin Vultimo
DVent1Dprev Draf Dultimo numcamp Batteria
%         %2007 2424687 28.0 28.0 28.0 0.008 28.0 62 63 60 1.23 60 1015
1015 1015 0.00 1015 664 689 638 25.28 689 0.0 5.64 5.6371 11.27 0.00 11.27
99 99 99 2 13564
%         %2007 2393645 25.61 26.04 25.21 -999 -999 57.25 61.12 53.51 -999
-999 1024.34 1024.82 -999 -999 -999 455.04 469.35 -999 -999 -999 0 0.81
-999 1.13 -999 -999 158 135 -999 -999 -999
%         end
%         fclose(fid1);

   %salvataggio file orario
        adesso=datestr(now, 'ddmmyyyy');
        file_out=[File_save '\' stt '_TUS_M_HY_0_' adesso '.out'];
        fid2 = fopen(file_out, 'w');
        fprintf(fid2,'Year JDT Tempmedia Tmax Tmin Tdevstd Tultimo
        Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd
        Pultimo RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed
        Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo numcamp
        Batteria\r');
        in = size(hourly);
        for xx=1:in(1)
        fprintf(fid2, ...
        '%d %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r',
        ...
        hourly(xx,1), ' ',hourly(xx,2), ' ', hourly(xx,3), ' ',
        hourly(xx,4), ' ', hourly(xx,5), ' ', ...
        hourly(xx,6), ' ', hourly(xx,7), ' ', hourly(xx,8), ' ',
        hourly(xx,9), ' ', hourly(xx,10), ' ' ,...
        hourly(xx,11), ' ', hourly(xx,12), ' ', hourly(xx,13), ' ',
        hourly(xx,14), ' ', hourly(xx,15), ' ' ,...
        hourly(xx,16), ' ', hourly(xx,17), ' ', hourly(xx,18), ' ',
        hourly(xx,19), ' ', hourly(xx,20), ' ' ,...
        hourly(xx,21), ' ', hourly(xx,22), ' ', hourly(xx,23), ' ',
        hourly(xx,24), ' ', hourly(xx,25), ' ' ,...
        hourly(xx,26), ' ', hourly(xx,27), ' ', hourly(xx,28), ' ',
        hourly(xx,29), ' ', hourly(xx,30), ' ' ,...
        hourly(xx,31), ' ', hourly(xx,32), ' ', hourly(xx,33));
        end
        fclose(fid2);


        %salvataggio file giornaliero despiking
        adesso=datestr(now, 'ddmmyyyy');
        file_out=[File_save_desp '\' stt '_TUS_M_DY_0_' adesso '.out'];
        fid2 = fopen(file_out, 'w');
        fprintf(fid2,'Year JDT Tempmedia Tmax Tmin Tdevstd Tultimo
        Umidmedia URmax URmin URdevstd URultimo Presmedia Pmax Pmin Pdevstd
        Pultimo RadGmedia Rmax Rmin Rdevstd Rultimo Piogsomma VVent1Vmed
        Vdevstd Vraf Vmin Vultimo DVent1Dprev Draf Dultimo numcamp
        Batteria\r');
        in = size(daily);
        for xx=1:in(1)
        fprintf(fid2, ...
        '%d %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c
        %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f %c %f\r',
        ...
        daily(xx,1), ' ',daily(xx,2), ' ', daily(xx,3), ' ', daily(xx,4), '
        ', daily(xx,5), ' ', ...
        daily(xx,6), ' ', daily(xx,7), ' ', daily(xx,8), ' ', daily(xx,9),
        ' ', daily(xx,10), ' ' ,...
```

```
        daily(xx,11), ' ', daily(xx,12), ' ', daily(xx,13), ' ',
        daily(xx,14), ' ', daily(xx,15), ' ' ,...
        daily(xx,16), ' ', daily(xx,17), ' ', daily(xx,18), ' ',
        daily(xx,19), ' ', daily(xx,20), ' ' ,...
        daily(xx,21), ' ', daily(xx,22), ' ', daily(xx,23), ' ',
        daily(xx,24), ' ', daily(xx,25), ' ' ,...
        daily(xx,26), ' ', daily(xx,27), ' ', daily(xx,28), ' ',
        daily(xx,29), ' ', daily(xx,30), ' ' ,...
        daily(xx,31), ' ', daily(xx,32), ' ', daily(xx,33));
        end
        fclose(fid2);


     end



else
    s1=1;%inizializzo indici vettori calibrazione
    f1=1;
    for hh=slavenumb(1):slavenumb(end)
      if (hh==74 | hh==75)
          pippo='N';
      else
         File wrk=[File path '\' hh '.dat'];
         M=dload(File_wrk);
%          File_master=[File_path_master '\M_' stt '.mat'];
%          load(File_master);
%          eval(['Master_hy=M_' stt '_HY;'])
%          eval(['Master_dy=M_' stt '_DY;'])

% SLAVE
% year  DOY_hh  rad     Tair    Tgrap   Tleaf   Tsoil1  Tsoil2  T_heatsoil1
T_heatsoil2     VV      Bat     Bagn_leaf
% 1        2       3       4       5       6       7       8               9
10      11  12          13
            %step 1 ordina ed elimina doppie
            [Y,I]=sort(M.DOY_hh(:,1));
            datatemp=[M.Year(I,1) M.DOY_hh(I,1) M.Tcjc(I,1) M.Tair(I,1)
            M.Tgrap(I,1) M.Tleaf(I,1) M.Tsoil1(I,1) M.Tsoil2(I,1)
            M.T heatsoil1(I,1) M.T_heatsoil2(I,1) M.VV(I,1) M.Bat(I,1)
            M.Bagn_leaf(I,1)];
            [I,J]=unique(datatemp(:,2));
            data=[datatemp(J,1) datatemp(J,2) datatemp(J,3) datatemp(J,4)
            datatemp(J,5) datatemp(J,6) datatemp(J,7) datatemp(J,8)
            datatemp(J,9) datatemp(J,10) datatemp(J,11) datatemp(J,12)
            datatemp(J,13)];
            F = data(:,:);
            F(F==-999) = NaN;
            data(:,:)=F;

            wind=data(:,11);
            wind(wind==0.2)=0;
            data(:,11)=wind;

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%%%
            %applico i coefficienti di calibrazione per le slave
            data(data(:,2)>=doy_cal,4)=(data(data(:,2)>=doy_cal,4)
            *span_air(s1))+offset_air(f1);
            data(data(:,2)>=doy_cal,5)=(data(data(:,2)>=doy_cal,5)
            *span_grape(s1))+offset_grape(f1);
            data(data(:,2)>=doy_cal,6)=(data(data(:,2)>=doy_cal,6)
            *span_leaf(s1))+offset_leaf(f1);
%             data(data(:,2)>=doy cal,7)=(data(data(:,2)>=doy_cal,7)
*span_grape2(s1))+offset grape2(f1);
%             data(data(:,2)>=doy_cal,8)=(data(data(:,2)>=doy_cal,8)
*span_grape3(s1))+offset_grape3(f1);
%
%
            %sensori radiazione grappolo
            data(data(:,2)<doy_rad,3)=NaN;
            %coefficienti calibrazione radiazione grappolo
```

```
            data(data(:,2)>=doy_rad,3)=data(data(:,2)>=doy_rad,3)
            +offset_rad(f1);
            %elimino i negativi
            apprad=data(:,3);
            apprad(apprad<=25)=0;
            data(:,3)=apprad;
            s1=s1+1;
            f1=f1+1;
%             %conversione T heatsoil da temperatura a delta T
%             data(data(:,2)<=doy_delta,9)=(data(data(:,2)<=
doy_delta,9))-(data(data(:,2)<=doy_delta,7));
%             data(data(:,2)<=doy_delta,10)=(data(data(:,2)<=
doy_delta,10))-(data(data(:,2)<=doy_delta,8));
%
            %inserimento soglie deltaT per il potenziale idrico
            %considerare solo valori di delta tra 0.01<x<2.75
            pot30=data(:,9);
            pot30(pot30>=2.75)=2.75;
            pot30(pot30<=0.01)=0.01;

            pot60=data(:,10);
            pot60(pot60>=2.75)=2.75;
            pot60(pot60<=0.01)=0.01;
%
%             %RANGE DI POTENZIALE IDRICO
%             Tasterisco30=(3.15-pot30)/(3.15-0.75);
%             pot30=-0.056*(Tasterisco30.^(-1/0.45)-1);
%             Tasterisco60=(3.15-pot60)/(3.15-0.75);
%             pot60=-0.056*(Tasterisco60.^(-1/0.45)-1);
%             %da Mpa a pF (scala 1-7)  %-LOG10(1/ASS(E12*10000))   %-
log10(1/abs(-2.95*10000))
% %             pf_i_30=abs(pot30*10000);
% %             pf_i_60=abs(pot60*10000);
% %             pf30=-log10(1./pf_i_30);
% %             pf60=-log10(1./pf_i_60);
% %             rh30=-22.392*log(pf30-1)+42.554; curva ritenzione media
campioni donna olimpia
% %             rh60=-22.392*log(pf60-1)+42.554;
% %             %data(:,9)=rh30;
% %             %data(:,10)=rh60;
%              %%%%%%%%%
             data(:,9)=pot30;
             data(:,10)=pot60;
%
            %inserimento soglie temperatura aria e grappolo
            s_air=data(:,4);
            s_air(s_air>=50 | s_air<=-20)=NaN;
            data(:,4)=s_air;
            s_grape=data(:,5);
            s_grape(s_grape>=50 | s_grape<=-20)=NaN;
            data(:,5)=s_grape;
            s_leaf=data(:,6);
            s_leaf(s_leaf>=60 | s_leaf<=-20)=NaN;
            data(:,6)=s_leaf;
%
%
%             %despiking manuale ESEGUITO GUARDANDO I DATI GIORNALIERI
%
                %filtro a 12 ore potenziale idrico
                aaa=1;
                bb12 = [1/12 1/12 1/12 1/12 1/12 1/12 1/12 1/12 1/12 1/12
                1/12 1/12];
                yy12_30 = filter(bb12,aaa,data(:,9));
                yy12_60 = filter(bb12,aaa,data(:,10));
                data(:,9)=yy12_30;
                data(:,10)=yy12_60;
%
        if stt == 'BR'
                if hh==slavenumb(5) | hh==slavenumb(6)| hh==slavenumb(7)|
                hh==slavenumb(8)| hh==slavenumb(9)| hh==slavenumb(10)
                %tolgo pot idr
                data(data(:,2)>100,7:10)=NaN;
                end
```

```
                if hh==slavenumb(5) | hh==slavenumb(7)| hh==slavenumb(9)|
                hh==slavenumb(11)%tolgo wind
                data(data(:,2)>100,11)=NaN;
                end

                if hh==slavenumb(1)%tair A tolgo gobba mattutina
                    orenull=num2str(data(:,2));%
                    nuoveore=str2num(orenull(:,4:5));%
                    nnore=find(nuoveore<50 & nuoveore>19);
                    data(nnore,4) = NaN;
                end
                if hh==slavenumb(3)%tair C
                data((data(:,2)>=25700 & data(:,2)<=25799),4)=NaN;
                end
                if hh==slavenumb(3)%tair C
                data((data(:,2)>=27800 & data(:,2)<=27899),4)=NaN;
                end
                if hh==slavenumb(1)%tgrape A
                data((data(:,2)>=22500 & data(:,2)<=22799),5)=NaN;
                end
                if hh==slavenumb(1)%tgrape A
                data((data(:,2)>=25700 & data(:,2)<=25799),5)=NaN;
                end
                if hh==slavenumb(1)%tgrape A
                data((data(:,2)>=26200 & data(:,2)<=26299),5)=NaN;
                end
                if hh==slavenumb(4)%tgrape D
                data((data(:,2)>=26200 & data(:,2)<=26299),5)=NaN;
                end
                if hh==slavenumb(4)%tgrape D
                data((data(:,2)>=27100 & data(:,2)<=27199),5)=NaN;
                end
                if hh==slavenumb(4)%tgrape D
                data((data(:,2)>=19300 & data(:,2)<=19599),5)=NaN;
                end
                if hh==slavenumb(3)%tgrape C tolgo gobba mattutina
                    orenull=num2str(data(:,2));%
                    nuoveore=str2num(orenull(:,4:5));%
                    nnore=find(nuoveore<40 & nuoveore>19);
                    data(nnore,5) = NaN;
                end
                 if hh==slavenumb(6)%tgrape F tolgo gobba mattutina
                    orenull=num2str(data(:,2));%
                    nuoveore=str2num(orenull(:,4:5));%
                    nnore=find(nuoveore<40 & nuoveore>19);
                    data(nnore,5) = NaN;
                 end

        elseif stt == 'DO'
                if hh==slavenumb(2) | hh==slavenumb(3)| hh==slavenumb(5)|
                hh==slavenumb(7)| hh==slavenumb(8) %tolgo pot idr
                data(data(:,2)>100,7:10)=NaN;
                end
                if hh==slavenumb(1) | hh==slavenumb(3)| hh==slavenumb(6)|
                hh==slavenumb(8)%tolgo wind
                data(data(:,2)>100,11)=NaN;
                end

                if hh==slavenumb(5)%tgrape E
                data((data(:,2)>=22300),5)=NaN;
                end
                if hh==slavenumb(10)%tgrape L
                data((data(:,2)<=15800),5)=NaN;
                end
                if hh==slavenumb(10)%tgrape L  troppo alta
                data((data(:,2)>=15800),5)=data((data(:,2)>=15800),5)-83;
                end
                if hh==slavenumb(1)%tgrape A
                data((data(:,2)>=26600),5)=NaN;
                end

                if hh==slavenumb(3)%tgrape C
                data((data(:,2)>=23000 & data(:,2)<=23099),5)=NaN;
```

```
            end
            if hh==slavenumb(6)%tgrape F
            data((data(:,2)>=23000 & data(:,2)<=23099),5)=NaN;
            end
            if hh==slavenumb(7)%tgrape G
            data((data(:,2)>=17300 & data(:,2)<=17399),5)=NaN;
            end


        elseif stt == 'MB'
            if hh==slavenumb(2) | hh==slavenumb(3)| hh==slavenumb(4)|
            hh==slavenumb(6)| hh==slavenumb(7) %tolgo pot idr
            data(data(:,2)>100,7:10)=NaN;
            end
            if hh==slavenumb(2) | hh==slavenumb(4)| hh==slavenumb(6)|
            hh==slavenumb(8)%tolgo wind
            data(data(:,2)>100,11)=NaN;
            end
            if hh==slavenumb(3)%tgrape C
            data((data(:,2)>=100),5)=NaN;
            end
            if hh==slavenumb(5)%tgrape E
            data((data(:,2)>=100),5)=NaN;
            end
            if hh==slavenumb(6)%tgrape F
            data((data(:,2)>=100),5)=NaN;
            end
            if hh==slavenumb(9)%tgrape I
            data((data(:,2)>=100),5)=NaN;
            end

            if hh==slavenumb(1)%tgrape A tolgo le ore notturne
                orenull=num2str(data(:,2));%
                nuoveore=str2num(orenull(:,4:5));%
                nnore=find(nuoveore>72 & nuoveore<49);
                data(nnore,5) = NaN;
            end
            if hh==slavenumb(4)%tgrape D
            data((data(:,2)>=16600 & data(:,2)<=16799),5)=NaN;
            data((data(:,2)>=18700 & data(:,2)<=18899),5)=NaN;
            data((data(:,2)>=19500 & data(:,2)<=19699),5)=NaN;
            data((data(:,2)>=20300 & data(:,2)<=20699),5)=NaN;
            data((data(:,2)>=22500 & data(:,2)<=23399),5)=NaN;
            data((data(:,2)>=23500 & data(:,2)<=23799),5)=NaN;
            data((data(:,2)>=24000),5)=NaN;
            end
            if hh==slavenumb(8)%tgrape H
            data((data(:,2)>=22500 & data(:,2)<=24099),5)=NaN;
            end

            if hh==slavenumb(1)%tair A
            data((data(:,2)>=26900),4)=NaN;
            end
            if hh==slavenumb(4)%tair D
            data((data(:,2)>=100),4)=NaN;
            end
            if hh==slavenumb(7)%tair G
            data((data(:,2)>=100),4)=NaN;
            end
%
        elseif stt == 'MA'
            if hh==slavenumb(3) | hh==slavenumb(5)| hh==slavenumb(6)|
            hh==slavenumb(7)| hh==slavenumb(10) %tolgo pot idr
            data(data(:,2)>100,7:10)=NaN;
            end
            if hh==slavenumb(5) | hh==slavenumb(6)| hh==
            slavenumb(7)%tolgo wind
            data(data(:,2)>100,11)=NaN;
            end
            if hh==slavenumb(9)%tgrape U
            data((data(:,2)>=20000),5)=NaN;
            end
            if hh==slavenumb(4)%tgrape P
```

```
            data((data(:,2)>=26500),5)=NaN;
            end
            if hh==slavenumb(8)%tgrape T tolgo
            data((data(:,2)>=100),5)=NaN;
            end
            if hh==slavenumb(6)%tgrape R
            data((data(:,2)>=26500),5)=NaN;
            end
            if hh==slavenumb(6)%tgrape R
            data((data(:,2)>=21700),5)=data((data(:,2)>=21700),5)-5;
            end
            if hh==slavenumb(8)%rad T tolgo
            data((data(:,2)>=100),3)=NaN;
            end

       end

             disp('         DESPIKE MANUALE INSERITO        ')

         %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%


                          %inserisci giorni mancanti
      hourly=data;
                        startday=fix(hourly(1,2)/100);
                        endday=fix(hourly(end,2)/100);
                        ndays=endday-startday+1;
                        ncol=13;
                        A=NaN*ones(ndays*24,ncol);
                        A(:,1)=styear;
                        for i=0:ndays-1
                           for j=0:23
                             A(i*24+j+1,2)=
                             str2num([num2str(startday+i,'%.3d')
                             num2str(j,'%.2d')]);
                           end
                        end

                           newdoy1=hourly(:,2)/100-fix(hourly(:,2)
                           /100);
                           newdoy2=int16(newdoy1*24);
                           appdoy=hourly(:,2);
                           hourly(:,2)=str2num([num2str(fix(hourly(:,2)
                           /100),'%.3d') num2str(newdoy2,'%.2d')]);;
                           B=hourly(:,:);

                         for i=1:size(A,1)
                           index=find(B(:,2)==A(i,2));
                           if length(index)>=1
                             A(i,:)=B(index(1),:);
                           end
                         end
    hourly=A;


      appog=hourly(1,2);
      hourly(1,2)=11111;

            doyi=int16(hourly(2,2)/100);
            doyf=int16(hourly(end,2)/100);
            prova=num2str(hourly(:,2));
            D=str2num(prova(:,1:3));
            ii=1;
      hourly(1,2)=appog;
      D(1)=D(2);
            for i=doyi:doyf
              ijj = find(D==i);
              if size(ijj,1)>1
                % controllo giorni parziali
                for iii=1:13
                  ina=isnan(hourly(ijj,iii));
                  if sum(ina) >= 7
                    hourly(ijj,iii) = NaN;
```

```
            end
          end
          %%%%%%%%%%%%%%%%
        daily(ii,1:13) = nanmean(hourly(ijj,:)); % per le medie
        giornaliere
        daily(ii,2)=i;
        daily(ii,13)= sum(hourly(ijj,13));  % per le cumulate
        giornaliere es. pioggia
        daily(ii,11)= sum(hourly(ijj,11)*3.6);  % vento sfilato
        daily(ii,3)= nansum(hourly(ijj,3)); %radiazione W m-2
        (integrale giornaliera)
          daily(ii,14)= nanmax(hourly(ijj,4));  %Tair max
          daily(ii,15)= nanmin(hourly(ijj,4));  %Tair min
          daily(ii,16)= nanmax(hourly(ijj,5));  %Tgrap max
          daily(ii,17)= nanmin(hourly(ijj,5));  %Tgrap min
          daily(ii,18)= nanmax(hourly(ijj,6));  %Tleaf max
          daily(ii,19)= nanmin(hourly(ijj,6));  %Tleaf min
          daily(ii,20)= nanmax(hourly(ijj,7));  %Tsoil1 max
          daily(ii,21)= nanmin(hourly(ijj,7));  %Tsoil1 min
          daily(ii,22)= nanmax(hourly(ijj,8));  %Tsoil2 max
          daily(ii,23)= nanmin(hourly(ijj,8));  %Tsoil2 min
          daily(ii,24)= nanmax(hourly(ijj,11));  %Wind max
          daily(ii,25)= nanmin(hourly(ijj,11));  %Wind min

        ii=ii+1;
        else
        daily(ii,:) = NaN;
        daily(ii,2)=i;
        ii=ii+1;
        end
      end

         % salvataggio file .mat per despiking
         %eval(['S_' hh '_' stt '_HY = hourly(:,:);']);

                     if safety == 1
                      %salvataggio file orario  per elaborazioni
                      statistiche tuscania
                      adesso=datestr(now, 'ddmmyyyy');
                      file_out=[File_save '\' stt '_TUS_S_HY_' hh
                      '_' adesso '.out'];
                        fid2 = fopen(file_out, 'w');
                            fprintf(fid2,'Year JDT Rad Tair Tgrap
                            Tleaf Tsoil1 Tsoil2 T_heatsoil1
                            T_heatsoil2 VV Bat Bagn_leaf \r');
                        in = size(hourly);
                        for xx=1:in(1)
                        fprintf(fid2, ...
                            '%d %c %f %c %f %c %f %c %f %c %f %c %f
                            %c %f %c %f %c %f %c %f %c %f %c %f\r',
                            ...
                            hourly(xx,1), ' ', hourly(xx,2), ' ',
                            hourly(xx,3), ' ', hourly(xx,4), ' ',
                            hourly(xx,5), ' ', ...
                            hourly(xx,6), ' ', hourly(xx,7), ' ',
                            hourly(xx,8), ' ', hourly(xx,9), ' ',
                            hourly(xx,10), ' ' ,...
                            hourly(xx,11), ' ', hourly(xx,12), ' ',
                            hourly(xx,13));
                        end
                        fclose(fid2);

                      %salvataggio files giornalieri
% 14 Tair max % 15 Tair min % 16 Tgrap max % 17 Tgrap min %18 Tleaf max %19
Tleaf min % 20 Tsoil1 max
% 21 Tsoil1 min % 22 Tsoil2 max % 23 Tsoil2 min  % 24 Wind max  % 25 Wind
min
                        adesso=datestr(now, 'ddmmyyyy');
                        file_out=[File_save_desp '\' stt
                        '_TUS_S_DY_' hh '_' adesso '.out'];
                        fid3 = fopen(file_out, 'w');
                        fprintf(fid3,'Year JDT Rad Tair Tgrap Tleaf
                        Tsoil1 Tsoil2 T_heatsoil1 T_heatsoil2 VV
```

```
                                        Bat Bagn leaf Tair max Tair min Tgrap max
                                        Tgrap_min Tleaf_max Tleaf_min Tsoil1_max
                                        Tsoil1_min Tsoil2_max Tsoil2_min Wind_max
                                        Wind_min\r');
                                        in = size(daily);
                                        for xx=1:in(1)
                                        fprintf(fid3, ...
                                            '%d %c %d %c %f %c %f %c %f %c %f %c %f
                                            %c %f %c %f %c %f %c %f %c %f %c %f %c
                                            %f %c %f %c %f %c %f %c %f %c %f %c %f
                                            %c %f %c %f %c %f %c %f %c %f\r', ...
                                            daily(xx,1), ' ', daily(xx,2), ' ',
                                            daily(xx,3), ' ', daily(xx,4), ' ',
                                            daily(xx,5), ' ', ...
                                            daily(xx,6), ' ', daily(xx,7), ' ',
                                            daily(xx,8), ' ', daily(xx,9), ' ',
                                            daily(xx,10), ' ' ,...
                                            daily(xx,11), ' ', daily(xx,12), ' ',
                                            daily(xx,13), ' ', daily(xx,14), ' ',
                                            daily(xx,15), ' ', daily(xx,16), ' ',
                                            daily(xx,17), ' ', daily(xx,18), ' ',
                                            daily(xx,19), ' ', daily(xx,20), ' ',
                                            daily(xx,21), ' ', daily(xx,22), ' ',
                                            daily(xx,23), ' ', daily(xx,24), ' ',
                                            daily(xx,25));
                                        end
                                        fclose(fid3);
                                    end


                            daily=[];
                            alle=length(hourly);
                            hourly=[];

        disp('          ok         ')
        end
      end
            disp('          ok ok          ')

            end
```

# Allegati 1.7 – 1.8 – 1.9 – Listati delle procedure matlab di gapfilling dati slave (2008-2009-2010)

```
clear all;
close all;
clc;
File_wrk=['C:\TUSCANIA\DATI\Matrix\Tuscania_dataset_HY_318_2008.dat'];
N=dload(File_wrk);

gi = input('Giorno iniziale (doy es 9200): ');
gf = input('Giorno finale: ');
v=input('Vigneto Brolio(1)-Donna Olimpia(2)-MortelleA Cacciagrande(3)-
MortelleB Cortigliano(4): ');

%fattori di conversione

%potenziale idrico Brolio
Tasterisco30=(3.15-N.T_heatsoil1)/(3.15-0.75);
N.T_heatsoil1=-0.056*(Tasterisco30.^(-1/0.45)-1);
Tasterisco60=(3.15-N.T heatsoil2)/(3.15-0.75);
N.T_heatsoil2=-0.056*(Tasterisco60.^(-1/0.45)-1);

%radiazione da integrale giornaliera w m-2 a MJ m-2
%N.Rad=N.Rad*3600/1000000;

%ANEMOMETRI SLAVE
N.VV=24*N.VV;

if v==1
sname1=['Tair Master vs Tair Slave'];
eval(['figure(''Name'', sname1 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tair';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])
%
sname2=['Tair Master vs Tgrape Slave'];
eval(['figure(''Name'', sname2 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tgrap';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
```

```
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])

sname3=['precipitazioni Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname3 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.Bagn leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])

sname4=['precipitazioni Master vs potenziale idrico 30 cm Slave'];
eval(['figure(''Name'', sname4 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T heatsoil1';
sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])

eval(['plot(N.JDTpc(mast), sss(mast),''r+-'',''LineWidth'',2)'])

eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(m),' s '(m),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''airMaster'',''A'',''B'',''C'',''D'',''M'',-1)'])

sname5=['precipitazioni Master vs potenziale idrico 60 cm Slave'];
eval(['figure(''Name'', sname5 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T heatsoil2';
sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(mast), sss(mast),''r+-'',''LineWidth'',2)'])

eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''airMaster'',''A'',''B'',''C'',''D'',''M'',-1)'])

sname6=['vento Master vs vento Slave'];
eval(['figure(''Name'', sname6 )'])
grid on
hold on
ss='N.VVent1Vmed';
s='N.VV';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''r-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''F'',''H'',''L'',-1)'])

sname7=['radiazione Master vs radiazione Slave'];
eval(['figure(''Name'', sname7 )'])
grid on
hold on
ss='N.RadGmedia';
s='N.Rad';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
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```
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])


sname8=['Tair Master vs Tsoil 30 cm Slave'];
eval(['figure(''Name'', sname8 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''M'',-1)'])

sname9=['Tair Master vs Tsoil 60 cm Slave'];
eval(['figure(''Name'', sname9 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''M'',-1)'])


sname10=['umidità aria Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname10 )'])
grid on
hold on
ss='N.Umidmedia';
s='N.Bagn leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])
figure
plotyy(N.JDTpc(mast),N.Umidmedia(mast),N.JDTpc(m),N.Bagn_leaf(m))

elseif v==2 %donna olimpia

sname1=['Tair Master vs Tair Slave'];
eval(['figure(''Name'', sname1 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tair';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''r-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])
%
sname2=['Tair Master vs Tgrape Slave'];
eval(['figure(''Name'', sname2 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tgrap';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(f),' s '(f),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''r-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])

sname3=['precipitazioni Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname3 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.Bagn_leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''r-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])

sname4=['precipitazioni Master vs potenziale idrico 30 cm Slave'];
eval(['figure(''Name'', sname4 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil1';
sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(mast), sss(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''airMaster'',''A'',''D'',''F'',''I'',''L'',-1)'])

sname5=['precipitazioni Master vs potenziale idrico 60 cm Slave'];
eval(['figure(''Name'', sname5 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil2';
sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
```

```
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(mast), sss(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''airMaster'',''A'',''D'',''F'',''I'',''L'',-1)'])

sname6=['vento Master vs vento Slave'];
eval(['figure(''Name'', sname6 )'])
grid on
hold on
ss='N.VVent1Vmed';
s='N.VV';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''m+-'',''LineWidth'',2)'])

eval(['legend(''Master'',''B'',''D'',''E'',''G'',''I'',''L'',-1)'])

sname7=['radiazione Master vs radiazione Slave'];
eval(['figure(''Name'', sname7 )'])
grid on
hold on
ss='N.RadGmedia';
s='N.Rad';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''r-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])


sname8=['Tair Master vs Tsoil 30 cm Slave'];
eval(['figure(''Name'', sname8 )'])
grid on
hold on
```

```
ss='N.Tempmedia';
s='N.Tsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''D'',''F'',''I'',''L'',-1)'])

sname9=['Tair Master vs Tsoil 60 cm Slave'];
eval(['figure(''Name'', sname9 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''D'',''F'',''I'',''L'',-1)'])


sname10=['tsoil30 vs potenziale idrico 30 cm Slave'];
eval(['figure(''Name'', sname10 )'])
grid on
hold on
ss=N.Tsoil1/100;
s='N.T_heatsoil1';
%sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(a), ss(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d), ss(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f), ss(f),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i), ss(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l), ss(l),''y-.'',''LineWidth'',2)'])

eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''At'',''Dt'',''Ft'',''It'',''Lt'',''Ap'',''Dp'',''Fp'',''Ip'
',''Lp'',-1)'])
elseif v==3 %cacciagrande

sname1=['Tair Master vs Tair Slave'];
eval(['figure(''Name'', sname1 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tair';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
```

```
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''r-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])
%
sname2=['Tair Master vs Tgrape Slave'];
eval(['figure(''Name'', sname2 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tgrap';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''r-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])

sname3=['precipitazioni Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname3 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.Bagn_leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''r-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])

sname4=['precipitazioni Master vs potenziale idrico 30 cm Slave'];
eval(['figure(''Name'', sname4 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''P'',''T'',''U'',-1)'])

sname5=['precipitazioni Master vs potenziale idrico 60 cm Slave'];
eval(['figure(''Name'', sname5 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''P'',''T'',''U'',-1)'])

sname6=['vento Master vs vento Slave'];
eval(['figure(''Name'', sname6 )'])
grid on
hold on
ss='N.VVent1Vmed';
s='N.VV';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(v1),' s '(v1),''r-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''T'',''U'',''V'',-1)'])

sname7=['radiazione Master vs radiazione Slave'];
eval(['figure(''Name'', sname7 )'])
grid on
hold on
ss='N.RadGmedia';
s='N.Rad';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''r-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])


sname8=['Tair Master vs Tsoil 30 cm Slave'];
eval(['figure(''Name'', sname8 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''P'',''T'',''U'',-1)'])

sname9=['Tair Master vs Tsoil 60 cm Slave'];
eval(['figure(''Name'', sname9 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
```

```
eval(['legend(''Master'',''M'',''N'',''P'',''T'',''U'',-1)'])


elseif v==4 %cortigliano

sname1=['Tair Master vs Tair Slave'];
eval(['figure(''Name'', sname1 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tair';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''r-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])
%
sname2=['Tair Master vs Tgrape Slave'];
eval(['figure(''Name'', sname2 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tgrap';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''r-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])

sname3=['precipitazioni Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname3 )'])
```

```
grid on
hold on
ss='N.Piogsomma';
s='N.Bagn_leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''r-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])

sname4=['precipitazioni Master vs potenziale idrico 30 cm Slave'];
eval(['figure(''Name'', sname4 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''E'',''H'',''I'',''L'',-1)'])

sname5=['precipitazioni Master vs potenziale idrico 60 cm Slave'];
eval(['figure(''Name'', sname5 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''E'',''H'',''I'',''L'',-1)'])

sname6=['vento Master vs vento Slave'];
eval(['figure(''Name'', sname6 )'])
grid on
```

```
hold on
ss='N.VVent1Vmed';
s='N.VV';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==3 & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''c+-'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''C'',''E'',''G'',''I'',''L'',-1)'])

sname7=['radiazione Master vs radiazione Slave'];
eval(['figure(''Name'', sname7 )'])
grid on
hold on
ss='N.RadGmedia';
s='N.Rad';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''r-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])


sname8=['Tair Master vs Tsoil 30 cm Slave'];
eval(['figure(''Name'', sname8 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''E'',''H'',''I'',''L'',-1)'])
```

```
sname9=['Tair Master vs Tsoil 60 cm Slave'];
eval(['figure(''Name'', sname9 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''E'',''H'',''I'',''L'',-1)'])







% sname2=['Tesi 5 nei vari blocchi di Brolio (2 parametri) : ' ss sss];
% eval(['figure(''Name'', sname2 )'])
% grid on
% hold on
% mast = find(N.Doy<=gf & N.Doy>=gi & N.Vigna==1 & N.vigoria==0);
% uno = find(N.Doy<=gf & N.Doy>=gi & N.Vigna==1 & N.tesi==5 & N.vigoria==
1);
% quat=find(N.Doy<=gf & N.Doy>=gi & N.Vigna==1 & N.tesi==5 & N.vigoria==4);
% cinq=find(N.Doy<=gf & N.Doy>=gi & N.Vigna==1 & N.tesi==5 & N.vigoria==5);
% sei=find(N.Doy<=gf & N.Doy>=gi & N.Vigna==1 & N.tesi==5 & N.vigoria==6);
% eval(['plot(N.Doy(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
% eval(['plot(N.Doy(uno),' ss '(uno),''b+-'',''LineWidth'',2)'])
% eval(['plot(N.Doy(quat),' ss '(quat),''g+-'',''LineWidth'',2)'])
% eval(['plot(N.Doy(cinq),' ss '(cinq),''m+-'',''LineWidth'',2)'])
% eval(['plot(N.Doy(sei),' ss '(sei),''g-'',''LineWidth'',2)'])
% eval(['plot(N.Doy(mast),' sss '(mast),''r+-'',''LineWidth'',2)'])
% eval(['plot(N.Doy(uno),' sss '(uno),''b+-'',''LineWidth'',2)'])
% eval(['plot(N.Doy(quat),' sss '(quat),''g+-'',''LineWidth'',2)'])
% eval(['plot(N.Doy(cinq),' sss '(cinq),''m+-'',''LineWidth'',2)'])
% eval(['plot(N.Doy(sei),' sss '(sei),''g-'',''LineWidth'',2)'])
% eval(['legend(''Master'',''Alta'',''Media1'',''Media2'',''Bassa'',-1)'])
%

end
```

```
loadde=input('carico il file dat ?? si(1) no(2) ');
if loadde==1
clear all;
close all;
clc;
choice=input('NO despike 2008(1)-CALIBRATI(2)-DESPIKING 2009(3)-DESPIKING 
2008(4): ');
if choice==1
File_wrk=['C:\TUSCANIA\MATRICE_Dati_Tuscania\MATRICI 
2008\5_DATASET_2008_FINALE\Tuscania_dataset_HY_2008_CALIBRATI.dat'];
elseif choice==2
File_wrk=['C:\TUSCANIA\MATRICE_Dati_Tuscania\MATRICI 
2009\Tuscania_dataset_HY_2009_pre_despike.dat'];
elseif choice==3
File_wrk=['C:\TUSCANIA\MATRICE_Dati_Tuscania\MATRICI 
2009\Tuscania_dataset_HY_2009_despike.dat'];
elseif choice==4
File_wrk=['C:\TUSCANIA\MATRICE_Dati_Tuscania\MATRICI 
2008\5_DATASET_2008_FINALE\Tuscania_dataset_HY_2008_index.dat'];
end
N=dload(File_wrk);
end
gi = input('Giorno iniziale (doy es 18200): ');
gf = input('Giorno finale (doy es 25800): ');
styear=input('Anno: ');
v=input('Vigneto Brolio(1)-Donna Olimpia(2)-MortelleA Cacciagrande(3)-
MortelleB Cortigliano(4): ');
delta=((gf-gi)/100)+1;
%fattori di conversione

%potenziale idrico
Tasterisco30=(3.15-N.T_heatsoil1)/(3.15-0.75);
N.T_heatsoil1=-0.056*(Tasterisco30.^(-1/0.45)-1);
Tasterisco60=(3.15-N.T_heatsoil2)/(3.15-0.75);
N.T_heatsoil2=-0.056*(Tasterisco60.^(-1/0.45)-1);

%radiazione da integrale giornaliera w m-2 a MJ m-2
%N.Rad=N.Rad*3600/1000000;

%ANEMOMETRI SLAVE
N.VV=24*N.VV;

if v==1
sname1=['Tair Master vs Tair Slave'];
eval(['figure(''Name'', sname1 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tair';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
```

```
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])
%
sname2=['Tair Master vs Tgrape Slave'];
eval(['figure(''Name'', sname2 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tgrap';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])

sname22=['Tair Master vs Tleaf Slave'];
eval(['figure(''Name'', sname22 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tleaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])


sname3=['precipitazioni Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname3 )'])
grid on
```

```
hold on
ss='N.Piogsomma';
s='N.Bagn_leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])

sname4=['precipitazioni Master vs potenziale idrico 30 cm Slave'];
eval(['figure(''Name'', sname4 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil1';
sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])

eval(['plot(N.JDTpc(mast), sss(mast),''r+-'',''LineWidth'',2)'])

eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''airMaster'',''A'',''B'',''C'',''D'',''M'',-1)'])

sname5=['precipitazioni Master vs potenziale idrico 60 cm Slave'];
eval(['figure(''Name'', sname5 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil2';
sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(mast), sss(mast),''r+-'',''LineWidth'',2)'])

eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''airMaster'',''A'',''B'',''C'',''D'',''M'',-1)'])

sname6=['vento Master vs vento Slave'];
eval(['figure(''Name'', sname6 )'])
grid on
hold on
ss='N.VVent1Vmed';
s='N.VV';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''r-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''F'',''H'',''L'',-1)'])

sname7=['radiazione Master vs radiazione Slave'];
eval(['figure(''Name'', sname7 )'])
grid on
hold on
ss='N.RadGmedia';
s='N.Rad';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])


sname8=['Tair Master vs Tgrape2 Slave'];
eval(['figure(''Name'', sname8 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil1';
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
```

```
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''E'',''F'',''G'',''H'',''I'',''L'',-1)'])

sname9=['Tair Master vs Tgrape3 cm Slave'];
eval(['figure(''Name'', sname9 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil2';
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''E'',''F'',''G'',''H'',''I'',''L'',-1)'])

%pivot solo HV

p_ora=
vertcat(N.ora(d),N.ora(e),N.ora(f),N.ora(g),N.ora(h),N.ora(i),N.ora(l),N.or
a(m));
p_def=
vertcat(N.defogliazione(d),N.defogliazione(e),N.defogliazione(f),N.defoglia
zione(g),N.defogliazione(h),N.defogliazione(i),N.defogliazione(l),N.defogli
azione(m));
p_gem=
vertcat(N.gemme(d),N.gemme(e),N.gemme(f),N.gemme(g),N.gemme(h),N.gemme(i),N
.gemme(l),N.gemme(m));
p_dir=
vertcat(N.diradamento(d),N.diradamento(e),N.diradamento(f),N.diradamento(g)
,N.diradamento(h),N.diradamento(i),N.diradamento(l),N.diradamento(m));
p_grap=
vertcat(N.Tgrap(d),N.Tgrap(e),N.Tgrap(f),N.Tgrap(g),N.Tgrap(h),N.Tgrap(i),N
.Tgrap(l),N.Tgrap(m));
p_air=
vertcat(N.Tair(d),N.Tair(e),N.Tair(f),N.Tair(g),N.Tair(h),N.Tair(i),N.Tair(
l),N.Tair(m));
p_rad=
vertcat(N.Rad(d),N.Rad(e),N.Rad(f),N.Rad(g),N.Rad(h),N.Rad(i),N.Rad(l),N.Ra
d(m));
p_doy=
vertcat(N.Doy(d),N.Doy(e),N.Doy(f),N.Doy(g),N.Doy(h),N.Doy(i),N.Doy(l),N.Do
y(m));


[d_values_air_avg,d_row_air_avg,d_column_air_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmean');
[d_values_air_max,d_row_air_max,d_column_air_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmax');
[d_values_air_min,d_row_air_min,d_column_air_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmin');
[d_values_gra_avg,d_row_gra_avg,d_column_gra_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmean');
[d_values_gra_max,d_row_gra_max,d_column_gra_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmax');
[d_values_gra_min,d_row_gra_min,d_column_gra_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmin');
[d_values_rad_sum,d_row_rad_sum,d_column_rad_sum]=pivottable(p_doy,[p_def
```

```
p_gem p_dir],p_rad,'nansum');

%gap-filling e quality check per il 2009 BROLIO
if styear==2009
    %valori dal 182 della M di brolio mancanti
    d_values_air_avg(1:9,1)=d_values_air_avg(1:9,2);
    d_values_air_max(1:9,1)=d_values_air_max(1:9,2);
    d_values_air_min(1:9,1)=d_values_air_min(1:9,2);
    d_values_gra_avg(1:9,1)=d_values_gra_avg(1:9,2);
    d_values_gra_max(1:9,1)=d_values_gra_max(1:9,2);
    d_values_gra_min(1:9,1)=d_values_gra_min(1:9,2);
    d_values_rad_sum(1:9,1)=d_values_rad_sum(1:9,2);

    % ciclo per tutte le slave gap filling aria
    for ixe=1:8
     a_g=d_values_air_avg(:,ixe);
      xi = find(isnan(a_g));
      x = 1:length(a_g);
      D = setdiff(x, xi);
      yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
      a_g(xi) = yi;
      d_values_air_avg(:,ixe)=a_g;
     a_g=d_values_air_max(:,ixe);
      xi = find(isnan(a_g));
      x = 1:length(a_g);
      D = setdiff(x, xi);
      yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
      a_g(xi) = yi;
      d_values_air_max(:,ixe)=a_g;
     a_g=d_values_air_min(:,ixe);
      xi = find(isnan(a_g));
      x = 1:length(a_g);
      D = setdiff(x, xi);
      yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
      a_g(xi) = yi;
      d_values_air_min(:,ixe)=a_g;
    % ciclo per tutte le slave gap filling GRAPE
     g_g=d_values_gra_avg(:,ixe);
      xi = find(isnan(g_g));
      x = 1:length(g_g);
      D = setdiff(x, xi);
      yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
      g_g(xi) = yi;
      d_values_gra_avg(:,ixe)=g_g;
     g_g=d_values_gra_max(:,ixe);
      xi = find(isnan(g_g));
      x = 1:length(g_g);
      D = setdiff(x, xi);
      yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
      g_g(xi) = yi;
      d_values_gra_max(:,ixe)=g_g;
     g_g=d_values_gra_min(:,ixe);
      xi = find(isnan(g_g));
      x = 1:length(g_g);
      D = setdiff(x, xi);
      yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
      g_g(xi) = yi;
      d_values_gra_min(:,ixe)=g_g;
         %gap filling radiazione
     r_g=d_values_rad_sum(:,ixe);
      xi = find(isnan(r_g));
      x = 1:length(r_g);
      D = setdiff(x, xi);
      yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
      r_g(xi) = yi;
      d_values_rad_sum(:,ixe)=r_g;
      %%%%%%%%%%%%%%
    end
%gap-filling e quality check per il 2008 BROLIO
% if styear==2008
%     %gap filling aria
%      a_g=d_values_air_avg(:,6);
%       xi = find(isnan(a_g));
```

```
%        x = 1:length(a_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%        a_g(xi) = yi;
%        d_values_air_avg(:,6)=a_g;
%       a_g=d_values_air_max(:,6);
%        xi = find(isnan(a_g));
%        x = 1:length(a_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%        a_g(xi) = yi;
%        d_values_air_max(:,6)=a_g;
%       a_g=d_values_air_min(:,6);
%        xi = find(isnan(a_g));
%        x = 1:length(a_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%        a_g(xi) = yi;
%        d_values_air_min(:,6)=a_g;
%     %gap filling grape G
%       g_g=d_values_gra_avg(:,6);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_avg(:,6)=g_g;
%       g_g=d_values_gra_max(:,6);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_max(:,6)=g_g;
%       g_g=d_values_gra_min(:,6);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_min(:,6)=g_g;
%     %gap filling grape H
%       g_g=d_values_gra_avg(:,4);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_avg(:,4)=g_g;
%       g_g=d_values_gra_max(:,4);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_max(:,4)=g_g;
%       g_g=d_values_gra_min(:,4);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_min(:,4)=g_g;
%     %gap filling grape D
%       g_g=d_values_gra_avg(:,3);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_avg(:,3)=g_g;
%       g_g=d_values_gra_max(:,3);
%        xi = find(isnan(g_g));
```

```
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,3)=g_g;
%      g_g=d_values_gra_min(:,3);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,3)=g_g;
%          %gap filling radiazione G
%      r_g=d_values_rad_sum(:,6);
%       xi = find(isnan(r_g));
%       x = 1:length(r_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
%       r_g(xi) = yi;
%       d_values_rad_sum(:,6)=r_g;
      %%%%%%%%%%%%%%

%     %tolgo la I e tutti i suoi parametri li imposto come la M che ha le
stesse due tipologie di def e gem
%     d_values_air_avg(:,2)=d_values_air_avg(:,1);
%     d_values_air_max(:,2)=d_values_air_max(:,1);
%     d_values_air_min(:,2)=d_values_air_min(:,1);
%     d_values_gra_avg(:,2)=d_values_gra_avg(:,1);
%     d_values_gra_max(:,2)=d_values_gra_max(:,1);
%     d_values_gra_min(:,2)=d_values_gra_min(:,1);
%     d_values_rad_sum(:,2)=d_values_rad_sum(:,1);
end

% giorni medi (orari)
[h_values_air_avg,h_row_air_avg,h_column_air_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_air,'nanmean');
[h_values_gra_avg,h_row_gra_avg,h_column_gra_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_grap,'nanmean');
[h_values_rad_avg,h_row_rad_avg,h_column_rad_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_rad,'nanmean');
if styear==2008
    %la I la imposto come la M
    h_values_air_avg(:,2)=h_values_air_avg(:,1);
    h_values_gra_avg(:,2)=h_values_gra_avg(:,1);
    h_values_rad_avg(:,2)=h_values_rad_avg(:,1);
end
%orari solo def e gem quindi 4 serie
h_values_air_avg_tesi=
horzcat(nanmean(h_values_air_avg(:,1:2),2),nanmean(h_values_air_avg(:,3:4),
2),nanmean(h_values_air_avg(:,5:6),2),nanmean(h_values_air_avg(:,7:8),2));
h_values_gra_avg_tesi=
horzcat(nanmean(h_values_gra_avg(:,1:2),2),nanmean(h_values_gra_avg(:,3:4),
2),nanmean(h_values_gra_avg(:,5:6),2),nanmean(h_values_gra_avg(:,7:8),2));
h_values_rad_avg_tesi=
horzcat(nanmean(h_values_rad_avg(:,1:2),2),nanmean(h_values_rad_avg(:,3:4),
2),nanmean(h_values_rad_avg(:,5:6),2),nanmean(h_values_rad_avg(:,7:8),2));

%giornalieri solo def e gem quindi 4 serie
t_values_air_avg=
horzcat(mean(d_values_air_avg(:,1:2),2),mean(d_values_air_avg(:,3:4),2),mea
n(d_values_air_avg(:,5:6),2),mean(d_values_air_avg(:,7:8),2));
t_values_air_max=
horzcat(mean(d_values_air_max(:,1:2),2),mean(d_values_air_max(:,3:4),2),mea
n(d_values_air_max(:,5:6),2),mean(d_values_air_max(:,7:8),2));
t_values_air_min=
horzcat(mean(d_values_air_min(:,1:2),2),mean(d_values_air_min(:,3:4),2),mea
n(d_values_air_min(:,5:6),2),mean(d_values_air_min(:,7:8),2));
t_values_gra_avg=
horzcat(mean(d_values_gra_avg(:,1:2),2),mean(d_values_gra_avg(:,3:4),2),mea
n(d_values_gra_avg(:,5:6),2),mean(d_values_gra_avg(:,7:8),2));
t_values_gra_max=
horzcat(mean(d_values_gra_max(:,1:2),2),mean(d_values_gra_max(:,3:4),2),mea
n(d_values_gra_max(:,5:6),2),mean(d_values_gra_max(:,7:8),2));
```

```
t_values_gra_min=
horzcat(mean(d_values_gra_min(:,1:2),2),mean(d_values_gra_min(:,3:4),2),mea
n(d_values_gra_min(:,5:6),2),mean(d_values_gra_min(:,7:8),2));
t_values_rad_sum=
horzcat(mean(d_values_rad_sum(:,1:2),2),mean(d_values_rad_sum(:,3:4),2),mea
n(d_values_rad_sum(:,5:6),2),mean(d_values_rad_sum(:,7:8),2));


%indici per tutte le tesi (slave)
% air_avg=nanmean(d_values_air_avg);
% air_max=nanmean(d_values_air_max);
% air_min=nanmean(d_values_air_min);
% air_avg_sum=nansum(d_values_air_avg);
% air_max_sum=nansum(d_values_air_max);
% air_min_sum=nansum(d_values_air_min);
% escursion=air_max_sum-air_min_sum;

%indici per le tesi def e gem (4 serie nera-verde-rossa-gialla)
air_avg_t=nanmean(t_values_air_avg);
air_max_t=nanmean(t_values_air_max);
air_min_t=nanmean(t_values_air_min);
air_avg_sum_t=nansum(t_values_air_avg);
air_max_sum_t=nansum(t_values_air_max);
air_min_sum_t=nansum(t_values_air_min);
gra_avg_t=nanmean(t_values_gra_avg);
gra_max_t=nanmean(t_values_gra_max);
gra_min_t=nanmean(t_values_gra_min);
gra_avg_sum_t=nansum(t_values_gra_avg);
gra_max_sum_t=nansum(t_values_gra_max);
gra_min_sum_t=nansum(t_values_gra_min);
rad_sum_t=nansum(t_values_rad_sum);

% IW air
iw_air_nero=sum(t_values_air_avg((t_values_air_avg(:,1)>10),1)-10);
iw_air_verde=sum(t_values_air_avg((t_values_air_avg(:,2)>10),2)-10);
iw_air_rosso=sum(t_values_air_avg((t_values_air_avg(:,3)>10),3)-10);
iw_air_giallo=sum(t_values_air_avg((t_values_air_avg(:,4)>10),4)-10);
iw_air=horzcat(iw_air_nero,iw_air_verde,iw_air_rosso,iw_air_giallo);
% IW_grape
iw_gra_nero=sum(t_values_gra_avg((t_values_gra_avg(:,1)>10),1)-10);
iw_gra_verde=sum(t_values_gra_avg((t_values_gra_avg(:,2)>10),2)-10);
iw_gra_rosso=sum(t_values_gra_avg((t_values_gra_avg(:,3)>10),3)-10);
iw_gra_giallo=sum(t_values_gra_avg((t_values_gra_avg(:,4)>10),4)-10);
iw_gra=horzcat(iw_gra_nero,iw_gra_verde,iw_gra_rosso,iw_gra_giallo);
% IH_air
ih_air_nero=sum(((t_values_air_avg(:,1)-10)+(t_values_air_max(:,1)-10))/2);
ih_air_verde=sum(((t_values_air_avg(:,2)-10)+(t_values_air_max(:,2)-10))
/2);
ih_air_rosso=sum(((t_values_air_avg(:,3)-10)+(t_values_air_max(:,3)-10))
/2);
ih_air_giallo=sum(((t_values_air_avg(:,4)-10)+(t_values_air_max(:,4)-10))
/2);
ih_air=horzcat(ih_air_nero,ih_air_verde,ih_air_rosso,ih_air_giallo);
% IH_grape
ih_gra_nero=sum(((t_values_gra_avg(:,1)-10)+(t_values_gra_max(:,1)-10))/2);
ih_gra_verde=sum(((t_values_gra_avg(:,2)-10)+(t_values_gra_max(:,2)-10))
/2);
ih_gra_rosso=sum(((t_values_gra_avg(:,3)-10)+(t_values_gra_max(:,3)-10))
/2);
ih_gra_giallo=sum(((t_values_gra_avg(:,4)-10)+(t_values_gra_max(:,4)-10))
/2);
ih_gra=horzcat(ih_gra_nero,ih_gra_verde,ih_gra_rosso,ih_gra_giallo);
% SET_air
set_air=sum(t_values_air_max-t_values_air_min);
% SET_grape
set_gra=sum(t_values_gra_max-t_values_gra_min);
% IG_air
% IG_grape
% IFS_air
freddi_air_nero=length(find(t_values_air_min(:,1)<10));
freddi_air_verde=length(find(t_values_air_min(:,2)<10));
freddi_air_rosso=length(find(t_values_air_min(:,3)<10));
freddi_air_giallo=length(find(t_values_air_min(:,4)<10));
```

```
ifs_air_nero=sum(t_values_air_max(:,1)-t_values_air_min(:,1))
*(freddi_air_nero+1);
ifs_air_verde=sum(t_values_air_max(:,2)-t_values_air_min(:,2))
*(freddi_air_verde+1);
ifs_air_rosso=sum(t_values_air_max(:,3)-t_values_air_min(:,3))
*(freddi_air_rosso+1);
ifs_air_giallo=sum(t_values_air_max(:,4)-t_values_air_min(:,4))
*(freddi_air_giallo+1);

ifs_air=horzcat(ifs_air_nero,ifs_air_verde,ifs_air_rosso,ifs_air_giallo);

% IFS_grape
freddi_gra_nero=length(find(t_values_gra_min(:,1)<10));
freddi_gra_verde=length(find(t_values_gra_min(:,2)<10));
freddi_gra_rosso=length(find(t_values_gra_min(:,3)<10));
freddi_gra_giallo=length(find(t_values_gra_min(:,4)<10));
ifs_gra_nero=sum(t_values_gra_max(:,1)-t_values_gra_min(:,1))
*(freddi_gra_nero+1);
ifs_gra_verde=sum(t_values_gra_max(:,2)-t_values_gra_min(:,2))
*(freddi_gra_verde+1);
ifs_gra_rosso=sum(t_values_gra_max(:,3)-t_values_gra_min(:,3))
*(freddi_gra_rosso+1);
ifs_gra_giallo=sum(t_values_gra_max(:,4)-t_values_gra_min(:,4))
*(freddi_gra_giallo+1);
ifs_gra=horzcat(ifs_gra_nero,ifs_gra_verde,ifs_gra_rosso,ifs_gra_giallo);
% CoolNI_air
CoolNI_air=air_min_t;
% CoolNI_grape
CoolNI_grap=gra_min_t;
% Morning(03-10)_Index_air
Morning_03_10_Index_air=nanmean(h_values_air_avg_tesi(4:11,:));
% Morning(03-10)_Index_grape
Morning_03_10_Index_grape=nanmean(h_values_gra_avg_tesi(4:11,:));
% Diurnal(11-18)_Index_air
Diurnal_11_18_Index_air=nanmean(h_values_air_avg_tesi(12:19,:));
% Diurnal(11-18)_Index_grape
Diurnal_11_18_Index_grape=nanmean(h_values_gra_avg_tesi(12:19,:));
% Night(19-02)_Index_air
Night_19_02_Index_air=
nanmean(vertcat(h_values_air_avg_tesi(20:24,:),h_values_air_avg_tesi(1:3,:)
));
% Night(19-02)_Index_grape
Night_19_02_Index_grape=
nanmean(vertcat(h_values_gra_avg_tesi(20:24,:),h_values_gra_avg_tesi(1:3,:)
));

MDN_index_air=
vertcat(Morning_03_10_Index_air,Diurnal_11_18_Index_air,Night_19_02_Index_a
ir);
MDN_index_gra=
vertcat(Morning_03_10_Index_grape,Diurnal_11_18_Index_grape,Night_19_02_Ind
ex_grape);
%
% dMorning_5_10_air=[2.1664     2.2391  2.2652  2.3698];
% dMorning_5_10_grape=[2.1393   2.3651  2.3789  2.1366];
% dTwilight_15_20_air=[-1.7419  -1.9075 -1.9198 -1.8619];
% dTwilight_15_20_grape=[-2.1404        -2.0402 -2.1484 -1.9785];
% d_index_air=vertcat(dMorning_5_10_air,dTwilight_15_20_air);
% d_index_gra=vertcat(dMorning_5_10_grape,dTwilight_15_20_grape);

dMorning_rate_5_10_air=(h_values_air_avg_tesi(11,:)-
h_values_air_avg_tesi(6,:))/6;
dMorning_rate_5_10_grape=(h_values_gra_avg_tesi(11,:)-
h_values_gra_avg_tesi(6,:))/6;
dTwilight_rate_15_20_air=(h_values_air_avg_tesi(21,:)-
h_values_air_avg_tesi(16,:))/6;
dTwilight_rate_15_20_grape=(h_values_gra_avg_tesi(21,:)-
h_values_gra_avg_tesi(16,:))/6;
d_index_rate_air=vertcat(dMorning_rate_5_10_air,dTwilight_rate_15_20_air);
d_index_rate_gra=
vertcat(dMorning_rate_5_10_grape,dTwilight_rate_15_20_grape);
% per la master
```

```
p_doy_m=N.Doy(mast);
p_air_avg_m=N.Tempmedia(mast);
p_air_max_m=N.Tmax(mast);
p_air_min_m=N.Tmin(mast);
p_rad_avg_m=N.RadGmedia(mast);
p_666=N.defogliazione(mast);
[d_values_master_air_avg,d_row_master_air_avg,d_column_master_air_avg]=
pivottable(p_doy_m,p_666,p_air_avg_m,'nanmean');
[d_values_master_air_max,d_row_master_air_max,d_column_master_air_max]=
pivottable(p_doy_m,p_666,p_air_max_m,'nanmax');
[d_values_master_air_min,d_row_master_air_min,d_column_master_air_min]=
pivottable(p_doy_m,p_666,p_air_min_m,'nanmin');
[d_values_master_rad_sum,d_row_rad_sum,d_column_rad_sum]=
pivottable(p_doy_m,p_666,p_rad_avg_m,'nansum');

[h_values_ms,h_row_ms,h_column_ms]=pivottable(p_ora,[p_666
p_666],p_air_avg_m,'nanmean');
% Master_IW
master_iw=sum(d_values_master_air_avg((d_values_master_air_avg>10),1)-10);
% Master_IH
master_ih=sum(((d_values_master_air_avg-10)+(d_values_master_air_max-10))
/2);
% Master_SET
master_set=sum(d_values_master_air_max-d_values_master_air_min);
% Master IG
% Master_IFS
freddi_master=length(find(d_values_master_air_min<10));
master_ifs=sum(d_values_master_air_max-d_values_master_air_min)
*(freddi_master+1);
% Master_CoolNI
master_cooln=nanmean(d_values_master_air_min);
%matrice indici totale
matrix_index_slave_air=
vertcat(air_avg_t,air_max_t,air_min_t,air_avg_sum_t,air_max_sum_t,air_min_s
um_t,iw_air,ih_air,set_air,ifs_air,CoolNI_air,MDN_index_air,d_index_rate_ai
r);
matrix_index_slave_gra=
vertcat(rad_sum_t,gra_avg_t,gra_max_t,gra_min_t,gra_avg_sum_t,gra_max_sum_t
,gra_min_sum_t,iw_gra,ih_gra,set_gra,ifs_gra,CoolNI_grap,MDN_index_gra,d_in
dex_rate_gra);
matrix_index_master=
horzcat(master_iw,master_ih,master_set,master_ifs,master_cooln);

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
figure('name','pivot tgrape alta vigoria')
hold on
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot tair alta vigoria')
hold on
plot(h_row_air_avg,h_values_air_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot RAD alta vigoria')
hold on
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)

elseif v==2 %donna olimpia

sname1=['Tair Master vs Tair Slave'];
eval(['figure(''Name'', sname1 )'])
```

```
grid on
hold on
ss='N.Tempmedia';
s='N.Tair';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])
%
sname2=['Tair Master vs Tgrape Slave'];
eval(['figure(''Name'', sname2 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tgrap';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])

sname22=['Tair Master vs Tleaf Slave'];
eval(['figure(''Name'', sname22 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tleaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
```

```
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])


sname3=['precipitazioni Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname3 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.Bagn_leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])

sname4=['precipitazioni Master vs potenziale idrico 30 cm Slave'];
eval(['figure(''Name'', sname4 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil1';
sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(mast), sss(mast),''r+-'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''airMaster'',''A'',''D'',''F'',''I'',''L'',-1)'])

sname5=['precipitazioni Master vs potenziale idrico 60 cm Slave'];
eval(['figure(''Name'', sname5 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil2';
sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(mast), sss(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''airMaster'',''A'',''D'',''F'',''I'',''L'',-1)'])

sname6=['vento Master vs vento Slave'];
eval(['figure(''Name'', sname6 )'])
grid on
hold on
ss='N.VVent1Vmed';
s='N.VV';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''m+-'',''LineWidth'',2)'])

eval(['legend(''Master'',''B'',''D'',''E'',''G'',''I'',''L'',-1)'])

sname7=['radiazione Master vs radiazione Slave'];
eval(['figure(''Name'', sname7 )'])
grid on
hold on
ss='N.RadGmedia';
s='N.Rad';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k+-'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(d),' s '(d),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])


sname8=['Tair Master vs Tgrape2 cm Slave'];
eval(['figure(''Name'', sname8 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''r-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''B'',''C'',''E'',''G'',''H'',-1)'])

sname9=['Tair Master vs Tgrape3 cm Slave'];
eval(['figure(''Name'', sname9 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''r-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''B'',''C'',''E'',''G'',''H'',-1)'])


%pivot solo HV
p_ora=
vertcat(N.ora(a),N.ora(b),N.ora(c),N.ora(e),N.ora(f),N.ora(g),N.ora(h),N.or
a(i));
p_def=
vertcat(N.defogliazione(a),N.defogliazione(b),N.defogliazione(c),N.defoglia
zione(e),N.defogliazione(f),N.defogliazione(g),N.defogliazione(h),N.defogli
azione(i));
p_gem=
vertcat(N.gemme(a),N.gemme(b),N.gemme(c),N.gemme(e),N.gemme(f),N.gemme(g),N
.gemme(h),N.gemme(i));
p_dir=
vertcat(N.diradamento(a),N.diradamento(b),N.diradamento(c),N.diradamento(e)
,N.diradamento(f),N.diradamento(g),N.diradamento(h),N.diradamento(i));
p_grap=
vertcat(N.Tgrap(a),N.Tgrap(b),N.Tgrap(c),N.Tgrap(e),N.Tgrap(f),N.Tgrap(g),N
.Tgrap(h),N.Tgrap(i));
p_air=
vertcat(N.Tair(a),N.Tair(b),N.Tair(c),N.Tair(e),N.Tair(f),N.Tair(g),N.Tair(
```

```
h),N.Tair(i));
p_rad=
vertcat(N.Rad(a),N.Rad(b),N.Rad(c),N.Rad(e),N.Rad(f),N.Rad(g),N.Rad(h),N.Ra
d(i));
p_doy=
vertcat(N.Doy(a),N.Doy(b),N.Doy(c),N.Doy(e),N.Doy(f),N.Doy(g),N.Doy(h),N.Do
y(i));
%%%%%%%%%%%


[d_values_air_avg,d_row_air_avg,d_column_air_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmean');
[d_values_air_max,d_row_air_max,d_column_air_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmax');
[d_values_air_min,d_row_air_min,d_column_air_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmin');
[d_values_gra_avg,d_row_gra_avg,d_column_gra_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmean');
[d_values_gra_max,d_row_gra_max,d_column_gra_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmax');
[d_values_gra_min,d_row_gra_min,d_column_gra_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmin');
[d_values_rad_sum,d_row_rad_sum,d_column_rad_sum]=pivottable(p_doy,[p_def
p_gem p_dir],p_rad,'nansum');


%gap-filling e quality check per il 2009 DONNA OLIMPIA
if styear==2009
%     %tolgo la RAD della B e la imposto come la G
     d_values_rad_sum(:,4)=d_values_rad_sum(:,3);

    % ciclo per tutte le slave gap filling aria
    for ixe=1:8
     a_g=d_values_air_avg(:,ixe);
      xi = find(isnan(a_g));
      x = 1:length(a_g);
      D = setdiff(x, xi);
      yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
      a_g(xi) = yi;
      d_values_air_avg(:,ixe)=a_g;
     a_g=d_values_air_max(:,ixe);
      xi = find(isnan(a_g));
      x = 1:length(a_g);
      D = setdiff(x, xi);
      yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
      a_g(xi) = yi;
      d_values_air_max(:,ixe)=a_g;
     a_g=d_values_air_min(:,ixe);
      xi = find(isnan(a_g));
      x = 1:length(a_g);
      D = setdiff(x, xi);
      yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
      a_g(xi) = yi;
      d_values_air_min(:,ixe)=a_g;
    % ciclo per tutte le slave gap filling GRAPE
     g_g=d_values_gra_avg(:,ixe);
      xi = find(isnan(g_g));
      x = 1:length(g_g);
      D = setdiff(x, xi);
      yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
      g_g(xi) = yi;
      d_values_gra_avg(:,ixe)=g_g;
     g_g=d_values_gra_max(:,ixe);
      xi = find(isnan(g_g));
      x = 1:length(g_g);
      D = setdiff(x, xi);
      yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
      g_g(xi) = yi;
      d_values_gra_max(:,ixe)=g_g;
     g_g=d_values_gra_min(:,ixe);
      xi = find(isnan(g_g));
      x = 1:length(g_g);
      D = setdiff(x, xi);
```

```
      yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
      g_g(xi) = yi;
      d_values_gra_min(:,ixe)=g_g;
         %gap filling radiazione
     r_g=d_values_rad_sum(:,ixe);
      xi = find(isnan(r_g));
      x = 1:length(r_g);
      D = setdiff(x, xi);
      yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
      r_g(xi) = yi;
      d_values_rad_sum(:,ixe)=r_g;
      %%%%%%%%%%%%%%
    end


% %gap-filling e quality check per il 2008 DONNA OLIMPIA
% if styear==2008
%     %gap filling aria E
%      a_g=d_values_air_avg(:,8);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_avg(:,8)=a_g;
%      a_g=d_values_air_max(:,8);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_max(:,8)=a_g;
%      a_g=d_values_air_min(:,8);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_min(:,8)=a_g;
%    %gap filling grape E
%      g_g=d_values_gra_avg(:,8);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,8)=g_g;
%      g_g=d_values_gra_max(:,8);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,8)=g_g;
%      g_g=d_values_gra_min(:,8);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,8)=g_g;
%       %%%%%%%%%%%%%%
%     %tolgo la B e tutti i suoi parametri li imposto come la G che ha le
stesse due tipologie di def e gem
%     d_values_air_avg(:,4)=d_values_air_avg(:,3);
%     d_values_air_max(:,4)=d_values_air_max(:,3);
%     d_values_air_min(:,4)=d_values_air_min(:,3);
%     d_values_gra_avg(:,4)=d_values_gra_avg(:,3);
%     d_values_gra_max(:,4)=d_values_gra_max(:,3);
%     d_values_gra_min(:,4)=d_values_gra_min(:,3);
%     d_values_rad_sum(:,4)=d_values_rad_sum(:,3);
 end
```

```
% giorni medi (orari)
[h_values_air_avg,h_row_air_avg,h_column_air_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_air,'nanmean');
[h_values_gra_avg,h_row_gra_avg,h_column_gra_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_grap,'nanmean');
[h_values_rad_avg,h_row_rad_avg,h_column_rad_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_rad,'nanmean');
if styear==2008
    %la I la imposto come la M
    h_values_air_avg(:,4)=h_values_air_avg(:,3);
    h_values_gra_avg(:,4)=h_values_gra_avg(:,3);
    h_values_rad_avg(:,4)=h_values_rad_avg(:,3);
end
%orari solo def e gem quindi 4 serie
h_values_air_avg_tesi=
horzcat(nanmean(h_values_air_avg(:,1:2),2),nanmean(h_values_air_avg(:,3:4),
2),nanmean(h_values_air_avg(:,5:6),2),nanmean(h_values_air_avg(:,7:8),2));
h_values_gra_avg_tesi=
horzcat(nanmean(h_values_gra_avg(:,1:2),2),nanmean(h_values_gra_avg(:,3:4),
2),nanmean(h_values_gra_avg(:,5:6),2),nanmean(h_values_gra_avg(:,7:8),2));
h_values_rad_avg_tesi=
horzcat(nanmean(h_values_rad_avg(:,1:2),2),nanmean(h_values_rad_avg(:,3:4),
2),nanmean(h_values_rad_avg(:,5:6),2),nanmean(h_values_rad_avg(:,7:8),2));

%giornalieri solo def e gem quindi 4 serie
t_values_air_avg=
horzcat(mean(d_values_air_avg(:,1:2),2),mean(d_values_air_avg(:,3:4),2),mea
n(d_values_air_avg(:,5:6),2),mean(d_values_air_avg(:,7:8),2));
t_values_air_max=
horzcat(mean(d_values_air_max(:,1:2),2),mean(d_values_air_max(:,3:4),2),mea
n(d_values_air_max(:,5:6),2),mean(d_values_air_max(:,7:8),2));
t_values_air_min=
horzcat(mean(d_values_air_min(:,1:2),2),mean(d_values_air_min(:,3:4),2),mea
n(d_values_air_min(:,5:6),2),mean(d_values_air_min(:,7:8),2));
t_values_gra_avg=
horzcat(mean(d_values_gra_avg(:,1:2),2),mean(d_values_gra_avg(:,3:4),2),mea
n(d_values_gra_avg(:,5:6),2),mean(d_values_gra_avg(:,7:8),2));
t_values_gra_max=
horzcat(mean(d_values_gra_max(:,1:2),2),mean(d_values_gra_max(:,3:4),2),mea
n(d_values_gra_max(:,5:6),2),mean(d_values_gra_max(:,7:8),2));
t_values_gra_min=
horzcat(mean(d_values_gra_min(:,1:2),2),mean(d_values_gra_min(:,3:4),2),mea
n(d_values_gra_min(:,5:6),2),mean(d_values_gra_min(:,7:8),2));
t_values_rad_sum=
horzcat(mean(d_values_rad_sum(:,1:2),2),mean(d_values_rad_sum(:,3:4),2),mea
n(d_values_rad_sum(:,5:6),2),mean(d_values_rad_sum(:,7:8),2));

%indici per le tesi def e gem (4 serie nera-verde-rossa-gialla)
air_avg_t=nanmean(t_values_air_avg);
air_max_t=nanmean(t_values_air_max);
air_min_t=nanmean(t_values_air_min);
air_avg_sum_t=nansum(t_values_air_avg);
air_max_sum_t=nansum(t_values_air_max);
air_min_sum_t=nansum(t_values_air_min);
gra_avg_t=nanmean(t_values_gra_avg);
gra_max_t=nanmean(t_values_gra_max);
gra_min_t=nanmean(t_values_gra_min);
gra_avg_sum_t=nansum(t_values_gra_avg);
gra_max_sum_t=nansum(t_values_gra_max);
gra_min_sum_t=nansum(t_values_gra_min);
rad_sum_t=nansum(t_values_rad_sum);

% IW_air
iw_air_nero=sum(t_values_air_avg((t_values_air_avg(:,1)>10),1)-10);
iw_air_verde=sum(t_values_air_avg((t_values_air_avg(:,2)>10),2)-10);
iw_air_rosso=sum(t_values_air_avg((t_values_air_avg(:,3)>10),3)-10);
iw_air_giallo=sum(t_values_air_avg((t_values_air_avg(:,4)>10),4)-10);
iw_air=horzcat(iw_air_nero,iw_air_verde,iw_air_rosso,iw_air_giallo);
% IW_grape
iw_gra_nero=sum(t_values_gra_avg((t_values_gra_avg(:,1)>10),1)-10);
iw_gra_verde=sum(t_values_gra_avg((t_values_gra_avg(:,2)>10),2)-10);
iw_gra_rosso=sum(t_values_gra_avg((t_values_gra_avg(:,3)>10),3)-10);
iw_gra_giallo=sum(t_values_gra_avg((t_values_gra_avg(:,4)>10),4)-10);
```

```
iw_gra=horzcat(iw_gra_nero,iw_gra_verde,iw_gra_rosso,iw_gra_giallo);
% IH_air
ih_air_nero=sum(((t_values_air_avg(:,1)-10)+(t_values_air_max(:,1)-10))/2);
ih_air_verde=sum(((t_values_air_avg(:,2)-10)+(t_values_air_max(:,2)-10))
/2);
ih_air_rosso=sum(((t_values_air_avg(:,3)-10)+(t_values_air_max(:,3)-10))
/2);
ih_air_giallo=sum(((t_values_air_avg(:,4)-10)+(t_values_air_max(:,4)-10))
/2);
ih_air=horzcat(ih_air_nero,ih_air_verde,ih_air_rosso,ih_air_giallo);
% IH_grape
ih_gra_nero=sum(((t_values_gra_avg(:,1)-10)+(t_values_gra_max(:,1)-10))/2);
ih_gra_verde=sum(((t_values_gra_avg(:,2)-10)+(t_values_gra_max(:,2)-10))
/2);
ih_gra_rosso=sum(((t_values_gra_avg(:,3)-10)+(t_values_gra_max(:,3)-10))
/2);
ih_gra_giallo=sum(((t_values_gra_avg(:,4)-10)+(t_values_gra_max(:,4)-10))
/2);
ih_gra=horzcat(ih_gra_nero,ih_gra_verde,ih_gra_rosso,ih_gra_giallo);
% SET_air
set_air=sum(t_values_air_max-t_values_air_min);
% SET_grape
set_gra=sum(t_values_gra_max-t_values_gra_min);
% IG_air
% IG_grape
% IFS_air
freddi_air_nero=length(find(t_values_air_min(:,1)<10));
freddi_air_verde=length(find(t_values_air_min(:,2)<10));
freddi_air_rosso=length(find(t_values_air_min(:,3)<10));
freddi_air_giallo=length(find(t_values_air_min(:,4)<10));
ifs_air_nero=sum(t_values_air_max(:,1)-t_values_air_min(:,1))
*(freddi_air_nero+1);
ifs_air_verde=sum(t_values_air_max(:,2)-t_values_air_min(:,2))
*(freddi_air_verde+1);
ifs_air_rosso=sum(t_values_air_max(:,3)-t_values_air_min(:,3))
*(freddi_air_rosso+1);
ifs_air_giallo=sum(t_values_air_max(:,4)-t_values_air_min(:,4))
*(freddi_air_giallo+1);
ifs_air=horzcat(ifs_air_nero,ifs_air_verde,ifs_air_rosso,ifs_air_giallo);

% IFS_grape
freddi_gra_nero=length(find(t_values_gra_min(:,1)<10));
freddi_gra_verde=length(find(t_values_gra_min(:,2)<10));
freddi_gra_rosso=length(find(t_values_gra_min(:,3)<10));
freddi_gra_giallo=length(find(t_values_gra_min(:,4)<10));
ifs_gra_nero=sum(t_values_gra_max(:,1)-t_values_gra_min(:,1))
*(freddi_gra_nero+1);
ifs_gra_verde=sum(t_values_gra_max(:,2)-t_values_gra_min(:,2))
*(freddi_gra_verde+1);
ifs_gra_rosso=sum(t_values_gra_max(:,3)-t_values_gra_min(:,3))
*(freddi_gra_rosso+1);
ifs_gra_giallo=sum(t_values_gra_max(:,4)-t_values_gra_min(:,4))
*(freddi_gra_giallo+1);
ifs_gra=horzcat(ifs_gra_nero,ifs_gra_verde,ifs_gra_rosso,ifs_gra_giallo);
% CoolNI_air
CoolNI_air=air_min_t;
% CoolNI_grape
CoolNI_grap=gra_min_t;
% Morning(03-10)_Index_air
Morning_03_10_Index_air=nanmean(h_values_air_avg_tesi(4:11,:));
% Morning(03-10)_Index_grape
Morning_03_10_Index_grape=nanmean(h_values_gra_avg_tesi(4:11,:));
% Diurnal(11-18)_Index_air
Diurnal_11_18_Index_air=nanmean(h_values_air_avg_tesi(12:19,:));
% Diurnal(11-18)_Index_grape
Diurnal_11_18_Index_grape=nanmean(h_values_gra_avg_tesi(12:19,:));
% Night(19-02)_Index_air
Night_19_02_Index_air=
nanmean(vertcat(h_values_air_avg_tesi(20:24,:),h_values_air_avg_tesi(1:3,:)
));
% Night(19-02)_Index_grape
Night_19_02_Index_grape=
nanmean(vertcat(h_values_gra_avg_tesi(20:24,:),h_values_gra_avg_tesi(1:3,:)
```

```
));

MDN_index_air=
vertcat(Morning_03_10_Index_air,Diurnal_11_18_Index_air,Night_19_02_Index_a
ir);
MDN_index_gra=
vertcat(Morning_03_10_Index_grape,Diurnal_11_18_Index_grape,Night_19_02_Ind
ex_grape);
%
% dMorning_5_10_air=[2.4988 2.6327 2.5892 2.5218];
% dMorning_5_10_grape=[2.8124 2.7129 3.1847 2.7789];
% dTwilight_15_20_air=[-1.5655 -1.5818 -1.5685 -1.5096];
% dTwilight_15_20_grape=[-1.7907 -1.712 -1.801 -1.7404];
% d_index_air=vertcat(dMorning_5_10_air,dTwilight_15_20_air);
% d_index_gra=vertcat(dMorning_5_10_grape,dTwilight_15_20_grape);

dMorning_rate_5_10_air=(h_values_air_avg_tesi(11,:)-
h_values_air_avg_tesi(6,:))/6;
dMorning_rate_5_10_grape=(h_values_gra_avg_tesi(11,:)-
h_values_gra_avg_tesi(6,:))/6;
dTwilight_rate_15_20_air=(h_values_air_avg_tesi(21,:)-
h_values_air_avg_tesi(16,:))/6;
dTwilight_rate_15_20_grape=(h_values_gra_avg_tesi(21,:)-
h_values_gra_avg_tesi(16,:))/6;
d_index_rate_air=vertcat(dMorning_rate_5_10_air,dTwilight_rate_15_20_air);
d_index_rate_gra=
vertcat(dMorning_rate_5_10_grape,dTwilight_rate_15_20_grape);

% per la master
p_doy_m=N.Doy(mast);
p_air_avg_m=N.Tempmedia(mast);
p_air_max_m=N.Tmax(mast);
p_air_min_m=N.Tmin(mast);
p_rad_avg_m=N.RadGmedia(mast);
p_666=N.defogliazione(mast);
[d_values_master_air_avg,d_row_master_air_avg,d_column_master_air_avg]=
pivottable(p_doy_m,p_666,p_air_avg_m,'nanmean');
[d_values_master_air_max,d_row_master_air_max,d_column_master_air_max]=
pivottable(p_doy_m,p_666,p_air_max_m,'nanmax');
[d_values_master_air_min,d_row_master_air_min,d_column_master_air_min]=
pivottable(p_doy_m,p_666,p_air_min_m,'nanmin');
[d_values_master_rad_sum,d_row_rad_sum,d_column_rad_sum]=
pivottable(p_doy_m,p_666,p_rad_avg_m,'nansum');

[h_values_ms,h_row_ms,h_column_ms]=pivottable(p_ora,[p_666
p_666],p_air_avg_m,'nanmean');
% Master_IW
master_iw=sum(d_values_master_air_avg((d_values_master_air_avg>10),1)-10);
% Master IH
master_ih=sum(((d_values_master_air_avg-10)+(d_values_master_air_max-10))
/2);
% Master_SET
master_set=sum(d_values_master_air_max-d_values_master_air_min);
% Master_IG
% Master_IFS
freddi_master=length(find(d_values_master_air_min<10));
master_ifs=sum(d_values_master_air_max-d_values_master_air_min)
*(freddi_master+1);
% Master_CoolNI
master_cooln=nanmean(d_values_master_air_min);
%matrice indici totale
matrix_index_slave_air=
vertcat(air_avg_t,air_max_t,air_min_t,air_avg_sum_t,air_max_sum_t,air_min_s
um_t,iw_air,ih_air,set_air,ifs_air,CoolNI_air,MDN_index_air,d_index_rate_ai
r);
matrix_index_slave_gra=
vertcat(rad_sum_t,gra_avg_t,gra_max_t,gra_min_t,gra_avg_sum_t,gra_max_sum_t
,gra_min_sum_t,iw_gra,ih_gra,set_gra,ifs_gra,CoolNI_grap,MDN_index_gra,d_in
dex_rate_gra);
matrix_index_master=
horzcat(master_iw,master_ih,master_set,master_ifs,master_cooln);
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
figure('name','pivot tgrape alta vigoria')
```

```
hold on
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot tair alta vigoria')
hold on
plot(h_row_air_avg,h_values_air_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot RAD alta vigoria')
hold on
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)

elseif v==3 %cacciagrande

sname1=['Tair Master vs Tair Slave'];
eval(['figure(''Name'', sname1 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tair';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])
%
sname2=['Tair Master vs Tgrape Slave'];
eval(['figure(''Name'', sname2 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tgrap';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
```

```
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])

sname22=['Tair Master vs Tleaf Slave'];
eval(['figure(''Name'', sname22 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tleaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])


sname3=['precipitazioni Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname3 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.Bagn_leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''y-.'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])

sname4=['precipitazioni Master vs potenziale idrico 30 cm Slave'];
eval(['figure(''Name'', sname4 )'])
grid on
hold on
ss=N.Piogsomma/100;
s='N.T_heatsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
eval(['bar(N.JDTpc(mast),ss(mast),''r'',''BarWidth'',0.6)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['legend(''Master/100'',''M'',''N'',''P'',''T'',''U'',-1)'])

sname5=['precipitazioni Master vs potenziale idrico 60 cm Slave'];
eval(['figure(''Name'', sname5 )'])
grid on
hold on
ss=N.Piogsomma/100;
s='N.T_heatsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
eval(['bar(N.JDTpc(mast),ss(mast),''r'',''BarWidth'',0.6)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['legend(''Master/100'',''M'',''N'',''P'',''T'',''U'',-1)'])

sname6=['vento Master vs vento Slave'];
eval(['figure(''Name'', sname6 )'])
grid on
hold on
ss='N.VVent1Vmed';
s='N.VV';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''r-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''T'',''U'',''V'',-1)'])

sname7=['radiazione Master vs radiazione Slave'];
eval(['figure(''Name'', sname7 )'])
grid on
hold on
```

```
ss='N.RadGmedia';
s='N.Rad';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])


sname8=['Tair Master vs Tgrape2 cm Slave'];
eval(['figure(''Name'', sname8 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''O'',''Q'',''R'',''S'',''V'',-1)'])

sname9=['Tair Master vs Tgrape3 cm Slave'];
eval(['figure(''Name'', sname9 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])

%pivot solo HV
p_ora=
vertcat(N.ora(o),N.ora(p),N.ora(q),N.ora(r),N.ora(s1),N.ora(t),N.ora(u),N.o
ra(v1));
```

```
p_def=
vertcat(N.defogliazione(o),N.defogliazione(p),N.defogliazione(q),N.defoglia
zione(r),N.defogliazione(s1),N.defogliazione(t),N.defogliazione(u),N.defogl
iazione(v1));
p_gem=
vertcat(N.gemme(o),N.gemme(p),N.gemme(q),N.gemme(r),N.gemme(s1),N.gemme(t),
N.gemme(u),N.gemme(v1));
p_dir=
vertcat(N.diradamento(o),N.diradamento(p),N.diradamento(q),N.diradamento(r)
,N.diradamento(s1),N.diradamento(t),N.diradamento(u),N.diradamento(v1));
p_grap=
vertcat(N.Tgrap(o),N.Tgrap(p),N.Tgrap(q),N.Tgrap(r),N.Tgrap(s1),N.Tgrap(t),
N.Tgrap(u),N.Tgrap(v1));
p_air=
vertcat(N.Tair(o),N.Tair(p),N.Tair(q),N.Tair(r),N.Tair(s1),N.Tair(t),N.Tair
(u),N.Tair(v1));
p_rad=
vertcat(N.Rad(o),N.Rad(p),N.Rad(q),N.Rad(r),N.Rad(s1),N.Rad(t),N.Rad(u),N.R
ad(v1));
p_doy=
vertcat(N.Doy(o),N.Doy(p),N.Doy(q),N.Doy(r),N.Doy(s1),N.Doy(t),N.Doy(u),N.D
oy(v1));

[d_values_air_avg,d_row_air_avg,d_column_air_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmean');
[d_values_air_max,d_row_air_max,d_column_air_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmax');
[d_values_air_min,d_row_air_min,d_column_air_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmin');
[d_values_gra_avg,d_row_gra_avg,d_column_gra_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmean');
[d_values_gra_max,d_row_gra_max,d_column_gra_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmax');
[d_values_gra_min,d_row_gra_min,d_column_gra_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmin');
[d_values_rad_sum,d_row_rad_sum,d_column_rad_sum]=pivottable(p_doy,[p_def
p_gem p_dir],p_rad,'nansum');



%gap-filling e quality check per il 2009 CACCIAGRANDE
if styear==2009
%     %tolgo la GRAPE della T e la imposto come la O
     d_values_gra_avg(:,8)=d_values_gra_avg(:,7);
     d_values_gra_max(:,8)=d_values_gra_max(:,7);
     d_values_gra_min(:,8)=d_values_gra_min(:,7);
     %valori dal 182 della T di cacciagrande mancanti
    d_values_air_avg(1:9,8)=d_values_air_avg(1:9,7);
    d_values_air_max(1:9,8)=d_values_air_max(1:9,7);
    d_values_air_min(1:9,8)=d_values_air_min(1:9,7);
    d_values_gra_avg(1:9,8)=d_values_gra_avg(1:9,7);
    d_values_gra_max(1:9,8)=d_values_gra_max(1:9,7);
    d_values_gra_min(1:9,8)=d_values_gra_min(1:9,7);
    d_values_rad_sum(1:9,8)=d_values_rad_sum(1:9,7);

   %tolgo la P e la imposto come la Q
    d_values_air_avg(:,5)=d_values_air_avg(:,6);
    d_values_air_max(:,5)=d_values_air_max(:,6);
    d_values_air_min(:,5)=d_values_air_min(:,6);
    d_values_gra_avg(:,5)=d_values_gra_avg(:,6);
    d_values_gra_max(:,5)=d_values_gra_max(:,6);
    d_values_gra_min(:,5)=d_values_gra_min(:,6);
    d_values_rad_sum(:,5)=d_values_rad_sum(:,6);
    % ciclo per tutte le slave gap filling aria
    for ixe=1:8
     a_g=d_values_air_avg(:,ixe);
      xi = find(isnan(a_g));
      x = 1:length(a_g);
      D = setdiff(x, xi);
      yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
      a_g(xi) = yi;
      d_values_air_avg(:,ixe)=a_g;
     a_g=d_values_air_max(:,ixe);
```

```
      xi = find(isnan(a g));
      x = 1:length(a_g);
      D = setdiff(x, xi);
      yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
      a_g(xi) = yi;
      d_values_air_max(:,ixe)=a_g;
     a_g=d_values_air_min(:,ixe);
      xi = find(isnan(a_g));
      x = 1:length(a_g);
      D = setdiff(x, xi);
      yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
      a_g(xi) = yi;
      d_values_air_min(:,ixe)=a_g;
    % ciclo per tutte le slave gap filling GRAPE
     g_g=d_values_gra_avg(:,ixe);
      xi = find(isnan(g_g));
      x = 1:length(g_g);
      D = setdiff(x, xi);
      yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
      g_g(xi) = yi;
      d_values_gra_avg(:,ixe)=g_g;
     g_g=d_values_gra_max(:,ixe);
      xi = find(isnan(g_g));
      x = 1:length(g_g);
      D = setdiff(x, xi);
      yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
      g_g(xi) = yi;
      d_values_gra_max(:,ixe)=g_g;
     g_g=d_values_gra_min(:,ixe);
      xi = find(isnan(g_g));
      x = 1:length(g_g);
      D = setdiff(x, xi);
      yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
      g_g(xi) = yi;
      d_values_gra_min(:,ixe)=g_g;
         %gap filling radiazione
     r_g=d_values_rad_sum(:,ixe);
      xi = find(isnan(r_g));
      x = 1:length(r_g);
      D = setdiff(x, xi);
      yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
      r_g(xi) = yi;
      d_values_rad_sum(:,ixe)=r_g;
      %%%%%%%%%%%%%%
    end

%gap-filling e quality check per il 2008 cacciagrande
% if styear==2008
%     %gap filling aria U
%      a g=d_values air avg(:,4);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_avg(:,4)=a_g;
%      a g=d_values air max(:,4);
%       xi = find(isnan(a g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_max(:,4)=a_g;
%      a_g=d_values_air_min(:,4);
%       xi = find(isnan(a g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_min(:,4)=a_g;
%           %gap filling aria T
%      a_g=d_values_air_avg(:,8);
%       xi = find(isnan(a_g));
```

```
%        x = 1:length(a_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%        a_g(xi) = yi;
%        d_values_air_avg(:,8)=a_g;
%       a_g=d_values_air_max(:,8);
%        xi = find(isnan(a_g));
%        x = 1:length(a_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%        a_g(xi) = yi;
%        d_values_air_max(:,8)=a_g;
%       a_g=d_values_air_min(:,8);
%        xi = find(isnan(a_g));
%        x = 1:length(a_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%        a_g(xi) = yi;
%        d_values_air_min(:,8)=a_g;
%     %gap filling grape R
%       g_g=d_values_gra_avg(:,2);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_avg(:,2)=g_g;
%       g_g=d_values_gra_max(:,2);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_max(:,2)=g_g;
%       g_g=d_values_gra_min(:,2);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_min(:,2)=g_g;
%     %gap filling grape U
%       g_g=d_values_gra_avg(:,4);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_avg(:,4)=g_g;
%       g_g=d_values_gra_max(:,4);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_max(:,4)=g_g;
%       g_g=d_values_gra_min(:,4);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_min(:,4)=g_g;
%     %gap filling grape O
%       g_g=d_values_gra_avg(:,7);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_avg(:,7)=g_g;
%       g_g=d_values_gra_max(:,7);
%        xi = find(isnan(g_g));
```

```
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,7)=g_g;
%      g_g=d_values_gra_min(:,7);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,7)=g_g;
%          %gap filling grape T
%      g_g=d_values_gra_avg(:,8);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,8)=g_g;
%      g_g=d_values_gra_max(:,8);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,8)=g_g;
%      g_g=d_values_gra_min(:,8);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,8)=g_g;
%          %gap filling radiazione U
%      r_g=d_values_rad_sum(:,4);
%       xi = find(isnan(r_g));
%       x = 1:length(r_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
%       r_g(xi) = yi;
%       d_values_rad_sum(:,4)=r_g;
%                %gap filling radiazione T
%      r_g=d_values_rad_sum(:,8);
%       xi = find(isnan(r_g));
%       x = 1:length(r_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
%       r_g(xi) = yi;
%       d_values_rad_sum(:,8)=r_g;
%
%       %%%%%%%%%%%%%%
%     %tolgo la p e tutti i suoi parametri li imposto come la q che ha le
stesse due tipologie di def e gem
%     d_values_air_avg(:,5)=d_values_air_avg(:,6);
%     d_values_air_max(:,5)=d_values_air_max(:,6);
%     d_values_air_min(:,5)=d_values_air_min(:,6);
%     d_values_gra_avg(:,5)=d_values_gra_avg(:,6);
%     d_values_gra_max(:,5)=d_values_gra_max(:,6);
%     d_values_gra_min(:,5)=d_values_gra_min(:,6);
%     d_values_rad_sum(:,5)=d_values_rad_sum(:,6);
end

% giorni medi (orari)
[h_values_air_avg,h_row_air_avg,h_column_air_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_air,'nanmean');
[h_values_gra_avg,h_row_gra_avg,h_column_gra_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_grap,'nanmean');
[h_values_rad_avg,h_row_rad_avg,h_column_rad_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_rad,'nanmean');
if styear==2008
    %la p la imposto come la q
    h_values_air_avg(:,5)=h_values_air_avg(:,6);
```

```
    h_values_gra_avg(:,5)=h_values_gra_avg(:,6);
    h_values_rad_avg(:,5)=h_values_rad_avg(:,6);
end
%orari solo def e gem quindi 4 serie
h_values_air_avg_tesi=
horzcat(nanmean(h_values_air_avg(:,1:2),2),nanmean(h_values_air_avg(:,3:4),
2),nanmean(h_values_air_avg(:,5:6),2),nanmean(h_values_air_avg(:,7:8),2));
h_values_gra_avg_tesi=
horzcat(nanmean(h_values_gra_avg(:,1:2),2),nanmean(h_values_gra_avg(:,3:4),
2),nanmean(h_values_gra_avg(:,5:6),2),nanmean(h_values_gra_avg(:,7:8),2));
h_values_rad_avg_tesi=
horzcat(nanmean(h_values_rad_avg(:,1:2),2),nanmean(h_values_rad_avg(:,3:4),
2),nanmean(h_values_rad_avg(:,5:6),2),nanmean(h_values_rad_avg(:,7:8),2));

%giornalieri solo def e gem quindi 4 serie
t_values_air_avg=
horzcat(mean(d_values_air_avg(:,1:2),2),mean(d_values_air_avg(:,3:4),2),mea
n(d_values_air_avg(:,5:6),2),mean(d_values_air_avg(:,7:8),2));
t_values_air_max=
horzcat(mean(d_values_air_max(:,1:2),2),mean(d_values_air_max(:,3:4),2),mea
n(d_values_air_max(:,5:6),2),mean(d_values_air_max(:,7:8),2));
t_values_air_min=
horzcat(mean(d_values_air_min(:,1:2),2),mean(d_values_air_min(:,3:4),2),mea
n(d_values_air_min(:,5:6),2),mean(d_values_air_min(:,7:8),2));
t_values_gra_avg=
horzcat(mean(d_values_gra_avg(:,1:2),2),mean(d_values_gra_avg(:,3:4),2),mea
n(d_values_gra_avg(:,5:6),2),mean(d_values_gra_avg(:,7:8),2));
t_values_gra_max=
horzcat(mean(d_values_gra_max(:,1:2),2),mean(d_values_gra_max(:,3:4),2),mea
n(d_values_gra_max(:,5:6),2),mean(d_values_gra_max(:,7:8),2));
t_values_gra_min=
horzcat(mean(d_values_gra_min(:,1:2),2),mean(d_values_gra_min(:,3:4),2),mea
n(d_values_gra_min(:,5:6),2),mean(d_values_gra_min(:,7:8),2));
t_values_rad_sum=
horzcat(mean(d_values_rad_sum(:,1:2),2),mean(d_values_rad_sum(:,3:4),2),mea
n(d_values_rad_sum(:,5:6),2),mean(d_values_rad_sum(:,7:8),2));

%indici per le tesi def e gem (4 serie nera-verde-rossa-gialla)
air_avg_t=nanmean(t_values_air_avg);
air_max_t=nanmean(t_values_air_max);
air_min_t=nanmean(t_values_air_min);
air_avg_sum_t=nansum(t_values_air_avg);
air_max_sum_t=nansum(t_values_air_max);
air_min_sum_t=nansum(t_values_air_min);
gra_avg_t=nanmean(t_values_gra_avg);
gra_max_t=nanmean(t_values_gra_max);
gra_min_t=nanmean(t_values_gra_min);
gra_avg_sum_t=nansum(t_values_gra_avg);
gra_max_sum_t=nansum(t_values_gra_max);
gra_min_sum_t=nansum(t_values_gra_min);
rad_sum_t=nansum(t_values_rad_sum);

% IW_air
iw_air_nero=sum(t_values_air_avg((t_values_air_avg(:,1)>10),1)-10);
iw_air_verde=sum(t_values_air_avg((t_values_air_avg(:,2)>10),2)-10);
iw_air_rosso=sum(t_values_air_avg((t_values_air_avg(:,3)>10),3)-10);
iw_air_giallo=sum(t_values_air_avg((t_values_air_avg(:,4)>10),4)-10);
iw_air=horzcat(iw_air_nero,iw_air_verde,iw_air_rosso,iw_air_giallo);
% IW_grape
iw_gra_nero=sum(t_values_gra_avg((t_values_gra_avg(:,1)>10),1)-10);
iw_gra_verde=sum(t_values_gra_avg((t_values_gra_avg(:,2)>10),2)-10);
iw_gra_rosso=sum(t_values_gra_avg((t_values_gra_avg(:,3)>10),3)-10);
iw_gra_giallo=sum(t_values_gra_avg((t_values_gra_avg(:,4)>10),4)-10);
iw_gra=horzcat(iw_gra_nero,iw_gra_verde,iw_gra_rosso,iw_gra_giallo);
% IH_air
ih_air_nero=sum(((t_values_air_avg(:,1)-10)+(t_values_air_max(:,1)-10))/2);
ih_air_verde=sum(((t_values_air_avg(:,2)-10)+(t_values_air_max(:,2)-10))
/2);
ih_air_rosso=sum(((t_values_air_avg(:,3)-10)+(t_values_air_max(:,3)-10))
/2);
ih_air_giallo=sum(((t_values_air_avg(:,4)-10)+(t_values_air_max(:,4)-10))
/2);
ih_air=horzcat(ih_air_nero,ih_air_verde,ih_air_rosso,ih_air_giallo);
```

```
% IH grape
ih_gra_nero=sum(((t_values_gra_avg(:,1)-10)+(t_values_gra_max(:,1)-10))/2);
ih_gra_verde=sum(((t_values_gra_avg(:,2)-10)+(t_values_gra_max(:,2)-10))
/2);
ih_gra_rosso=sum(((t_values_gra_avg(:,3)-10)+(t_values_gra_max(:,3)-10))
/2);
ih_gra_giallo=sum(((t_values_gra_avg(:,4)-10)+(t_values_gra_max(:,4)-10))
/2);
ih_gra=horzcat(ih_gra_nero,ih_gra_verde,ih_gra_rosso,ih_gra_giallo);
% SET_air
set_air=sum(t_values_air_max-t_values_air_min);
% SET_grape
set_gra=sum(t_values_gra_max-t_values_gra_min);
% IG_air
% IG_grape
% IFS_air
freddi_air_nero=length(find(t_values_air_min(:,1)<10));
freddi_air_verde=length(find(t_values_air_min(:,2)<10));
freddi_air_rosso=length(find(t_values_air_min(:,3)<10));
freddi_air_giallo=length(find(t_values_air_min(:,4)<10));
ifs_air_nero=sum(t_values_air_max(:,1)-t_values_air_min(:,1))
*(freddi_air_nero+1);
ifs_air_verde=sum(t_values_air_max(:,2)-t_values_air_min(:,2))
*(freddi_air_verde+1);
ifs_air_rosso=sum(t_values_air_max(:,3)-t_values_air_min(:,3))
*(freddi_air_rosso+1);
ifs_air_giallo=sum(t_values_air_max(:,4)-t_values_air_min(:,4))
*(freddi_air_giallo+1);
ifs_air=horzcat(ifs_air_nero,ifs_air_verde,ifs_air_rosso,ifs_air_giallo);

% IFS_grape
freddi_gra_nero=length(find(t_values_gra_min(:,1)<10));
freddi_gra_verde=length(find(t_values_gra_min(:,2)<10));
freddi_gra_rosso=length(find(t_values_gra_min(:,3)<10));
freddi_gra_giallo=length(find(t_values_gra_min(:,4)<10));
ifs_gra_nero=sum(t_values_gra_max(:,1)-t_values_gra_min(:,1))
*(freddi_gra_nero+1);
ifs_gra_verde=sum(t_values_gra_max(:,2)-t_values_gra_min(:,2))
*(freddi_gra_verde+1);
ifs_gra_rosso=sum(t_values_gra_max(:,3)-t_values_gra_min(:,3))
*(freddi_gra_rosso+1);
ifs_gra_giallo=sum(t_values_gra_max(:,4)-t_values_gra_min(:,4))
*(freddi_gra_giallo+1);
ifs_gra=horzcat(ifs_gra_nero,ifs_gra_verde,ifs_gra_rosso,ifs_gra_giallo);
% CoolNI_air
CoolNI_air=air_min_t;
% CoolNI_grape
CoolNI_grap=gra_min_t;
% Morning(03-10)_Index_air
Morning_03_10_Index_air=nanmean(h_values_air_avg_tesi(4:11,:));
% Morning(03-10)_Index_grape
Morning_03_10_Index_grape=nanmean(h_values_gra_avg_tesi(4:11,:));
% Diurnal(11-18)_Index_air
Diurnal_11_18_Index_air=nanmean(h_values_air_avg_tesi(12:19,:));
% Diurnal(11-18)_Index_grape
Diurnal_11_18_Index_grape=nanmean(h_values_gra_avg_tesi(12:19,:));
% Night(19-02)_Index_air
Night_19_02_Index_air=
nanmean(vertcat(h_values_air_avg_tesi(20:24,:),h_values_air_avg_tesi(1:3,:)
));
% Night(19-02)_Index_grape
Night_19_02_Index_grape=
nanmean(vertcat(h_values_gra_avg_tesi(20:24,:),h_values_gra_avg_tesi(1:3,:)
));

MDN_index_air=
vertcat(Morning_03_10_Index_air,Diurnal_11_18_Index_air,Night_19_02_Index_a
ir);
MDN_index_gra=
vertcat(Morning_03_10_Index_grape,Diurnal_11_18_Index_grape,Night_19_02_Ind
ex_grape);

% dMorning_5_10_air=[2.4447 2.2638 2.5846 2.4751];
```

```
% dMorning 5 10 grape=[2.6667 2.3504 2.6263 2.9344];
% dTwilight_15_20_air=[-1.6864 -1.6683 -1.7803 -1.6947];
% dTwilight_15_20_grape=[-1.8974 -1.9125 -1.8355 -2.1824];
% d_index_air=vertcat(dMorning_5_10_air,dTwilight_15_20_air);
% d_index_gra=vertcat(dMorning_5_10_grape,dTwilight_15_20_grape);

dMorning_rate_5_10_air=(h_values_air_avg_tesi(11,:)-
h_values_air_avg_tesi(6,:))/6;
dMorning rate 5 10 grape=(h values_gra_avg_tesi(11,:)-
h_values_gra_avg_tesi(6,:))/6;
dTwilight_rate_15_20_air=(h_values_air_avg_tesi(21,:)-
h_values_air_avg_tesi(16,:))/6;
dTwilight_rate_15_20_grape=(h_values_gra_avg_tesi(21,:)-
h_values_gra_avg_tesi(16,:))/6;
d_index_rate_air=vertcat(dMorning_rate_5_10_air,dTwilight_rate_15_20_air);
d_index_rate_gra=
vertcat(dMorning_rate_5_10_grape,dTwilight_rate_15_20_grape);
% per la master
p_doy_m=N.Doy(mast);
p_air_avg_m=N.Tempmedia(mast);
p_air_max_m=N.Tmax(mast);
p_air_min_m=N.Tmin(mast);
p_rad_avg_m=N.RadGmedia(mast);
p_666=N.defogliazione(mast);
[d values master air avg,d row master air avg,d column_master_air_avg]=
pivottable(p_doy_m,p_666,p_air_avg_m,'nanmean');
[d_values_master_air_max,d_row_master_air_max,d_column_master_air_max]=
pivottable(p_doy_m,p_666,p_air_max_m,'nanmax');
[d_values_master_air_min,d_row_master_air_min,d_column_master_air_min]=
pivottable(p_doy_m,p_666,p_air_min_m,'nanmin');
[d_values_master_rad_sum,d_row_rad_sum,d_column_rad_sum]=
pivottable(p_doy_m,p_666,p_rad_avg_m,'nansum');

[h_values_ms,h_row_ms,h_column_ms]=pivottable(p_ora,[p_666
p_666],p_air_avg_m,'nanmean');

% Master_IW
master_iw=sum(d_values_master_air_avg((d_values_master_air_avg>10),1)-10);
% Master_IH
master_ih=sum(((d_values_master_air_avg-10)+(d_values_master_air_max-10))
/2);
% Master_SET
master_set=sum(d_values_master_air_max-d_values_master_air_min);
% Master_IG
% Master_IFS
freddi_master=length(find(d_values_master_air_min<10));
master_ifs=sum(d_values_master_air_max-d_values_master_air_min)
*(freddi_master+1);
% Master CoolNI
master cooln=nanmean(d_values_master_air_min);
%matrice indici totale
matrix_index_slave_air=
vertcat(air_avg_t,air_max_t,air_min_t,air_avg_sum_t,air_max_sum_t,air_min_s
um_t,iw_air,ih_air,set_air,ifs_air,CoolNI_air,MDN_index_air,d_index_rate_ai
r);
matrix_index_slave_gra=
vertcat(rad sum t,gra avg t,gra max t,gra min t,gra avg sum t,gra max sum t
,gra min sum t,iw_gra,ih_gra,set_gra,ifs_gra,CoolNI_grap,MDN_index_gra,d_in
dex_rate_gra);
matrix_index_master=
horzcat(master_iw,master_ih,master_set,master_ifs,master_cooln);

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
figure('name','pivot tgrape alta vigoria')
hold on
plot(h row gra avg,h values gra avg tesi(:,1),'k+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot tair alta vigoria')
hold on
```

```
plot(h_row_air_avg,h_values_air_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot RAD alta vigoria')
hold on
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)


elseif v==4 %cortigliano

sname1=['Tair Master vs Tair Slave'];
eval(['figure(''Name'', sname1 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tair';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])
%
sname2=['Tair Master vs Tgrape Slave'];
eval(['figure(''Name'', sname2 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tgrap';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k-.'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(d),' s '(d),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])

sname22=['Tair Master vs Tleaf Slave'];
eval(['figure(''Name'', sname22 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tleaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])


sname3=['precipitazioni Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname3 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.Bagn leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''b+-'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])

sname4=['precipitazioni Master vs potenziale idrico 30 cm Slave'];
eval(['figure(''Name'', sname4 )'])
grid on
hold on
ss=N.Piogsomma/100;
s='N.T_heatsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['bar(N.JDTpc(mast),ss(mast),''r'',''BarWidth'',0.6)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master/100'',''A'',''E'',''H'',''I'',''L'',-1)'])

sname5=['precipitazioni Master vs potenziale idrico 60 cm Slave'];
eval(['figure(''Name'', sname5 )'])
grid on
hold on
ss=N.Piogsomma/100;
s='N.T_heatsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['bar(N.JDTpc(mast),ss(mast),''r'',''BarWidth'',0.6)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master/100'',''A'',''E'',''H'',''I'',''L'',-1)'])

sname6=['vento Master vs vento Slave'];
eval(['figure(''Name'', sname6 )'])
grid on
hold on
ss='N.VVent1Vmed';
s='N.VV';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==3 & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''c+-'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''C'',''E'',''G'',''I'',''L'',-1)'])

sname7=['radiazione Master vs radiazione Slave'];
eval(['figure(''Name'', sname7 )'])
grid on
hold on
ss='N.RadGmedia';
```

```
s='N.Rad';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])


sname8=['Tair Master vs Tgrape2 Slave'];
eval(['figure(''Name'', sname8 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''B'',''C'',''D'',''F'',''G'',-1)'])

sname9=['Tair Master vs Tgrape3 Slave'];
eval(['figure(''Name'', sname9 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''B'',''C'',''D'',''F'',''G'',-1)'])

%pivot solo HV
p_ora=
vertcat(N.ora(a),N.ora(b),N.ora(c),N.ora(d),N.ora(e),N.ora(f),N.ora(g),N.or
```

```
a(h));
p_def=
vertcat(N.defogliazione(a),N.defogliazione(b),N.defogliazione(c),N.defoglia
zione(d),N.defogliazione(e),N.defogliazione(f),N.defogliazione(g),N.defogli
azione(h));
p_gem=
vertcat(N.gemme(a),N.gemme(b),N.gemme(c),N.gemme(d),N.gemme(e),N.gemme(f),N
.gemme(g),N.gemme(h));
p_dir=
vertcat(N.diradamento(a),N.diradamento(b),N.diradamento(c),N.diradamento(d)
,N.diradamento(e),N.diradamento(f),N.diradamento(g),N.diradamento(h));
p_grap=
vertcat(N.Tgrap(a),N.Tgrap(b),N.Tgrap(c),N.Tgrap(d),N.Tgrap(e),N.Tgrap(f),N
.Tgrap(g),N.Tgrap(h));
p_air=
vertcat(N.Tair(a),N.Tair(b),N.Tair(c),N.Tair(d),N.Tair(e),N.Tair(f),N.Tair(
g),N.Tair(h));
p_rad=
vertcat(N.Rad(a),N.Rad(b),N.Rad(c),N.Rad(d),N.Rad(e),N.Rad(f),N.Rad(g),N.Ra
d(h));
p_doy=
vertcat(N.Doy(a),N.Doy(b),N.Doy(c),N.Doy(d),N.Doy(e),N.Doy(f),N.Doy(g),N.Do
y(h));


[d_values_air_avg,d_row_air_avg,d_column_air_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmean');
[d_values_air_max,d_row_air_max,d_column_air_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmax');
[d_values_air_min,d_row_air_min,d_column_air_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmin');
[d_values_gra_avg,d_row_gra_avg,d_column_gra_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmean');
[d_values_gra_max,d_row_gra_max,d_column_gra_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmax');
[d_values_gra_min,d_row_gra_min,d_column_gra_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmin');
[d_values_rad_sum,d_row_rad_sum,d_column_rad_sum]=pivottable(p_doy,[p_def
p_gem p_dir],p_rad,'nansum');

%gap-filling e quality check per il 2009 CORTIGLIANO
if styear==2009
%     %tolgo la E
     d_values_air_avg(:,3)=d_values_air_avg(:,4);
     d_values_air_max(:,3)=d_values_air_max(:,4);
     d_values_air_min(:,3)=d_values_air_min(:,4);
     d_values_gra_avg(:,3)=d_values_gra_avg(:,4);
     d_values_gra_max(:,3)=d_values_gra_max(:,4);
     d_values_gra_min(:,3)=d_values_gra_min(:,4);
     d_values_rad_sum(:,3)=d_values_rad_sum(:,4);
     %valori dal 182 della L di cortilgiano mancanti
    d_values_air_avg(1:9,8)=d_values_air_avg(1:9,7);
    d_values_air_max(1:9,8)=d_values_air_max(1:9,7);
    d_values_air_min(1:9,8)=d_values_air_min(1:9,7);
    d_values_gra_avg(1:9,8)=d_values_gra_avg(1:9,7);
    d_values_gra_max(1:9,8)=d_values_gra_max(1:9,7);
    d_values_gra_min(1:9,8)=d_values_gra_min(1:9,7);
    d_values_rad_sum(1:9,8)=d_values_rad_sum(1:9,7);

   %tolgo la D
    d_values_air_avg(:,5)=d_values_air_avg(:,6);
    d_values_air_max(:,5)=d_values_air_max(:,6);
    d_values_air_min(:,5)=d_values_air_min(:,6);
    d_values_gra_avg(:,5)=d_values_gra_avg(:,6);
    d_values_gra_max(:,5)=d_values_gra_max(:,6);
    d_values_gra_min(:,5)=d_values_gra_min(:,6);
    d_values_rad_sum(:,5)=d_values_rad_sum(:,6);
    % ciclo per tutte le slave gap filling aria
    for ixe=1:8
     a_g=d_values_air_avg(:,ixe);
      xi = find(isnan(a_g));
      x = 1:length(a_g);
      D = setdiff(x, xi);
```

```
      yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
      a_g(xi) = yi;
      d_values_air_avg(:,ixe)=a_g;
     a_g=d_values_air_max(:,ixe);
      xi = find(isnan(a_g));
      x = 1:length(a_g);
      D = setdiff(x, xi);
      yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
      a_g(xi) = yi;
      d_values_air_max(:,ixe)=a_g;
     a_g=d_values_air_min(:,ixe);
      xi = find(isnan(a_g));
      x = 1:length(a_g);
      D = setdiff(x, xi);
      yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
      a_g(xi) = yi;
      d_values_air_min(:,ixe)=a_g;
    % ciclo per tutte le slave gap filling GRAPE
     g_g=d_values_gra_avg(:,ixe);
      xi = find(isnan(g_g));
      x = 1:length(g_g);
      D = setdiff(x, xi);
      yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
      g_g(xi) = yi;
      d_values_gra_avg(:,ixe)=g_g;
     g_g=d_values_gra_max(:,ixe);
      xi = find(isnan(g_g));
      x = 1:length(g_g);
      D = setdiff(x, xi);
      yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
      g_g(xi) = yi;
      d_values_gra_max(:,ixe)=g_g;
     g_g=d_values_gra_min(:,ixe);
      xi = find(isnan(g_g));
      x = 1:length(g_g);
      D = setdiff(x, xi);
      yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
      g_g(xi) = yi;
      d_values_gra_min(:,ixe)=g_g;
         %gap filling radiazione
     r_g=d_values_rad_sum(:,ixe);
      xi = find(isnan(r_g));
      x = 1:length(r_g);
      D = setdiff(x, xi);
      yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
      r_g(xi) = yi;
      d_values_rad_sum(:,ixe)=r_g;
      %%%%%%%%%%%%%%
    end


% %gap-filling e quality check per il 2008 cortigliano
% if styear==2008
%     %gap filling aria H
%      a_g=d_values_air_avg(:,2);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_avg(:,2)=a_g;
%      a_g=d_values_air_max(:,2);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_max(:,2)=a_g;
%      a_g=d_values_air_min(:,2);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
```

```
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_min(:,2)=a_g;
%           %gap filling aria C
%      a_g=d_values_air_avg(:,1);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_avg(:,1)=a_g;
%      a_g=d_values_air_max(:,1);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a g(xi) = yi;
%       d_values_air_max(:,1)=a_g;
%      a_g=d_values_air_min(:,1);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values air min(:,1)=a_g;
%    %gap filling grape E
%      g_g=d_values_gra_avg(:,3);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d values gra avg(:,3)=g g;
%      g_g=d_values_gra_max(:,3);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,3)=g_g;
%      g g=d_values gra min(:,3);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,3)=g_g;
%    %gap filling grape D
%      g g=d_values gra avg(:,5);
%       xi = find(isnan(g g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,5)=g_g;
%      g_g=d_values_gra_max(:,5);
%       xi = find(isnan(g g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,5)=g_g;
%      g_g=d_values_gra_min(:,5);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,5)=g_g;
%    %gap filling grape F
%      g_g=d_values_gra_avg(:,6);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
```

```
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,6)=g_g;
%      g_g=d_values_gra_max(:,6);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,6)=g_g;
%      g_g=d_values_gra_min(:,6);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,6)=g_g;
%          %gap filling radiazione H
%      r_g=d_values_rad_sum(:,2);
%       xi = find(isnan(r_g));
%       x = 1:length(r_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
%       r_g(xi) = yi;
%       d_values_rad_sum(:,2)=r_g;
%       %%%%%%%%%%%%%%
%     %tolgo la g e tutti i suoi parametri li imposto come la b che ha le
stesse due tipologie di def e gem
%     d_values_air_avg(:,8)=d_values_air_avg(:,7);
%     d_values_air_max(:,8)=d_values_air_max(:,7);
%     d_values_air_min(:,8)=d_values_air_min(:,7);
%     d_values_gra_avg(:,8)=d_values_gra_avg(:,7);
%     d_values_gra_max(:,8)=d_values_gra_max(:,7);
%     d_values_gra_min(:,8)=d_values_gra_min(:,7);
%     d_values_rad_sum(:,8)=d_values_rad_sum(:,7);
end

% giorni medi (orari)
[h_values_air_avg,h_row_air_avg,h_column_air_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_air,'nanmean');
[h_values_gra_avg,h_row_gra_avg,h_column_gra_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_grap,'nanmean');
[h_values_rad_avg,h_row_rad_avg,h_column_rad_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_rad,'nanmean');
if styear==2008
    %la I la imposto come la M
    h_values_air_avg(:,8)=h_values_air_avg(:,7);
    h_values_gra_avg(:,8)=h_values_gra_avg(:,7);
    h_values_rad_avg(:,8)=h_values_rad_avg(:,7);
end
%orari solo def e gem quindi 4 serie
h_values_air_avg_tesi=
horzcat(nanmean(h_values_air_avg(:,1:2),2),nanmean(h_values_air_avg(:,3:4),
2),nanmean(h_values_air_avg(:,5:6),2),nanmean(h_values_air_avg(:,7:8),2));
h_values_gra_avg_tesi=
horzcat(nanmean(h_values_gra_avg(:,1:2),2),nanmean(h_values_gra_avg(:,3:4),
2),nanmean(h_values_gra_avg(:,5:6),2),nanmean(h_values_gra_avg(:,7:8),2));
h_values_rad_avg_tesi=
horzcat(nanmean(h_values_rad_avg(:,1:2),2),nanmean(h_values_rad_avg(:,3:4),
2),nanmean(h_values_rad_avg(:,5:6),2),nanmean(h_values_rad_avg(:,7:8),2));

%giornalieri solo def e gem quindi 4 serie
t_values_air_avg=
horzcat(mean(d_values_air_avg(:,1:2),2),mean(d_values_air_avg(:,3:4),2),mea
n(d_values_air_avg(:,5:6),2),mean(d_values_air_avg(:,7:8),2));
t_values_air_max=
horzcat(mean(d_values_air_max(:,1:2),2),mean(d_values_air_max(:,3:4),2),mea
n(d_values_air_max(:,5:6),2),mean(d_values_air_max(:,7:8),2));
t_values_air_min=
horzcat(mean(d_values_air_min(:,1:2),2),mean(d_values_air_min(:,3:4),2),mea
n(d_values_air_min(:,5:6),2),mean(d_values_air_min(:,7:8),2));
t_values_gra_avg=
```

```
horzcat(mean(d_values_gra_avg(:,1:2),2),mean(d_values_gra_avg(:,3:4),2),mea
n(d_values_gra_avg(:,5:6),2),mean(d_values_gra_avg(:,7:8),2));
t_values_gra_max=
horzcat(mean(d_values_gra_max(:,1:2),2),mean(d_values_gra_max(:,3:4),2),mea
n(d_values_gra_max(:,5:6),2),mean(d_values_gra_max(:,7:8),2));
t_values_gra_min=
horzcat(mean(d_values_gra_min(:,1:2),2),mean(d_values_gra_min(:,3:4),2),mea
n(d_values_gra_min(:,5:6),2),mean(d_values_gra_min(:,7:8),2));
t_values_rad_sum=
horzcat(mean(d_values_rad_sum(:,1:2),2),mean(d_values_rad_sum(:,3:4),2),mea
n(d_values_rad_sum(:,5:6),2),mean(d_values_rad_sum(:,7:8),2));

%indici per le tesi def e gem (4 serie nera-verde-rossa-gialla)
air_avg_t=nanmean(t_values_air_avg);
air_max_t=nanmean(t_values_air_max);
air_min_t=nanmean(t_values_air_min);
air_avg_sum_t=nansum(t_values_air_avg);
air_max_sum_t=nansum(t_values_air_max);
air_min_sum_t=nansum(t_values_air_min);
gra_avg_t=nanmean(t_values_gra_avg);
gra_max_t=nanmean(t_values_gra_max);
gra_min_t=nanmean(t_values_gra_min);
gra_avg_sum_t=nansum(t_values_gra_avg);
gra_max_sum_t=nansum(t_values_gra_max);
gra_min_sum_t=nansum(t_values_gra_min);
rad_sum_t=nansum(t_values_rad_sum);

% IW_air
iw_air_nero=sum(t_values_air_avg((t_values_air_avg(:,1)>10),1)-10);
iw_air_verde=sum(t_values_air_avg((t_values_air_avg(:,2)>10),2)-10);
iw_air_rosso=sum(t_values_air_avg((t_values_air_avg(:,3)>10),3)-10);
iw_air_giallo=sum(t_values_air_avg((t_values_air_avg(:,4)>10),4)-10);
iw_air=horzcat(iw_air_nero,iw_air_verde,iw_air_rosso,iw_air_giallo);
% IW_grape
iw_gra_nero=sum(t_values_gra_avg((t_values_gra_avg(:,1)>10),1)-10);
iw_gra_verde=sum(t_values_gra_avg((t_values_gra_avg(:,2)>10),2)-10);
iw_gra_rosso=sum(t_values_gra_avg((t_values_gra_avg(:,3)>10),3)-10);
iw_gra_giallo=sum(t_values_gra_avg((t_values_gra_avg(:,4)>10),4)-10);
iw_gra=horzcat(iw_gra_nero,iw_gra_verde,iw_gra_rosso,iw_gra_giallo);
% IH_air
ih_air_nero=sum(((t_values_air_avg(:,1)-10)+(t_values_air_max(:,1)-10))/2);
ih_air_verde=sum(((t_values_air_avg(:,2)-10)+(t_values_air_max(:,2)-10))
/2);
ih_air_rosso=sum(((t_values_air_avg(:,3)-10)+(t_values_air_max(:,3)-10))
/2);
ih_air_giallo=sum(((t_values_air_avg(:,4)-10)+(t_values_air_max(:,4)-10))
/2);
ih_air=horzcat(ih_air_nero,ih_air_verde,ih_air_rosso,ih_air_giallo);
% IH_grape
ih_gra_nero=sum(((t_values_gra_avg(:,1)-10)+(t_values_gra_max(:,1)-10))/2);
ih_gra_verde=sum(((t_values_gra_avg(:,2)-10)+(t_values_gra_max(:,2)-10))
/2);
ih_gra_rosso=sum(((t_values_gra_avg(:,3)-10)+(t_values_gra_max(:,3)-10))
/2);
ih_gra_giallo=sum(((t_values_gra_avg(:,4)-10)+(t_values_gra_max(:,4)-10))
/2);
ih_gra=horzcat(ih_gra_nero,ih_gra_verde,ih_gra_rosso,ih_gra_giallo);
% SET_air
set_air=sum(t_values_air_max-t_values_air_min);
% SET_grape
set_gra=sum(t_values_gra_max-t_values_gra_min);
% IG_air
% IG_grape
% IFS_air
freddi_air_nero=length(find(t_values_air_min(:,1)<10));
freddi_air_verde=length(find(t_values_air_min(:,2)<10));
freddi_air_rosso=length(find(t_values_air_min(:,3)<10));
freddi_air_giallo=length(find(t_values_air_min(:,4)<10));
ifs_air_nero=sum(t_values_air_max(:,1)-t_values_air_min(:,1))
*(freddi_air_nero+1);
ifs_air_verde=sum(t_values_air_max(:,2)-t_values_air_min(:,2))
*(freddi_air_verde+1);
ifs_air_rosso=sum(t_values_air_max(:,3)-t_values_air_min(:,3))
```

```
*(freddi_air_rosso+1);
ifs_air_giallo=sum(t_values_air_max(:,4)-t_values_air_min(:,4))
*(freddi_air_giallo+1);
ifs_air=horzcat(ifs_air_nero,ifs_air_verde,ifs_air_rosso,ifs_air_giallo);

% IFS_grape
freddi_gra_nero=length(find(t_values_gra_min(:,1)<10));
freddi_gra_verde=length(find(t_values_gra_min(:,2)<10));
freddi_gra_rosso=length(find(t_values_gra_min(:,3)<10));
freddi_gra_giallo=length(find(t_values_gra_min(:,4)<10));
ifs_gra_nero=sum(t_values_gra_max(:,1)-t_values_gra_min(:,1))
*(freddi_gra_nero+1);
ifs_gra_verde=sum(t_values_gra_max(:,2)-t_values_gra_min(:,2))
*(freddi_gra_verde+1);
ifs_gra_rosso=sum(t_values_gra_max(:,3)-t_values_gra_min(:,3))
*(freddi_gra_rosso+1);
ifs_gra_giallo=sum(t_values_gra_max(:,4)-t_values_gra_min(:,4))
*(freddi_gra_giallo+1);
ifs_gra=horzcat(ifs_gra_nero,ifs_gra_verde,ifs_gra_rosso,ifs_gra_giallo);
% CoolNI_air
CoolNI_air=air_min_t;
% CoolNI_grape
CoolNI_grap=gra_min_t;
% Morning(03-10)_Index_air
Morning_03_10_Index_air=nanmean(h_values_air_avg_tesi(4:11,:));
% Morning(03-10)_Index_grape
Morning_03_10_Index_grape=nanmean(h_values_gra_avg_tesi(4:11,:));
% Diurnal(11-18)_Index_air
Diurnal_11_18_Index_air=nanmean(h_values_air_avg_tesi(12:19,:));
% Diurnal(11-18)_Index_grape
Diurnal_11_18_Index_grape=nanmean(h_values_gra_avg_tesi(12:19,:));
% Night(19-02)_Index_air
Night_19_02_Index_air=
nanmean(vertcat(h_values_air_avg_tesi(20:24,:),h_values_air_avg_tesi(1:3,:)
));
% Night(19-02)_Index_grape
Night_19_02_Index_grape=
nanmean(vertcat(h_values_gra_avg_tesi(20:24,:),h_values_gra_avg_tesi(1:3,:)
));

MDN_index_air=
vertcat(Morning_03_10_Index_air,Diurnal_11_18_Index_air,Night_19_02_Index_a
ir);
MDN_index_gra=
vertcat(Morning_03_10_Index_grape,Diurnal_11_18_Index_grape,Night_19_02_Ind
ex_grape);

% dMorning_5_10_air=[2.9376 2.9804 2.9436 2.9687];
% dMorning_5_10_grape=[2.1089 2.1664 2.2037 2.8037];
% dTwilight_15_20_air=[-1.8499 -1.8052 -1.8686 -1.9616];
% dTwilight_15_20_grape=[-2.2782 -2.249 -2.4021 -2.4053];
% d_index_air=vertcat(dMorning_5_10_air,dTwilight_15_20_air);
% d_index_gra=vertcat(dMorning_5_10_grape,dTwilight_15_20_grape);

dMorning_rate_5_10_air=(h_values_air_avg_tesi(11,:)-
h_values_air_avg_tesi(6,:))/6;
dMorning_rate_5_10_grape=(h_values_gra_avg_tesi(11,:)-
h_values_gra_avg_tesi(6,:))/6;
dTwilight_rate_15_20_air=(h_values_air_avg_tesi(21,:)-
h_values_air_avg_tesi(16,:))/6;
dTwilight_rate_15_20_grape=(h_values_gra_avg_tesi(21,:)-
h_values_gra_avg_tesi(16,:))/6;
d_index_rate_air=vertcat(dMorning_rate_5_10_air,dTwilight_rate_15_20_air);
d_index_rate_gra=
vertcat(dMorning_rate_5_10_grape,dTwilight_rate_15_20_grape);
% per la master
p_doy_m=N.Doy(mast);
p_air_avg_m=N.Tempmedia(mast);
p_air_max_m=N.Tmax(mast);
p_air_min_m=N.Tmin(mast);
p_rad_avg_m=N.RadGmedia(mast);
p_666=N.defogliazione(mast);
[d_values_master_air_avg,d_row_master_air_avg,d_column_master_air_avg]=
```

```
pivottable(p_doy_m,p_666,p_air_avg_m,'nanmean');
[d_values_master_air_max,d_row_master_air_max,d_column_master_air_max]=
pivottable(p_doy_m,p_666,p_air_max_m,'nanmax');
[d_values_master_air_min,d_row_master_air_min,d_column_master_air_min]=
pivottable(p_doy_m,p_666,p_air_min_m,'nanmin');
[d_values_master_rad_sum,d_row_rad_sum,d_column_rad_sum]=
pivottable(p_doy_m,p_666,p_rad_avg_m,'nansum');

[h_values_ms,h_row_ms,h_column_ms]=pivottable(p_ora,[p_666
p_666],p_air_avg_m,'nanmean');

% Master_IW
master_iw=sum(d_values_master_air_avg((d_values_master_air_avg>10),1)-10);
% Master_IH
master_ih=sum(((d_values_master_air_avg-10)+(d_values_master_air_max-10))
/2);
% Master SET
master_set=sum(d_values_master_air_max-d_values_master_air_min);
% Master_IG
% Master_IFS
freddi_master=length(find(d_values_master_air_min<10));
master_ifs=sum(d_values_master_air_max-d_values_master_air_min)
*(freddi_master+1);
% Master_CoolNI
master_cooln=nanmean(d_values_master_air_min);
%matrice indici totale
matrix_index_slave_air=
vertcat(air_avg_t,air_max_t,air_min_t,air_avg_sum_t,air_max_sum_t,air_min_s
um_t,iw_air,ih_air,set_air,ifs_air,CoolNI_air,MDN_index_air,d_index_rate_ai
r);
matrix_index_slave_gra=
vertcat(rad_sum_t,gra_avg_t,gra_max_t,gra_min_t,gra_avg_sum_t,gra_max_sum_t
,gra_min_sum_t,iw_gra,ih_gra,set_gra,ifs_gra,CoolNI_grap,MDN_index_gra,d_in
dex_rate_gra);
matrix_index_master=
horzcat(master_iw,master_ih,master_set,master_ifs,master_cooln);

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
figure('name','pivot tgrape alta vigoria')
hold on
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot tair alta vigoria')
hold on
plot(h_row_air_avg,h_values_air_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot RAD alta vigoria')
hold on
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)

end
```

```
loadde=input('carico il file dat ?? si(1) no(2) ');
if loadde==1
clear all;
close all;
clc;
choice=input('2010 no despike(0) - NO despike 2008(1)-CALIBRATI(2)-
DESPIKING 2009(3)-DESPIKING 2008(4)- despike 2010(5): ');
if choice==1
File_wrk=['C:\TUSCANIA\MATRICE_Dati_Tuscania\MATRICI
2008\5_DATASET_2008_FINALE\Tuscania_dataset_HY_2008_CALIBRATI.dat'];
elseif choice==2
File_wrk=['C:\TUSCANIA\MATRICE_Dati_Tuscania\MATRICI
2009\Tuscania_dataset_HY_2009_pre_despike.dat'];
elseif choice==3
File_wrk=['C:\TUSCANIA\MATRICE_Dati_Tuscania\MATRICI
2009\Tuscania_dataset_HY_2009_despike.dat'];
elseif choice==4
File_wrk=['C:\TUSCANIA\MATRICE_Dati_Tuscania\MATRICI
2008\5_DATASET_2008_FINALE\Tuscania_dataset_HY_2008_index.dat'];
elseif choice==0
File_wrk=['C:\TUSCANIA\DATI_2010\Tuscania_dataset_HY_2010.dat'];
elseif choice==5
File_wrk=['C:\TUSCANIA\DATI_2010\Tuscania_dataset_HY_2010_desp.dat'];
end
N=dload(File_wrk);
end
gi = input('Giorno iniziale (doy es 18200): ');
gf = input('Giorno finale (doy es 25800): ');
styear=input('Anno: ');
v=input('Vigneto Brolio(1)-Donna Olimpia(2)-MortelleA Cacciagrande(3)-
MortelleB Cortigliano(4): ');
delta=((gf-gi)/100)+1;
%fattori di conversione

%potenziale idrico
Tasterisco30=(3.15-N.T_heatsoil1)/(3.15-0.75);
N.T_heatsoil1=-0.056*(Tasterisco30.^(-1/0.45)-1);
Tasterisco60=(3.15-N.T_heatsoil2)/(3.15-0.75);
N.T_heatsoil2=-0.056*(Tasterisco60.^(-1/0.45)-1);

%radiazione da integrale giornaliera w m-2 a MJ m-2
%N.Rad=N.Rad*3600/1000000;

%ANEMOMETRI SLAVE
N.VV=24*N.VV;

if v==1
sname1=['Tair Master vs Tair Slave'];
eval(['figure(''Name'', sname1 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tair';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])
%
sname2=['Tair Master vs Tgrape Slave'];
eval(['figure(''Name'', sname2 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tgrap';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])

% sname22=['Tair Master vs Tleaf Slave'];
% eval(['figure(''Name'', sname22 )'])
% grid on
% hold on
% ss='N.Tempmedia';
% s='N.Tleaf';
% mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
% a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==
6);
% b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==
4);
% c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==
5);
% d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==
1);
% e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==
1);
% f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==
1);
% g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==
1);
% h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==
1);
% i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==
1);
% l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==
1);
% m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==
1);
% eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
```

```
% eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
%
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])


sname3=['precipitazioni Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname3 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.Bagn_leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])

sname4=['precipitazioni Master vs potenziale idrico 30 cm Slave'];
eval(['figure(''Name'', sname4 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil1';
sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])

eval(['plot(N.JDTpc(mast), sss(mast),''r+-'',''LineWidth'',2)'])

eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''airMaster'',''A'',''B'',''C'',''D'',''M'',-1)'])

sname5=['precipitazioni Master vs potenziale idrico 60 cm Slave'];
eval(['figure(''Name'', sname5 )'])
grid on
```

```
hold on
ss='N.Piogsomma';
s='N.T_heatsoil2';
sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(mast), sss(mast),''r+-'',''LineWidth'',2)'])

eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''airMaster'',''A'',''B'',''C'',''D'',''M'',-1)'])

% sname6=['vento Master vs vento Slave'];
% eval(['figure(''Name'', sname6 )'])
% grid on
% hold on
% ss='N.VVent1Vmed';
% s='N.VV';
% mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
% a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==
6);
% b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==
4);
% c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==
5);
% d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==
1);
% f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==
1);
% h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==
1);
% l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==
1);
% eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(f),' s '(f),''b-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(h),' s '(h),''m-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(l),' s '(l),''r-.'',''LineWidth'',2)'])
% eval(['legend(''Master'',''A'',''B'',''C'',''D'',''F'',''H'',''L'',-1)'])

sname7=['radiazione Master vs radiazione Slave'];
eval(['figure(''Name'', sname7 )'])
grid on
hold on
ss='N.RadGmedia';
s='N.Rad';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''b-o'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',''M'',-1)'])


% sname8=['Tair Master vs Tgrape2 Slave'];
% eval(['figure(''Name'', sname8 )'])
% grid on
% hold on
% ss='N.Tempmedia';
% s='N.Tsoil1';
% e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==
1);
% f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==
1);
% g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==
1);
% h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==
1);
% i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==
1);
% l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==
1);
% eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
% eval(['legend(''Master'',''E'',''F'',''G'',''H'',''I'',''L'',-1)'])
%
% sname9=['Tair Master vs Tgrape3 cm Slave'];
% eval(['figure(''Name'', sname9 )'])
% grid on
% hold on
% ss='N.Tempmedia';
% s='N.Tsoil2';
% e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==
1);
% f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==
1);
% g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==
1);
% h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==
1);
% i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==
1);
% l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==
1);
% eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(e),' s '(e),''r+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(f),' s '(f),''y+-'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(g),' s '(g),''r-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(h),' s '(h),''g-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(i),' s '(i),''k-.'',''LineWidth'',2)'])
% eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
% eval(['legend(''Master'',''E'',''F'',''G'',''H'',''I'',''L'',-1)'])

%pivot solo HV

p_ora=
vertcat(N.ora(d),N.ora(e),N.ora(f),N.ora(g),N.ora(h),N.ora(i),N.ora(l),N.or
a(m));
p_def=
vertcat(N.defogliazione(d),N.defogliazione(e),N.defogliazione(f),N.defoglia
```

```
zione(g),N.defogliazione(h),N.defogliazione(i),N.defogliazione(l),N.defogli
azione(m));
p_gem=
vertcat(N.gemme(d),N.gemme(e),N.gemme(f),N.gemme(g),N.gemme(h),N.gemme(i),N
.gemme(l),N.gemme(m));
p_dir=
vertcat(N.diradamento(d),N.diradamento(e),N.diradamento(f),N.diradamento(g)
,N.diradamento(h),N.diradamento(i),N.diradamento(l),N.diradamento(m));
p_grap=
vertcat(N.Tgrap(d),N.Tgrap(e),N.Tgrap(f),N.Tgrap(g),N.Tgrap(h),N.Tgrap(i),N
.Tgrap(l),N.Tgrap(m));
p_air=
vertcat(N.Tair(d),N.Tair(e),N.Tair(f),N.Tair(g),N.Tair(h),N.Tair(i),N.Tair(
l),N.Tair(m));
p_rad=
vertcat(N.Rad(d),N.Rad(e),N.Rad(f),N.Rad(g),N.Rad(h),N.Rad(i),N.Rad(l),N.Ra
d(m));
p_doy=
vertcat(N.Doy(d),N.Doy(e),N.Doy(f),N.Doy(g),N.Doy(h),N.Doy(i),N.Doy(l),N.Do
y(m));


[d_values_air_avg,d_row_air_avg,d_column_air_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmean');
[d_values_air_max,d_row_air_max,d_column_air_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmax');
[d_values_air_min,d_row_air_min,d_column_air_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmin');
[d_values_gra_avg,d_row_gra_avg,d_column_gra_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmean');
[d_values_gra_max,d_row_gra_max,d_column_gra_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmax');
[d_values_gra_min,d_row_gra_min,d_column_gra_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmin');
[d_values_rad_sum,d_row_rad_sum,d_column_rad_sum]=pivottable(p_doy,[p_def
p_gem p_dir],p_rad,'nansum');

% %gap-filling e quality check per il 2009 BROLIO
% if styear==2009
%     %valori dal 182 della M di brolio mancanti
%     d_values_air_avg(1:9,1)=d_values_air_avg(1:9,2);
%     d_values_air_max(1:9,1)=d_values_air_max(1:9,2);
%     d_values_air_min(1:9,1)=d_values_air_min(1:9,2);
%     d_values_gra_avg(1:9,1)=d_values_gra_avg(1:9,2);
%     d_values_gra_max(1:9,1)=d_values_gra_max(1:9,2);
%     d_values_gra_min(1:9,1)=d_values_gra_min(1:9,2);
%     d_values_rad_sum(1:9,1)=d_values_rad_sum(1:9,2);
%
%     % ciclo per tutte le slave gap filling aria
%     for ixe=1:8
%      a_g=d_values_air_avg(:,ixe);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_avg(:,ixe)=a_g;
%      a_g=d_values_air_max(:,ixe);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_max(:,ixe)=a_g;
%      a_g=d_values_air_min(:,ixe);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_min(:,ixe)=a_g;
%     % ciclo per tutte le slave gap filling GRAPE
%      g_g=d_values_gra_avg(:,ixe);
```

```
%        xi = find(isnan(g g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_avg(:,ixe)=g_g;
%       g_g=d_values_gra_max(:,ixe);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_max(:,ixe)=g_g;
%       g_g=d_values_gra_min(:,ixe);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_min(:,ixe)=g_g;
%           %gap filling radiazione
%       r_g=d_values_rad_sum(:,ixe);
%        xi = find(isnan(r_g));
%        x = 1:length(r_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
%        r_g(xi) = yi;
%        d_values_rad_sum(:,ixe)=r_g;
%        %%%%%%%%%%%%%
%      end
%gap-filling e quality check per il 2008 BROLIO
% if styear==2008
%      %gap filling aria
%       a_g=d_values_air_avg(:,6);
%        xi = find(isnan(a_g));
%        x = 1:length(a_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%        a_g(xi) = yi;
%        d_values_air_avg(:,6)=a_g;
%       a g=d_values air max(:,6);
%        xi = find(isnan(a_g));
%        x = 1:length(a_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%        a_g(xi) = yi;
%        d_values_air_max(:,6)=a_g;
%       a_g=d_values_air_min(:,6);
%        xi = find(isnan(a g));
%        x = 1:length(a_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%        a_g(xi) = yi;
%        d_values_air_min(:,6)=a_g;
%     %gap filling grape G
%       g_g=d_values_gra_avg(:,6);
%        xi = find(isnan(g g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_avg(:,6)=g_g;
%       g_g=d_values_gra_max(:,6);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_max(:,6)=g_g;
%       g_g=d_values_gra_min(:,6);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
```

```
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,6)=g_g;
%    %gap filling grape H
%      g_g=d_values_gra_avg(:,4);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,4)=g_g;
%      g_g=d_values_gra_max(:,4);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,4)=g_g;
%      g_g=d_values_gra_min(:,4);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,4)=g_g;
%    %gap filling grape D
%      g_g=d_values_gra_avg(:,3);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,3)=g_g;
%      g_g=d_values_gra_max(:,3);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,3)=g_g;
%      g_g=d_values_gra_min(:,3);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,3)=g_g;
%          %gap filling radiazione G
%      r_g=d_values_rad_sum(:,6);
%       xi = find(isnan(r_g));
%       x = 1:length(r_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
%       r_g(xi) = yi;
%       d_values_rad_sum(:,6)=r_g;
      %%%%%%%%%%%%%%

%     %tolgo la I e tutti i suoi parametri li imposto come la M che ha le
stesse due tipologie di def e gem
%     d_values_air_avg(:,2)=d_values_air_avg(:,1);
%     d_values_air_max(:,2)=d_values_air_max(:,1);
%     d_values_air_min(:,2)=d_values_air_min(:,1);
%     d_values_gra_avg(:,2)=d_values_gra_avg(:,1);
%     d_values_gra_max(:,2)=d_values_gra_max(:,1);
%     d_values_gra_min(:,2)=d_values_gra_min(:,1);
%     d_values_rad_sum(:,2)=d_values_rad_sum(:,1);
%end

% giorni medi (orari)
[h_values_air_avg,h_row_air_avg,h_column_air_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_air,'nanmean');
[h_values_gra_avg,h_row_gra_avg,h_column_gra_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_grap,'nanmean');
```

```
[h_values_rad_avg,h_row_rad_avg,h_column_rad_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_rad,'nanmean');
if styear==2008
    %la I la imposto come la M
    h_values_air_avg(:,2)=h_values_air_avg(:,1);
    h_values_gra_avg(:,2)=h_values_gra_avg(:,1);
    h_values_rad_avg(:,2)=h_values_rad_avg(:,1);
end
%orari solo def e gem quindi 4 serie
h_values_air_avg_tesi=
horzcat(nanmean(h_values_air_avg(:,1:2),2),nanmean(h_values_air_avg(:,3:4),
2),nanmean(h_values_air_avg(:,5:6),2),nanmean(h_values_air_avg(:,7:8),2));
h_values_gra_avg_tesi=
horzcat(nanmean(h_values_gra_avg(:,1:2),2),nanmean(h_values_gra_avg(:,3:4),
2),nanmean(h_values_gra_avg(:,5:6),2),nanmean(h_values_gra_avg(:,7:8),2));
h_values_rad_avg_tesi=
horzcat(nanmean(h_values_rad_avg(:,1:2),2),nanmean(h_values_rad_avg(:,3:4),
2),nanmean(h_values_rad_avg(:,5:6),2),nanmean(h_values_rad_avg(:,7:8),2));

%giornalieri solo def e gem quindi 4 serie
t_values_air_avg=
horzcat(mean(d_values_air_avg(:,1:2),2),mean(d_values_air_avg(:,3:4),2),mea
n(d_values_air_avg(:,5:6),2),mean(d_values_air_avg(:,7:8),2));
t_values_air_max=
horzcat(mean(d_values_air_max(:,1:2),2),mean(d_values_air_max(:,3:4),2),mea
n(d_values_air_max(:,5:6),2),mean(d_values_air_max(:,7:8),2));
t_values_air_min=
horzcat(mean(d_values_air_min(:,1:2),2),mean(d_values_air_min(:,3:4),2),mea
n(d_values_air_min(:,5:6),2),mean(d_values_air_min(:,7:8),2));
t_values_gra_avg=
horzcat(mean(d_values_gra_avg(:,1:2),2),mean(d_values_gra_avg(:,3:4),2),mea
n(d_values_gra_avg(:,5:6),2),mean(d_values_gra_avg(:,7:8),2));
t_values_gra_max=
horzcat(mean(d_values_gra_max(:,1:2),2),mean(d_values_gra_max(:,3:4),2),mea
n(d_values_gra_max(:,5:6),2),mean(d_values_gra_max(:,7:8),2));
t_values_gra_min=
horzcat(mean(d_values_gra_min(:,1:2),2),mean(d_values_gra_min(:,3:4),2),mea
n(d_values_gra_min(:,5:6),2),mean(d_values_gra_min(:,7:8),2));
t_values_rad_sum=
horzcat(mean(d_values_rad_sum(:,1:2),2),mean(d_values_rad_sum(:,3:4),2),mea
n(d_values_rad_sum(:,5:6),2),mean(d_values_rad_sum(:,7:8),2));


%indici per tutte le tesi (slave)
% air_avg=nanmean(d_values_air_avg);
% air_max=nanmean(d_values_air_max);
% air_min=nanmean(d_values_air_min);
% air_avg_sum=nansum(d_values_air_avg);
% air_max_sum=nansum(d_values_air_max);
% air_min_sum=nansum(d_values_air_min);
% escursion=air_max_sum-air_min_sum;

%indici per le tesi def e gem (4 serie nera-verde-rossa-gialla)
air_avg_t=nanmean(t_values_air_avg);
air_max_t=nanmean(t_values_air_max);
air_min_t=nanmean(t_values_air_min);
air_avg_sum_t=nansum(t_values_air_avg);
air_max_sum_t=nansum(t_values_air_max);
air_min_sum_t=nansum(t_values_air_min);
gra_avg_t=nanmean(t_values_gra_avg);
gra_max_t=nanmean(t_values_gra_max);
gra_min_t=nanmean(t_values_gra_min);
gra_avg_sum_t=nansum(t_values_gra_avg);
gra_max_sum_t=nansum(t_values_gra_max);
gra_min_sum_t=nansum(t_values_gra_min);
rad_sum_t=nansum(t_values_rad_sum);

% IW_air
iw_air_nero=sum(t_values_air_avg((t_values_air_avg(:,1)>10),1)-10);
iw_air_verde=sum(t_values_air_avg((t_values_air_avg(:,2)>10),2)-10);
iw_air_rosso=sum(t_values_air_avg((t_values_air_avg(:,3)>10),3)-10);
iw_air_giallo=sum(t_values_air_avg((t_values_air_avg(:,4)>10),4)-10);
iw_air=horzcat(iw_air_nero,iw_air_verde,iw_air_rosso,iw_air_giallo);
```

```
% IW grape
iw_gra_nero=sum(t_values_gra_avg((t_values_gra_avg(:,1)>10),1)-10);
iw_gra_verde=sum(t_values_gra_avg((t_values_gra_avg(:,2)>10),2)-10);
iw_gra_rosso=sum(t_values_gra_avg((t_values_gra_avg(:,3)>10),3)-10);
iw_gra_giallo=sum(t_values_gra_avg((t_values_gra_avg(:,4)>10),4)-10);
iw_gra=horzcat(iw_gra_nero,iw_gra_verde,iw_gra_rosso,iw_gra_giallo);
% IH_air
ih_air_nero=sum(((t_values_air_avg(:,1)-10)+(t_values_air_max(:,1)-10))/2);
ih_air_verde=sum(((t_values_air_avg(:,2)-10)+(t_values_air_max(:,2)-10))
/2);
ih_air_rosso=sum(((t_values_air_avg(:,3)-10)+(t_values_air_max(:,3)-10))
/2);
ih_air_giallo=sum(((t_values_air_avg(:,4)-10)+(t_values_air_max(:,4)-10))
/2);
ih_air=horzcat(ih_air_nero,ih_air_verde,ih_air_rosso,ih_air_giallo);
% IH_grape
ih_gra_nero=sum(((t_values_gra_avg(:,1)-10)+(t_values_gra_max(:,1)-10))/2);
ih_gra_verde=sum(((t_values_gra_avg(:,2)-10)+(t_values_gra_max(:,2)-10))
/2);
ih_gra_rosso=sum(((t_values_gra_avg(:,3)-10)+(t_values_gra_max(:,3)-10))
/2);
ih_gra_giallo=sum(((t_values_gra_avg(:,4)-10)+(t_values_gra_max(:,4)-10))
/2);
ih_gra=horzcat(ih_gra_nero,ih_gra_verde,ih_gra_rosso,ih_gra_giallo);
% SET air
set_air=sum(t_values_air_max-t_values_air_min);
% SET_grape
set_gra=sum(t_values_gra_max-t_values_gra_min);
% IG_air
% IG_grape
% IFS_air
freddi_air_nero=length(find(t_values_air_min(:,1)<10));
freddi_air_verde=length(find(t_values_air_min(:,2)<10));
freddi_air_rosso=length(find(t_values_air_min(:,3)<10));
freddi_air_giallo=length(find(t_values_air_min(:,4)<10));
ifs_air_nero=sum(t_values_air_max(:,1)-t_values_air_min(:,1))
*(freddi_air_nero+1);
ifs_air_verde=sum(t_values_air_max(:,2)-t_values_air_min(:,2))
*(freddi_air_verde+1);
ifs_air_rosso=sum(t_values_air_max(:,3)-t_values_air_min(:,3))
*(freddi_air_rosso+1);
ifs_air_giallo=sum(t_values_air_max(:,4)-t_values_air_min(:,4))
*(freddi_air_giallo+1);

ifs_air=horzcat(ifs_air_nero,ifs_air_verde,ifs_air_rosso,ifs_air_giallo);

% IFS_grape
freddi_gra_nero=length(find(t_values_gra_min(:,1)<10));
freddi_gra_verde=length(find(t_values_gra_min(:,2)<10));
freddi_gra_rosso=length(find(t_values_gra_min(:,3)<10));
freddi_gra_giallo=length(find(t_values_gra_min(:,4)<10));
ifs_gra_nero=sum(t_values_gra_max(:,1)-t_values_gra_min(:,1))
*(freddi_gra_nero+1);
ifs_gra_verde=sum(t_values_gra_max(:,2)-t_values_gra_min(:,2))
*(freddi_gra_verde+1);
ifs_gra_rosso=sum(t_values_gra_max(:,3)-t_values_gra_min(:,3))
*(freddi_gra_rosso+1);
ifs_gra_giallo=sum(t_values_gra_max(:,4)-t_values_gra_min(:,4))
*(freddi_gra_giallo+1);
ifs_gra=horzcat(ifs_gra_nero,ifs_gra_verde,ifs_gra_rosso,ifs_gra_giallo);
% CoolNI_air
CoolNI_air=air_min_t;
% CoolNI_grape
CoolNI_grap=gra_min_t;
% Morning(03-10) Index air
Morning_03_10_Index_air=nanmean(h_values_air_avg_tesi(4:11,:));
% Morning(03-10)_Index_grape
Morning_03_10_Index_grape=nanmean(h_values_gra_avg_tesi(4:11,:));
% Diurnal(11-18)_Index_air
Diurnal_11_18_Index_air=nanmean(h_values_air_avg_tesi(12:19,:));
% Diurnal(11-18)_Index_grape
Diurnal_11_18_Index_grape=nanmean(h_values_gra_avg_tesi(12:19,:));
% Night(19-02)_Index_air
```

```
Night_19_02_Index_air=
nanmean(vertcat(h_values_air_avg_tesi(20:24,:),h_values_air_avg_tesi(1:3,:)
));
% Night(19-02)_Index_grape
Night_19_02_Index_grape=
nanmean(vertcat(h_values_gra_avg_tesi(20:24,:),h_values_gra_avg_tesi(1:3,:)
));

MDN_index_air=
vertcat(Morning_03_10_Index_air,Diurnal_11_18_Index_air,Night_19_02_Index_a
ir);
MDN_index_gra=
vertcat(Morning_03_10_Index_grape,Diurnal_11_18_Index_grape,Night_19_02_Ind
ex_grape);
%
% dMorning_5_10_air=[2.1664      2.2391  2.2652  2.3698];
% dMorning_5_10_grape=[2.1393    2.3651  2.3789  2.1366];
% dTwilight_15_20_air=[-1.7419  -1.9075 -1.9198 -1.8619];
% dTwilight_15_20_grape=[-2.1404        -2.0402 -2.1484 -1.9785];
% d_index_air=vertcat(dMorning_5_10_air,dTwilight_15_20_air);
% d_index_gra=vertcat(dMorning_5_10_grape,dTwilight_15_20_grape);

dMorning_rate_5_10_air=(h_values_air_avg_tesi(11,:)-
h_values_air_avg_tesi(6,:))/6;
dMorning_rate_5_10_grape=(h_values_gra_avg_tesi(11,:)-
h_values_gra_avg_tesi(6,:))/6;
dTwilight_rate_15_20_air=(h_values_air_avg_tesi(21,:)-
h_values_air_avg_tesi(16,:))/6;
dTwilight_rate_15_20_grape=(h_values_gra_avg_tesi(21,:)-
h_values_gra_avg_tesi(16,:))/6;
d_index_rate_air=vertcat(dMorning_rate_5_10_air,dTwilight_rate_15_20_air);
d_index_rate_gra=
vertcat(dMorning_rate_5_10_grape,dTwilight_rate_15_20_grape);
% per la master

p_doy_m=N.Doy(mast);
p_air_avg_m=N.Tempmedia(mast);
p_air_max_m=N.Tmax(mast);
p_air_min_m=N.Tmin(mast);
p_rad_avg_m=N.RadGmedia(mast);
p_666=N.defogliazione(mast);
[d_values_master_air_avg,d_row_master_air_avg,d_column_master_air_avg]=
pivottable(p_doy_m,p_666,p_air_avg_m,'nanmean');
[d_values_master_air_max,d_row_master_air_max,d_column_master_air_max]=
pivottable(p_doy_m,p_666,p_air_max_m,'nanmax');
[d_values_master_air_min,d_row_master_air_min,d_column_master_air_min]=
pivottable(p_doy_m,p_666,p_air_min_m,'nanmin');
[d_values_master_rad_sum,d_row_rad_sum,d_column_rad_sum]=
pivottable(p_doy_m,p_666,p_rad_avg_m,'nansum');

[h_values_ms,h_row_ms,h_column_ms]=pivottable(p_ora,[p_666
p_666],p_air_avg_m,'nanmean');
% Master_IW
master_iw=sum(d_values_master_air_avg((d_values_master_air_avg>10),1)-10);
% Master_IH
master_ih=sum(((d_values_master_air_avg-10)+(d_values_master_air_max-10))
/2);
% Master SET
master_set=sum(d_values_master_air_max-d_values_master_air_min);
% Master_IG
% Master_IFS
freddi_master=length(find(d_values_master_air_min<10));
master_ifs=sum(d_values_master_air_max-d_values_master_air_min)
*(freddi_master+1);
% Master CoolNI
master_cooln=nanmean(d_values_master_air_min);
%matrice indici totale
matrix_index_slave_air=
vertcat(air_avg_t,air_max_t,air_min_t,air_avg_sum_t,air_max_sum_t,air_min_s
um_t,iw_air,ih_air,set_air,ifs_air,CoolNI_air,MDN_index_air,d_index_rate_ai
r);
matrix_index_slave_gra=
vertcat(rad_sum_t,gra_avg_t,gra_max_t,gra_min_t,gra_avg_sum_t,gra_max_sum_t
```

```
,gra min sum t,iw_gra,ih_gra,set_gra,ifs_gra,CoolNI_grap,MDN_index_gra,d_in
dex_rate_gra);
matrix_index_master=
horzcat(master_iw,master_ih,master_set,master_ifs,master_cooln);

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
figure('name','pivot tgrape alta vigoria')
hold on
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot tair alta vigoria')
hold on
plot(h_row_air_avg,h_values_air_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot RAD alta vigoria')
hold on
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)

elseif v==2 %donna olimpia

sname1=['Tair Master vs Tair Slave'];
eval(['figure(''Name'', sname1 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tair';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])
%
sname2=['Tair Master vs Tgrape Slave'];
eval(['figure(''Name'', sname2 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tgrap';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
```

```
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])

sname22=['Tair Master vs Tleaf Slave'];
eval(['figure(''Name'', sname22 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tleaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])


sname3=['precipitazioni Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname3 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.Bagn leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
```

```
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])

sname4=['precipitazioni Master vs potenziale idrico 30 cm Slave'];
eval(['figure(''Name'', sname4 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil1';
sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(mast), sss(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''airMaster'',''A'',''D'',''F'',''I'',''L'',-1)'])

sname5=['precipitazioni Master vs potenziale idrico 60 cm Slave'];
eval(['figure(''Name'', sname5 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.T_heatsoil2';
sss=N.Tempmedia/100;
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(mast), sss(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''airMaster'',''A'',''D'',''F'',''I'',''L'',-1)'])

sname6=['vento Master vs vento Slave'];
eval(['figure(''Name'', sname6 )'])
grid on
hold on
ss='N.VVent1Vmed';
s='N.VV';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
```

```
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''m+-'',''LineWidth'',2)'])

eval(['legend(''Master'',''B'',''D'',''E'',''G'',''I'',''L'',-1)'])

sname7=['radiazione Master vs radiazione Slave'];
eval(['figure(''Name'', sname7 )'])
grid on
hold on
ss='N.RadGmedia';
s='N.Rad';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==5);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])



%pivot solo HV
p_ora=
vertcat(N.ora(a),N.ora(b),N.ora(c),N.ora(e),N.ora(f),N.ora(g),N.ora(h),N.or
a(i));
p_def=
vertcat(N.defogliazione(a),N.defogliazione(b),N.defogliazione(c),N.defoglia
zione(e),N.defogliazione(f),N.defogliazione(g),N.defogliazione(h),N.defogli
azione(i));
p_gem=
vertcat(N.gemme(a),N.gemme(b),N.gemme(c),N.gemme(e),N.gemme(f),N.gemme(g),N
.gemme(h),N.gemme(i));
p_dir=
vertcat(N.diradamento(a),N.diradamento(b),N.diradamento(c),N.diradamento(e)
,N.diradamento(f),N.diradamento(g),N.diradamento(h),N.diradamento(i));
p_grap=
vertcat(N.Tgrap(a),N.Tgrap(b),N.Tgrap(c),N.Tgrap(e),N.Tgrap(f),N.Tgrap(g),N
.Tgrap(h),N.Tgrap(i));
p_air=
vertcat(N.Tair(a),N.Tair(b),N.Tair(c),N.Tair(e),N.Tair(f),N.Tair(g),N.Tair(
h),N.Tair(i));
p_rad=
vertcat(N.Rad(a),N.Rad(b),N.Rad(c),N.Rad(e),N.Rad(f),N.Rad(g),N.Rad(h),N.Ra
d(i));
p_doy=
vertcat(N.Doy(a),N.Doy(b),N.Doy(c),N.Doy(e),N.Doy(f),N.Doy(g),N.Doy(h),N.Do
```

```
y(i));
%%%%%%%%%%%


[d_values_air_avg,d_row_air_avg,d_column_air_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmean');
[d_values_air_max,d_row_air_max,d_column_air_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmax');
[d_values_air_min,d_row_air_min,d_column_air_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmin');
[d_values_gra_avg,d_row_gra_avg,d_column_gra_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmean');
[d_values_gra_max,d_row_gra_max,d_column_gra_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmax');
[d_values_gra_min,d_row_gra_min,d_column_gra_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmin');
[d_values_rad_sum,d_row_rad_sum,d_column_rad_sum]=pivottable(p_doy,[p_def
p_gem p_dir],p_rad,'nansum');


% %gap-filling e quality check per il 2009 DONNA OLIMPIA
% if styear==2009
% %     %tolgo la RAD della B e la imposto come la G
%      d_values_rad_sum(:,4)=d_values_rad_sum(:,3);
%
%     % ciclo per tutte le slave gap filling aria
%     for ixe=1:8
%      a_g=d_values_air_avg(:,ixe);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_avg(:,ixe)=a_g;
%      a_g=d_values_air_max(:,ixe);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_max(:,ixe)=a_g;
%      a_g=d_values_air_min(:,ixe);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_min(:,ixe)=a_g;
%     % ciclo per tutte le slave gap filling GRAPE
%      g_g=d_values_gra_avg(:,ixe);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,ixe)=g_g;
%      g_g=d_values_gra_max(:,ixe);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,ixe)=g_g;
%      g_g=d_values_gra_min(:,ixe);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,ixe)=g_g;
%          %gap filling radiazione
%      r_g=d_values_rad_sum(:,ixe);
%       xi = find(isnan(r_g));
```

```
%        x = 1:length(r_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
%        r_g(xi) = yi;
%        d_values_rad_sum(:,ixe)=r_g;
%        %%%%%%%%%%%%%%
%      end
%

% %gap-filling e quality check per il 2008 DONNA OLIMPIA
% if styear==2008
%      %gap filling aria E
%       a_g=d_values_air_avg(:,8);
%        xi = find(isnan(a_g));
%        x = 1:length(a_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%        a_g(xi) = yi;
%        d_values_air_avg(:,8)=a_g;
%       a_g=d_values_air_max(:,8);
%        xi = find(isnan(a_g));
%        x = 1:length(a_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%        a_g(xi) = yi;
%        d_values_air_max(:,8)=a_g;
%       a_g=d_values_air_min(:,8);
%        xi = find(isnan(a_g));
%        x = 1:length(a_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%        a_g(xi) = yi;
%        d_values_air_min(:,8)=a_g;
%     %gap filling grape E
%       g_g=d_values_gra_avg(:,8);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_avg(:,8)=g_g;
%       g_g=d_values_gra_max(:,8);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_max(:,8)=g_g;
%       g_g=d_values_gra_min(:,8);
%        xi = find(isnan(g_g));
%        x = 1:length(g_g);
%        D = setdiff(x, xi);
%        yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%        g_g(xi) = yi;
%        d_values_gra_min(:,8)=g_g;
%        %%%%%%%%%%%%%%
%      %tolgo la B e tutti i suoi parametri li imposto come la G che ha le
stesse due tipologie di def e gem
%      d_values_air_avg(:,4)=d_values_air_avg(:,3);
%      d_values_air_max(:,4)=d_values_air_max(:,3);
%      d_values_air_min(:,4)=d_values_air_min(:,3);
%      d_values_gra_avg(:,4)=d_values_gra_avg(:,3);
%      d_values_gra_max(:,4)=d_values_gra_max(:,3);
%      d_values_gra_min(:,4)=d_values_gra_min(:,3);
%      d_values_rad_sum(:,4)=d_values_rad_sum(:,3);
% end

% giorni medi (orari)
[h_values_air_avg,h_row_air_avg,h_column_air_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_air,'nanmean');
[h_values_gra_avg,h_row_gra_avg,h_column_gra_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_grap,'nanmean');
[h_values_rad_avg,h_row_rad_avg,h_column_rad_avg]=pivottable(p_ora,[p_def
```

```
p gem p dir],p rad,'nanmean');
if styear==2008
    %la I la imposto come la M
    h_values_air_avg(:,4)=h_values_air_avg(:,3);
    h_values_gra_avg(:,4)=h_values_gra_avg(:,3);
    h_values_rad_avg(:,4)=h_values_rad_avg(:,3);
end
%orari solo def e gem quindi 4 serie
h values air avg tesi=
horzcat(nanmean(h_values_air_avg(:,1:2),2),nanmean(h_values_air_avg(:,3:4),
2),nanmean(h_values_air_avg(:,5:6),2),nanmean(h_values_air_avg(:,7:8),2));
h_values_gra_avg_tesi=
horzcat(nanmean(h_values_gra_avg(:,1:2),2),nanmean(h_values_gra_avg(:,3:4),
2),nanmean(h_values_gra_avg(:,5:6),2),nanmean(h_values_gra_avg(:,7:8),2));
h_values_rad_avg_tesi=
horzcat(nanmean(h_values_rad_avg(:,1:2),2),nanmean(h_values_rad_avg(:,3:4),
2),nanmean(h_values_rad_avg(:,5:6),2),nanmean(h_values_rad_avg(:,7:8),2));

%giornalieri solo def e gem quindi 4 serie
t_values_air_avg=
horzcat(mean(d_values_air_avg(:,1:2),2),mean(d_values_air_avg(:,3:4),2),mea
n(d_values_air_avg(:,5:6),2),mean(d_values_air_avg(:,7:8),2));
t_values_air_max=
horzcat(mean(d_values_air_max(:,1:2),2),mean(d_values_air_max(:,3:4),2),mea
n(d values air max(:,5:6),2),mean(d_values_air_max(:,7:8),2));
t_values_air_min=
horzcat(mean(d_values_air_min(:,1:2),2),mean(d_values_air_min(:,3:4),2),mea
n(d_values_air_min(:,5:6),2),mean(d_values_air_min(:,7:8),2));
t_values_gra_avg=
horzcat(mean(d_values_gra_avg(:,1:2),2),mean(d_values_gra_avg(:,3:4),2),mea
n(d_values_gra_avg(:,5:6),2),mean(d_values_gra_avg(:,7:8),2));
t_values_gra_max=
horzcat(mean(d values gra max(:,1:2),2),mean(d values gra max(:,3:4),2),mea
n(d_values_gra_max(:,5:6),2),mean(d_values_gra_max(:,7:8),2));
t_values_gra_min=
horzcat(mean(d_values_gra_min(:,1:2),2),mean(d_values_gra_min(:,3:4),2),mea
n(d_values_gra_min(:,5:6),2),mean(d_values_gra_min(:,7:8),2));
t_values_rad_sum=
horzcat(mean(d_values_rad_sum(:,1:2),2),mean(d_values_rad_sum(:,3:4),2),mea
n(d_values_rad_sum(:,5:6),2),mean(d_values_rad_sum(:,7:8),2));

%indici per le tesi def e gem (4 serie nera-verde-rossa-gialla)
air_avg_t=nanmean(t_values_air_avg);
air_max_t=nanmean(t_values_air_max);
air_min_t=nanmean(t_values_air_min);
air_avg_sum_t=nansum(t_values_air_avg);
air_max_sum_t=nansum(t_values_air_max);
air_min_sum_t=nansum(t_values_air_min);
gra avg t=nanmean(t values gra avg);
gra max t=nanmean(t values gra max);
gra_min_t=nanmean(t_values_gra_min);
gra_avg_sum_t=nansum(t_values_gra_avg);
gra_max_sum_t=nansum(t_values_gra_max);
gra_min_sum_t=nansum(t_values_gra_min);
rad_sum_t=nansum(t_values_rad_sum);

% IW air
iw air nero=sum(t values air avg((t values air avg(:,1)>10),1)-10);
iw_air_verde=sum(t_values_air_avg((t_values_air_avg(:,2)>10),2)-10);
iw_air_rosso=sum(t_values_air_avg((t_values_air_avg(:,3)>10),3)-10);
iw_air_giallo=sum(t_values_air_avg((t_values_air_avg(:,4)>10),4)-10);
iw_air=horzcat(iw_air_nero,iw_air_verde,iw_air_rosso,iw_air_giallo);
% IW_grape
iw_gra_nero=sum(t_values_gra_avg((t_values_gra_avg(:,1)>10),1)-10);
iw gra verde=sum(t values gra avg((t values gra avg(:,2)>10),2)-10);
iw gra rosso=sum(t values gra avg((t values gra avg(:,3)>10),3)-10);
iw_gra_giallo=sum(t_values_gra_avg((t_values_gra_avg(:,4)>10),4)-10);
iw_gra=horzcat(iw_gra_nero,iw_gra_verde,iw_gra_rosso,iw_gra_giallo);
% IH_air
ih_air_nero=sum(((t_values_air_avg(:,1)-10)+(t_values_air_max(:,1)-10))/2);
ih_air_verde=sum(((t_values_air_avg(:,2)-10)+(t_values_air_max(:,2)-10))
/2);
ih_air_rosso=sum(((t_values_air_avg(:,3)-10)+(t_values_air_max(:,3)-10))
```

```
/2);
ih_air_giallo=sum(((t_values_air_avg(:,4)-10)+(t_values_air_max(:,4)-10))
/2);
ih_air=horzcat(ih_air_nero,ih_air_verde,ih_air_rosso,ih_air_giallo);
% IH_grape
ih_gra_nero=sum(((t_values_gra_avg(:,1)-10)+(t_values_gra_max(:,1)-10))/2);
ih_gra_verde=sum(((t_values_gra_avg(:,2)-10)+(t_values_gra_max(:,2)-10))
/2);
ih_gra_rosso=sum(((t_values_gra_avg(:,3)-10)+(t_values_gra_max(:,3)-10))
/2);
ih_gra_giallo=sum(((t_values_gra_avg(:,4)-10)+(t_values_gra_max(:,4)-10))
/2);
ih_gra=horzcat(ih_gra_nero,ih_gra_verde,ih_gra_rosso,ih_gra_giallo);
% SET_air
set_air=sum(t_values_air_max-t_values_air_min);
% SET_grape
set_gra=sum(t_values_gra_max-t_values_gra_min);
% IG_air
% IG_grape
% IFS_air
freddi_air_nero=length(find(t_values_air_min(:,1)<10));
freddi_air_verde=length(find(t_values_air_min(:,2)<10));
freddi_air_rosso=length(find(t_values_air_min(:,3)<10));
freddi_air_giallo=length(find(t_values_air_min(:,4)<10));
ifs_air_nero=sum(t_values_air_max(:,1)-t_values_air_min(:,1))
*(freddi_air_nero+1);
ifs_air_verde=sum(t_values_air_max(:,2)-t_values_air_min(:,2))
*(freddi_air_verde+1);
ifs_air_rosso=sum(t_values_air_max(:,3)-t_values_air_min(:,3))
*(freddi_air_rosso+1);
ifs_air_giallo=sum(t_values_air_max(:,4)-t_values_air_min(:,4))
*(freddi_air_giallo+1);
ifs_air=horzcat(ifs_air_nero,ifs_air_verde,ifs_air_rosso,ifs_air_giallo);

% IFS_grape
freddi_gra_nero=length(find(t_values_gra_min(:,1)<10));
freddi_gra_verde=length(find(t_values_gra_min(:,2)<10));
freddi_gra_rosso=length(find(t_values_gra_min(:,3)<10));
freddi_gra_giallo=length(find(t_values_gra_min(:,4)<10));
ifs_gra_nero=sum(t_values_gra_max(:,1)-t_values_gra_min(:,1))
*(freddi_gra_nero+1);
ifs_gra_verde=sum(t_values_gra_max(:,2)-t_values_gra_min(:,2))
*(freddi_gra_verde+1);
ifs_gra_rosso=sum(t_values_gra_max(:,3)-t_values_gra_min(:,3))
*(freddi_gra_rosso+1);
ifs_gra_giallo=sum(t_values_gra_max(:,4)-t_values_gra_min(:,4))
*(freddi_gra_giallo+1);
ifs_gra=horzcat(ifs_gra_nero,ifs_gra_verde,ifs_gra_rosso,ifs_gra_giallo);
% CoolNI_air
CoolNI_air=air_min_t;
% CoolNI_grape
CoolNI_grap=gra_min_t;
% Morning(03-10)_Index_air
Morning_03_10_Index_air=nanmean(h_values_air_avg_tesi(4:11,:));
% Morning(03-10)_Index_grape
Morning_03_10_Index_grape=nanmean(h_values_gra_avg_tesi(4:11,:));
% Diurnal(11-18)_Index_air
Diurnal_11_18_Index_air=nanmean(h_values_air_avg_tesi(12:19,:));
% Diurnal(11-18)_Index_grape
Diurnal_11_18_Index_grape=nanmean(h_values_gra_avg_tesi(12:19,:));
% Night(19-02)_Index_air
Night_19_02_Index_air=
nanmean(vertcat(h_values_air_avg_tesi(20:24,:),h_values_air_avg_tesi(1:3,:)
));
% Night(19-02)_Index_grape
Night_19_02_Index_grape=
nanmean(vertcat(h_values_gra_avg_tesi(20:24,:),h_values_gra_avg_tesi(1:3,:)
));

MDN_index_air=
vertcat(Morning_03_10_Index_air,Diurnal_11_18_Index_air,Night_19_02_Index_a
ir);
MDN_index_gra=
```

```
vertcat(Morning_03_10_Index_grape,Diurnal_11_18_Index_grape,Night_19_02_Ind
ex_grape);
%
% dMorning_5_10_air=[2.4988 2.6327 2.5892 2.5218];
% dMorning_5_10_grape=[2.8124 2.7129 3.1847 2.7789];
% dTwilight_15_20_air=[-1.5655 -1.5818 -1.5685 -1.5096];
% dTwilight_15_20_grape=[-1.7907 -1.712 -1.801 -1.7404];
% d_index_air=vertcat(dMorning_5_10_air,dTwilight_15_20_air);
% d_index_gra=vertcat(dMorning_5_10_grape,dTwilight_15_20_grape);

dMorning_rate_5_10_air=(h_values_air_avg_tesi(11,:)-
h_values_air_avg_tesi(6,:))/6;
dMorning_rate_5_10_grape=(h_values_gra_avg_tesi(11,:)-
h_values_gra_avg_tesi(6,:))/6;
dTwilight_rate_15_20_air=(h_values_air_avg_tesi(21,:)-
h_values_air_avg_tesi(16,:))/6;
dTwilight_rate_15_20_grape=(h_values_gra_avg_tesi(21,:)-
h_values_gra_avg_tesi(16,:))/6;
d_index_rate_air=vertcat(dMorning_rate_5_10_air,dTwilight_rate_15_20_air);
d_index_rate_gra=
vertcat(dMorning_rate_5_10_grape,dTwilight_rate_15_20_grape);

% per la master
p_doy_m=N.Doy(mast);
p_air_avg_m=N.Tempmedia(mast);
p_air_max_m=N.Tmax(mast);
p_air_min_m=N.Tmin(mast);
p_rad_avg_m=N.RadGmedia(mast);
p_666=N.defogliazione(mast);
[d_values_master_air_avg,d_row_master_air_avg,d_column_master_air_avg]=
pivottable(p_doy_m,p_666,p_air_avg_m,'nanmean');
[d_values_master_air_max,d_row_master_air_max,d_column_master_air_max]=
pivottable(p_doy_m,p_666,p_air_max_m,'nanmax');
[d_values_master_air_min,d_row_master_air_min,d_column_master_air_min]=
pivottable(p_doy_m,p_666,p_air_min_m,'nanmin');
[d_values_master_rad_sum,d_row_rad_sum,d_column_rad_sum]=
pivottable(p_doy_m,p_666,p_rad_avg_m,'nansum');

[h_values_ms,h_row_ms,h_column_ms]=pivottable(p_ora,[p_666
p_666],p_air_avg_m,'nanmean');
% Master IW
master_iw=sum(d_values_master_air_avg((d_values_master_air_avg>10),1)-10);
% Master_IH
master_ih=sum(((d_values_master_air_avg-10)+(d_values_master_air_max-10))
/2);
% Master_SET
master_set=sum(d_values_master_air_max-d_values_master_air_min);
% Master_IG
% Master IFS
freddi_master=length(find(d_values_master_air_min<10));
master_ifs=sum(d_values_master_air_max-d_values_master_air_min)
*(freddi_master+1);
% Master_CoolNI
master_cooln=nanmean(d_values_master_air_min);
%matrice indici totale
matrix_index_slave_air=
vertcat(air_avg_t,air_max_t,air_min_t,air_avg_sum_t,air_max_sum_t,air_min_s
um_t,iw_air,ih_air,set_air,ifs_air,CoolNI_air,MDN_index_air,d_index_rate_ai
r);
matrix_index_slave_gra=
vertcat(rad_sum_t,gra_avg_t,gra_max_t,gra_min_t,gra_avg_sum_t,gra_max_sum_t
,gra_min_sum_t,iw_gra,ih_gra,set_gra,ifs_gra,CoolNI_grap,MDN_index_gra,d_in
dex_rate_gra);
matrix_index_master=
horzcat(master_iw,master_ih,master_set,master_ifs,master_cooln);
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
figure('name','pivot tgrape alta vigoria')
hold on
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
```

```
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot tair alta vigoria')
hold on
plot(h_row_air_avg,h_values_air_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot RAD alta vigoria')
hold on
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)

elseif v==3 %cacciagrande

sname1=['Tair Master vs Tair Slave'];
eval(['figure(''Name'', sname1 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tair';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])
%
sname2=['Tair Master vs Tgrape Slave'];
eval(['figure(''Name'', sname2 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tgrap';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''r+-'',''LineWidth'',2)'])
```

```
eval(['plot(N.JDTpc(q),' s '(q),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])

sname22=['Tair Master vs Tleaf Slave'];
eval(['figure(''Name'', sname22 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tleaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])


sname3=['precipitazioni Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname3 )'])
grid on
hold on
ss='N.Piogsomma';
s='N.Bagn_leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])

sname4=['precipitazioni Master vs potenziale idrico 30 cm Slave'];
```

```
eval(['figure(''Name'', sname4 )'])
grid on
hold on
ss=N.Piogsomma/100;
s='N.T_heatsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
eval(['bar(N.JDTpc(mast),ss(mast),''r'',''BarWidth'',0.6)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['legend(''Master/100'',''M'',''N'',''P'',''T'',''U'',-1)'])

sname5=['precipitazioni Master vs potenziale idrico 60 cm Slave'];
eval(['figure(''Name'', sname5 )'])
grid on
hold on
ss=N.Piogsomma/100;
s='N.T_heatsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
eval(['bar(N.JDTpc(mast),ss(mast),''r'',''BarWidth'',0.6)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['legend(''Master/100'',''M'',''N'',''P'',''T'',''U'',-1)'])

sname6=['vento Master vs vento Slave'];
eval(['figure(''Name'', sname6 )'])
grid on
hold on
ss='N.VVent1Vmed';
s='N.VV';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''r-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''T'',''U'',''V'',-1)'])

sname7=['radiazione Master vs radiazione Slave'];
eval(['figure(''Name'', sname7 )'])
grid on
hold on
ss='N.RadGmedia';
s='N.Rad';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
m=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==6);
n=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==3);
o=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
```

```
p=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
q=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
r=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
s1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
t=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
u=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
v1=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(m),' s '(m),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(n),' s '(n),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(o),' s '(o),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(p),' s '(p),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(q),' s '(q),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(r),' s '(r),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(s1),' s '(s1),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(t),' s '(t),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(u),' s '(u),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(v1),' s '(v1),''k+-'',''LineWidth'',2)'])
eval(['legend(''Master'',''M'',''N'',''O'',''P'',''Q'',''R'',''S'',''T'',''
U'',''V'',-1)'])


%pivot solo HV
p_ora=
vertcat(N.ora(o),N.ora(p),N.ora(q),N.ora(r),N.ora(s1),N.ora(t),N.ora(u),N.o
ra(v1));
p_def=
vertcat(N.defogliazione(o),N.defogliazione(p),N.defogliazione(q),N.defoglia
zione(r),N.defogliazione(s1),N.defogliazione(t),N.defogliazione(u),N.defogl
iazione(v1));
p_gem=
vertcat(N.gemme(o),N.gemme(p),N.gemme(q),N.gemme(r),N.gemme(s1),N.gemme(t),
N.gemme(u),N.gemme(v1));
p_dir=
vertcat(N.diradamento(o),N.diradamento(p),N.diradamento(q),N.diradamento(r)
,N.diradamento(s1),N.diradamento(t),N.diradamento(u),N.diradamento(v1));
p_grap=
vertcat(N.Tgrap(o),N.Tgrap(p),N.Tgrap(q),N.Tgrap(r),N.Tgrap(s1),N.Tgrap(t),
N.Tgrap(u),N.Tgrap(v1));
p_air=
vertcat(N.Tair(o),N.Tair(p),N.Tair(q),N.Tair(r),N.Tair(s1),N.Tair(t),N.Tair
(u),N.Tair(v1));
p_rad=
vertcat(N.Rad(o),N.Rad(p),N.Rad(q),N.Rad(r),N.Rad(s1),N.Rad(t),N.Rad(u),N.R
ad(v1));
p_doy=
vertcat(N.Doy(o),N.Doy(p),N.Doy(q),N.Doy(r),N.Doy(s1),N.Doy(t),N.Doy(u),N.D
oy(v1));

[d_values_air_avg,d_row_air_avg,d_column_air_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmean');
[d_values_air_max,d_row_air_max,d_column_air_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmax');
[d_values_air_min,d_row_air_min,d_column_air_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmin');
[d_values_gra_avg,d_row_gra_avg,d_column_gra_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmean');
[d_values_gra_max,d_row_gra_max,d_column_gra_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmax');
[d_values_gra_min,d_row_gra_min,d_column_gra_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmin');
[d_values_rad_sum,d_row_rad_sum,d_column_rad_sum]=pivottable(p_doy,[p_def
p_gem p_dir],p_rad,'nansum');



% %gap-filling e quality check per il 2009 CACCIAGRANDE
% if styear==2009
% %     %tolgo la GRAPE della T e la imposto come la O
%      d_values_gra_avg(:,8)=d_values_gra_avg(:,7);
%      d_values_gra_max(:,8)=d_values_gra_max(:,7);
%      d_values_gra_min(:,8)=d_values_gra_min(:,7);
%      %valori dal 182 della T di cacciagrande mancanti
```

```
%     d values air avg(1:9,8)=d values air avg(1:9,7);
%     d_values_air_max(1:9,8)=d_values_air_max(1:9,7);
%     d_values_air_min(1:9,8)=d_values_air_min(1:9,7);
%     d_values_gra_avg(1:9,8)=d_values_gra_avg(1:9,7);
%     d_values_gra_max(1:9,8)=d_values_gra_max(1:9,7);
%     d_values_gra_min(1:9,8)=d_values_gra_min(1:9,7);
%     d_values_rad_sum(1:9,8)=d_values_rad_sum(1:9,7);
%
%    %tolgo la P e la imposto come la Q
%     d_values_air_avg(:,5)=d_values_air_avg(:,6);
%     d_values_air_max(:,5)=d_values_air_max(:,6);
%     d_values_air_min(:,5)=d_values_air_min(:,6);
%     d_values_gra_avg(:,5)=d_values_gra_avg(:,6);
%     d_values_gra_max(:,5)=d_values_gra_max(:,6);
%     d_values_gra_min(:,5)=d_values_gra_min(:,6);
%     d_values_rad_sum(:,5)=d_values_rad_sum(:,6);
%     % ciclo per tutte le slave gap filling aria
%     for ixe=1:8
%      a_g=d_values_air_avg(:,ixe);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d values air avg(:,ixe)=a g;
%      a_g=d_values_air_max(:,ixe);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_max(:,ixe)=a_g;
%      a g=d_values air min(:,ixe);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_min(:,ixe)=a_g;
%     % ciclo per tutte le slave gap filling GRAPE
%      g g=d_values gra avg(:,ixe);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,ixe)=g_g;
%      g_g=d_values_gra_max(:,ixe);
%       xi = find(isnan(g g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,ixe)=g_g;
%      g_g=d_values_gra_min(:,ixe);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,ixe)=g_g;
%          %gap filling radiazione
%      r_g=d_values_rad_sum(:,ixe);
%       xi = find(isnan(r_g));
%       x = 1:length(r_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
%       r_g(xi) = yi;
%       d_values_rad_sum(:,ixe)=r_g;
%       %%%%%%%%%%%%%%
%     end

%gap-filling e quality check per il 2008 cacciagrande
```

```
% if styear==2008
%     %gap filling aria U
%      a_g=d_values_air_avg(:,4);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_avg(:,4)=a_g;
%      a_g=d_values_air_max(:,4);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_max(:,4)=a_g;
%      a_g=d_values_air_min(:,4);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_min(:,4)=a_g;
%           %gap filling aria T
%      a_g=d_values_air_avg(:,8);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_avg(:,8)=a_g;
%      a_g=d_values_air_max(:,8);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_max(:,8)=a_g;
%      a_g=d_values_air_min(:,8);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_min(:,8)=a_g;
%    %gap filling grape R
%      g_g=d_values_gra_avg(:,2);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,2)=g_g;
%      g_g=d_values_gra_max(:,2);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,2)=g_g;
%      g_g=d_values_gra_min(:,2);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,2)=g_g;
%    %gap filling grape U
%      g_g=d_values_gra_avg(:,4);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
```

```
%       g_g(xi) = yi;
%       d_values_gra_avg(:,4)=g_g;
%      g_g=d_values_gra_max(:,4);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,4)=g_g;
%      g_g=d_values_gra_min(:,4);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,4)=g_g;
%    %gap filling grape O
%      g_g=d_values_gra_avg(:,7);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,7)=g_g;
%      g_g=d_values_gra_max(:,7);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,7)=g_g;
%      g_g=d_values_gra_min(:,7);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,7)=g_g;
%          %gap filling grape T
%      g_g=d_values_gra_avg(:,8);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,8)=g_g;
%      g_g=d_values_gra_max(:,8);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,8)=g_g;
%      g_g=d_values_gra_min(:,8);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,8)=g_g;
%          %gap filling radiazione U
%      r_g=d_values_rad_sum(:,4);
%       xi = find(isnan(r_g));
%       x = 1:length(r_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
%       r_g(xi) = yi;
%       d_values_rad_sum(:,4)=r_g;
%                %gap filling radiazione T
%      r_g=d_values_rad_sum(:,8);
%       xi = find(isnan(r_g));
%       x = 1:length(r_g);
%       D = setdiff(x, xi);
```

```
%       yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
%       r_g(xi) = yi;
%       d_values_rad_sum(:,8)=r_g;
%
%       %%%%%%%%%%%%%%
%     %tolgo la p e tutti i suoi parametri li imposto come la q che ha le
stesse due tipologie di def e gem
%     d_values_air_avg(:,5)=d_values_air_avg(:,6);
%     d_values_air_max(:,5)=d_values_air_max(:,6);
%     d_values_air_min(:,5)=d_values_air_min(:,6);
%     d_values_gra_avg(:,5)=d_values_gra_avg(:,6);
%     d_values_gra_max(:,5)=d_values_gra_max(:,6);
%     d_values_gra_min(:,5)=d_values_gra_min(:,6);
%     d_values_rad_sum(:,5)=d_values_rad_sum(:,6);
%end

% giorni medi (orari)
[h_values_air_avg,h_row_air_avg,h_column_air_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_air,'nanmean');
[h_values_gra_avg,h_row_gra_avg,h_column_gra_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_grap,'nanmean');
[h_values_rad_avg,h_row_rad_avg,h_column_rad_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_rad,'nanmean');
if styear==2008
    %la p la imposto come la q
    h_values_air_avg(:,5)=h_values_air_avg(:,6);
    h_values_gra_avg(:,5)=h_values_gra_avg(:,6);
    h_values_rad_avg(:,5)=h_values_rad_avg(:,6);
end
%orari solo def e gem quindi 4 serie
h_values_air_avg_tesi=
horzcat(nanmean(h_values_air_avg(:,1:2),2),nanmean(h_values_air_avg(:,3:4),
2),nanmean(h_values_air_avg(:,5:6),2),nanmean(h_values_air_avg(:,7:8),2));
h_values_gra_avg_tesi=
horzcat(nanmean(h_values_gra_avg(:,1:2),2),nanmean(h_values_gra_avg(:,3:4),
2),nanmean(h_values_gra_avg(:,5:6),2),nanmean(h_values_gra_avg(:,7:8),2));
h_values_rad_avg_tesi=
horzcat(nanmean(h_values_rad_avg(:,1:2),2),nanmean(h_values_rad_avg(:,3:4),
2),nanmean(h_values_rad_avg(:,5:6),2),nanmean(h_values_rad_avg(:,7:8),2));

%giornalieri solo def e gem quindi 4 serie
t_values_air_avg=
horzcat(mean(d_values_air_avg(:,1:2),2),mean(d_values_air_avg(:,3:4),2),mea
n(d_values_air_avg(:,5:6),2),mean(d_values_air_avg(:,7:8),2));
t_values_air_max=
horzcat(mean(d_values_air_max(:,1:2),2),mean(d_values_air_max(:,3:4),2),mea
n(d_values_air_max(:,5:6),2),mean(d_values_air_max(:,7:8),2));
t_values_air_min=
horzcat(mean(d_values_air_min(:,1:2),2),mean(d_values_air_min(:,3:4),2),mea
n(d_values_air_min(:,5:6),2),mean(d_values_air_min(:,7:8),2));
t_values_gra_avg=
horzcat(mean(d_values_gra_avg(:,1:2),2),mean(d_values_gra_avg(:,3:4),2),mea
n(d_values_gra_avg(:,5:6),2),mean(d_values_gra_avg(:,7:8),2));
t_values_gra_max=
horzcat(mean(d_values_gra_max(:,1:2),2),mean(d_values_gra_max(:,3:4),2),mea
n(d_values_gra_max(:,5:6),2),mean(d_values_gra_max(:,7:8),2));
t_values_gra_min=
horzcat(mean(d_values_gra_min(:,1:2),2),mean(d_values_gra_min(:,3:4),2),mea
n(d_values_gra_min(:,5:6),2),mean(d_values_gra_min(:,7:8),2));
t_values_rad_sum=
horzcat(mean(d_values_rad_sum(:,1:2),2),mean(d_values_rad_sum(:,3:4),2),mea
n(d_values_rad_sum(:,5:6),2),mean(d_values_rad_sum(:,7:8),2));

%indici per le tesi def e gem (4 serie nera-verde-rossa-gialla)
air_avg_t=nanmean(t_values_air_avg);
air_max_t=nanmean(t_values_air_max);
air_min_t=nanmean(t_values_air_min);
air_avg_sum_t=nansum(t_values_air_avg);
air_max_sum_t=nansum(t_values_air_max);
air_min_sum_t=nansum(t_values_air_min);
gra_avg_t=nanmean(t_values_gra_avg);
gra_max_t=nanmean(t_values_gra_max);
gra_min_t=nanmean(t_values_gra_min);
```

```
gra_avg_sum_t=nansum(t_values_gra_avg);
gra_max_sum_t=nansum(t_values_gra_max);
gra_min_sum_t=nansum(t_values_gra_min);
rad_sum_t=nansum(t_values_rad_sum);

% IW_air
iw_air_nero=sum(t_values_air_avg((t_values_air_avg(:,1)>10),1)-10);
iw_air_verde=sum(t_values_air_avg((t_values_air_avg(:,2)>10),2)-10);
iw_air_rosso=sum(t_values_air_avg((t_values_air_avg(:,3)>10),3)-10);
iw_air_giallo=sum(t_values_air_avg((t_values_air_avg(:,4)>10),4)-10);
iw_air=horzcat(iw_air_nero,iw_air_verde,iw_air_rosso,iw_air_giallo);
% IW_grape
iw_gra_nero=sum(t_values_gra_avg((t_values_gra_avg(:,1)>10),1)-10);
iw_gra_verde=sum(t_values_gra_avg((t_values_gra_avg(:,2)>10),2)-10);
iw_gra_rosso=sum(t_values_gra_avg((t_values_gra_avg(:,3)>10),3)-10);
iw_gra_giallo=sum(t_values_gra_avg((t_values_gra_avg(:,4)>10),4)-10);
iw_gra=horzcat(iw_gra_nero,iw_gra_verde,iw_gra_rosso,iw_gra_giallo);
% IH_air
ih_air_nero=sum(((t_values_air_avg(:,1)-10)+(t_values_air_max(:,1)-10))/2);
ih_air_verde=sum(((t_values_air_avg(:,2)-10)+(t_values_air_max(:,2)-10))
/2);
ih_air_rosso=sum(((t_values_air_avg(:,3)-10)+(t_values_air_max(:,3)-10))
/2);
ih_air_giallo=sum(((t_values_air_avg(:,4)-10)+(t_values_air_max(:,4)-10))
/2);
ih_air=horzcat(ih_air_nero,ih_air_verde,ih_air_rosso,ih_air_giallo);
% IH_grape
ih_gra_nero=sum(((t_values_gra_avg(:,1)-10)+(t_values_gra_max(:,1)-10))/2);
ih_gra_verde=sum(((t_values_gra_avg(:,2)-10)+(t_values_gra_max(:,2)-10))
/2);
ih_gra_rosso=sum(((t_values_gra_avg(:,3)-10)+(t_values_gra_max(:,3)-10))
/2);
ih_gra_giallo=sum(((t_values_gra_avg(:,4)-10)+(t_values_gra_max(:,4)-10))
/2);
ih_gra=horzcat(ih_gra_nero,ih_gra_verde,ih_gra_rosso,ih_gra_giallo);
% SET_air
set_air=sum(t_values_air_max-t_values_air_min);
% SET_grape
set_gra=sum(t_values_gra_max-t_values_gra_min);
% IG_air
% IG_grape
% IFS_air
freddi_air_nero=length(find(t_values_air_min(:,1)<10));
freddi_air_verde=length(find(t_values_air_min(:,2)<10));
freddi_air_rosso=length(find(t_values_air_min(:,3)<10));
freddi_air_giallo=length(find(t_values_air_min(:,4)<10));
ifs_air_nero=sum(t_values_air_max(:,1)-t_values_air_min(:,1))
*(freddi_air_nero+1);
ifs_air_verde=sum(t_values_air_max(:,2)-t_values_air_min(:,2))
*(freddi_air_verde+1);
ifs_air_rosso=sum(t_values_air_max(:,3)-t_values_air_min(:,3))
*(freddi_air_rosso+1);
ifs_air_giallo=sum(t_values_air_max(:,4)-t_values_air_min(:,4))
*(freddi_air_giallo+1);
ifs_air=horzcat(ifs_air_nero,ifs_air_verde,ifs_air_rosso,ifs_air_giallo);

% IFS_grape
freddi_gra_nero=length(find(t_values_gra_min(:,1)<10));
freddi_gra_verde=length(find(t_values_gra_min(:,2)<10));
freddi_gra_rosso=length(find(t_values_gra_min(:,3)<10));
freddi_gra_giallo=length(find(t_values_gra_min(:,4)<10));
ifs_gra_nero=sum(t_values_gra_max(:,1)-t_values_gra_min(:,1))
*(freddi_gra_nero+1);
ifs_gra_verde=sum(t_values_gra_max(:,2)-t_values_gra_min(:,2))
*(freddi_gra_verde+1);
ifs_gra_rosso=sum(t_values_gra_max(:,3)-t_values_gra_min(:,3))
*(freddi_gra_rosso+1);
ifs_gra_giallo=sum(t_values_gra_max(:,4)-t_values_gra_min(:,4))
*(freddi_gra_giallo+1);
ifs_gra=horzcat(ifs_gra_nero,ifs_gra_verde,ifs_gra_rosso,ifs_gra_giallo);
% CoolNI_air
CoolNI_air=air_min_t;
% CoolNI_grape
```

```
CoolNI_grap=gra_min_t;
% Morning(03-10)_Index_air
Morning_03_10_Index_air=nanmean(h_values_air_avg_tesi(4:11,:));
% Morning(03-10)_Index_grape
Morning_03_10_Index_grape=nanmean(h_values_gra_avg_tesi(4:11,:));
% Diurnal(11-18)_Index_air
Diurnal_11_18_Index_air=nanmean(h_values_air_avg_tesi(12:19,:));
% Diurnal(11-18)_Index_grape
Diurnal_11_18_Index_grape=nanmean(h_values_gra_avg_tesi(12:19,:));
% Night(19-02)_Index_air
Night_19_02_Index_air=
nanmean(vertcat(h_values_air_avg_tesi(20:24,:),h_values_air_avg_tesi(1:3,:)
));
% Night(19-02)_Index_grape
Night_19_02_Index_grape=
nanmean(vertcat(h_values_gra_avg_tesi(20:24,:),h_values_gra_avg_tesi(1:3,:)
));

MDN_index_air=
vertcat(Morning_03_10_Index_air,Diurnal_11_18_Index_air,Night_19_02_Index_a
ir);
MDN_index_gra=
vertcat(Morning_03_10_Index_grape,Diurnal_11_18_Index_grape,Night_19_02_Ind
ex_grape);

% dMorning_5_10_air=[2.4447 2.2638 2.5846 2.4751];
% dMorning_5_10_grape=[2.6667 2.3504 2.6263 2.9344];
% dTwilight_15_20_air=[-1.6864 -1.6683 -1.7803 -1.6947];
% dTwilight_15_20_grape=[-1.8974 -1.9125 -1.8355 -2.1824];
% d_index_air=vertcat(dMorning_5_10_air,dTwilight_15_20_air);
% d_index_gra=vertcat(dMorning_5_10_grape,dTwilight_15_20_grape);

dMorning_rate_5_10_air=(h_values_air_avg_tesi(11,:)-
h_values_air_avg_tesi(6,:))/6;
dMorning_rate_5_10_grape=(h_values_gra_avg_tesi(11,:)-
h_values_gra_avg_tesi(6,:))/6;
dTwilight_rate_15_20_air=(h_values_air_avg_tesi(21,:)-
h_values_air_avg_tesi(16,:))/6;
dTwilight_rate_15_20_grape=(h_values_gra_avg_tesi(21,:)-
h_values_gra_avg_tesi(16,:))/6;
d_index_rate_air=vertcat(dMorning_rate_5_10_air,dTwilight_rate_15_20_air);
d_index_rate_gra=
vertcat(dMorning_rate_5_10_grape,dTwilight_rate_15_20_grape);
% per la master
p_doy_m=N.Doy(mast);
p_air_avg_m=N.Tempmedia(mast);
p_air_max_m=N.Tmax(mast);
p_air_min_m=N.Tmin(mast);
p_rad_avg_m=N.RadGmedia(mast);
p_666=N.defogliazione(mast);
[d_values_master_air_avg,d_row_master_air_avg,d_column_master_air_avg]=
pivottable(p_doy_m,p_666,p_air_avg_m,'nanmean');
[d_values_master_air_max,d_row_master_air_max,d_column_master_air_max]=
pivottable(p_doy_m,p_666,p_air_max_m,'nanmax');
[d_values_master_air_min,d_row_master_air_min,d_column_master_air_min]=
pivottable(p_doy_m,p_666,p_air_min_m,'nanmin');
[d_values_master_rad_sum,d_row_rad_sum,d_column_rad_sum]=
pivottable(p_doy_m,p_666,p_rad_avg_m,'nansum');

[h_values_ms,h_row_ms,h_column_ms]=pivottable(p_ora,[p_666
p_666],p_air_avg_m,'nanmean');

% Master_IW
master_iw=sum(d_values_master_air_avg((d_values_master_air_avg>10),1)-10);
% Master IH
master_ih=sum(((d_values_master_air_avg-10)+(d_values_master_air_max-10))
/2);
% Master_SET
master_set=sum(d_values_master_air_max-d_values_master_air_min);
% Master_IG
% Master_IFS
freddi_master=length(find(d_values_master_air_min<10));
master_ifs=sum(d_values_master_air_max-d_values_master_air_min)
```

```
*(freddi master+1);
% Master_CoolNI
master_cooln=nanmean(d_values_master_air_min);
%matrice indici totale
matrix_index_slave_air=
vertcat(air_avg_t,air_max_t,air_min_t,air_avg_sum_t,air_max_sum_t,air_min_s
um_t,iw_air,ih_air,set_air,ifs_air,CoolNI_air,MDN_index_air,d_index_rate_ai
r);
matrix index slave gra=
vertcat(rad_sum_t,gra_avg_t,gra_max_t,gra_min_t,gra_avg_sum_t,gra_max_sum_t
,gra_min_sum_t,iw_gra,ih_gra,set_gra,ifs_gra,CoolNI_grap,MDN_index_gra,d_in
dex_rate_gra);
matrix_index_master=
horzcat(master_iw,master_ih,master_set,master_ifs,master_cooln);

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
figure('name','pivot tgrape alta vigoria')
hold on
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot tair alta vigoria')
hold on
plot(h_row_air_avg,h_values_air_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot RAD alta vigoria')
hold on
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)


elseif v==4 %cortigliano

sname1=['Tair Master vs Tair Slave'];
eval(['figure(''Name'', sname1 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tair';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])
```

```
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])
%
sname2=['Tair Master vs Tgrape Slave'];
eval(['figure(''Name'', sname2 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tgrap';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])

sname22=['Tair Master vs Tleaf Slave'];
eval(['figure(''Name'', sname22 )'])
grid on
hold on
ss='N.Tempmedia';
s='N.Tleaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])
eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])


sname3=['precipitazioni Master vs bagnatura fogliare Slave'];
eval(['figure(''Name'', sname3 )'])
grid on
```

```
hold on
ss='N.Piogsomma';
s='N.Bagn_leaf';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])

sname4=['precipitazioni Master vs potenziale idrico 30 cm Slave'];
eval(['figure(''Name'', sname4 )'])
grid on
hold on
ss=N.Piogsomma/100;
s='N.T_heatsoil1';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['bar(N.JDTpc(mast),ss(mast),''r'',''BarWidth'',0.6)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master/100'',''A'',''E'',''H'',''I'',''L'',-1)'])

sname5=['precipitazioni Master vs potenziale idrico 60 cm Slave'];
eval(['figure(''Name'', sname5 )'])
grid on
hold on
ss=N.Piogsomma/100;
s='N.T_heatsoil2';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['bar(N.JDTpc(mast),ss(mast),''r'',''BarWidth'',0.6)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''y-.'',''LineWidth'',2)'])
eval(['legend(''Master/100'',''A'',''E'',''H'',''I'',''L'',-1)'])

sname6=['vento Master vs vento Slave'];
eval(['figure(''Name'', sname6 )'])
```

```
grid on
hold on
ss='N.VVent1Vmed';
s='N.VV';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==3 & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);
eval(['plot(N.JDTpc(mast),' ss '(mast),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''m+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''b-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''m-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''c+-'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''C'',''E'',''G'',''I'',''L'',-1)'])

sname7=['radiazione Master vs radiazione Slave'];
eval(['figure(''Name'', sname7 )'])
grid on
hold on
ss='N.RadGmedia';
s='N.Rad';
mast = find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.vigoria==0);
a=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==6 & N.vigoria==1);
b=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==7 & N.vigoria==1);
c=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==1 & N.vigoria==1);
d=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==3 & N.vigoria==1);
e=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==1);
f=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==4 & N.vigoria==1);
g=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==8 & N.vigoria==1);
h=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==2 & N.vigoria==1);
i=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==2);
l=find(N.JDTpc<=gf & N.JDTpc>=gi & N.Vigna==v & N.tesi==5 & N.vigoria==4);

eval(['plot(N.JDTpc(mast),' ss '(mast),''c+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(a),' s '(a),''g+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(b),' s '(b),''y+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(c),' s '(c),''k-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(d),' s '(d),''r+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(e),' s '(e),''g-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(f),' s '(f),''r-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(g),' s '(g),''y-.'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(h),' s '(h),''k+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(i),' s '(i),''b+-'',''LineWidth'',2)'])
eval(['plot(N.JDTpc(l),' s '(l),''b-.'',''LineWidth'',2)'])

eval(['legend(''Master'',''A'',''B'',''C'',''D'',''E'',''F'',''G'',''H'',''
I'',''L'',-1)'])



%pivot solo HV
p_ora=
vertcat(N.ora(a),N.ora(b),N.ora(c),N.ora(d),N.ora(e),N.ora(f),N.ora(g),N.or
a(h));
p_def=
vertcat(N.defogliazione(a),N.defogliazione(b),N.defogliazione(c),N.defoglia
zione(d),N.defogliazione(e),N.defogliazione(f),N.defogliazione(g),N.defogli
azione(h));
p_gem=
vertcat(N.gemme(a),N.gemme(b),N.gemme(c),N.gemme(d),N.gemme(e),N.gemme(f),N
.gemme(g),N.gemme(h));
p_dir=
vertcat(N.diradamento(a),N.diradamento(b),N.diradamento(c),N.diradamento(d)
,N.diradamento(e),N.diradamento(f),N.diradamento(g),N.diradamento(h));
p_grap=
vertcat(N.Tgrap(a),N.Tgrap(b),N.Tgrap(c),N.Tgrap(d),N.Tgrap(e),N.Tgrap(f),N
.Tgrap(g),N.Tgrap(h));
```

```
p_air=
vertcat(N.Tair(a),N.Tair(b),N.Tair(c),N.Tair(d),N.Tair(e),N.Tair(f),N.Tair(
g),N.Tair(h));
p_rad=
vertcat(N.Rad(a),N.Rad(b),N.Rad(c),N.Rad(d),N.Rad(e),N.Rad(f),N.Rad(g),N.Ra
d(h));
p_doy=
vertcat(N.Doy(a),N.Doy(b),N.Doy(c),N.Doy(d),N.Doy(e),N.Doy(f),N.Doy(g),N.Do
y(h));


[d_values_air_avg,d_row_air_avg,d_column_air_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmean');
[d_values_air_max,d_row_air_max,d_column_air_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmax');
[d_values_air_min,d_row_air_min,d_column_air_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_air,'nanmin');
[d_values_gra_avg,d_row_gra_avg,d_column_gra_avg]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmean');
[d_values_gra_max,d_row_gra_max,d_column_gra_max]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmax');
[d_values_gra_min,d_row_gra_min,d_column_gra_min]=pivottable(p_doy,[p_def
p_gem p_dir],p_grap,'nanmin');
[d_values_rad_sum,d_row_rad_sum,d_column_rad_sum]=pivottable(p_doy,[p_def
p_gem p_dir],p_rad,'nansum');

% %gap-filling e quality check per il 2009 CORTIGLIANO
% if styear==2009
% %     %tolgo la E
%      d_values_air_avg(:,3)=d_values_air_avg(:,4);
%      d_values_air_max(:,3)=d_values_air_max(:,4);
%      d_values_air_min(:,3)=d_values_air_min(:,4);
%      d_values_gra_avg(:,3)=d_values_gra_avg(:,4);
%      d_values_gra_max(:,3)=d_values_gra_max(:,4);
%      d_values_gra_min(:,3)=d_values_gra_min(:,4);
%      d_values_rad_sum(:,3)=d_values_rad_sum(:,4);
%      %valori dal 182 della L di cortilgiano mancanti
%     d_values_air_avg(1:9,8)=d_values_air_avg(1:9,7);
%     d_values_air_max(1:9,8)=d_values_air_max(1:9,7);
%     d_values_air_min(1:9,8)=d_values_air_min(1:9,7);
%     d_values_gra_avg(1:9,8)=d_values_gra_avg(1:9,7);
%     d_values_gra_max(1:9,8)=d_values_gra_max(1:9,7);
%     d_values_gra_min(1:9,8)=d_values_gra_min(1:9,7);
%     d_values_rad_sum(1:9,8)=d_values_rad_sum(1:9,7);
%
%    %tolgo la D
%     d_values_air_avg(:,5)=d_values_air_avg(:,6);
%     d_values_air_max(:,5)=d_values_air_max(:,6);
%     d_values_air_min(:,5)=d_values_air_min(:,6);
%     d_values_gra_avg(:,5)=d_values_gra_avg(:,6);
%     d_values_gra_max(:,5)=d_values_gra_max(:,6);
%     d_values_gra_min(:,5)=d_values_gra_min(:,6);
%     d_values_rad_sum(:,5)=d_values_rad_sum(:,6);
%     % ciclo per tutte le slave gap filling aria
%     for ixe=1:8
%      a_g=d_values_air_avg(:,ixe);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_avg(:,ixe)=a_g;
%      a_g=d_values_air_max(:,ixe);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_max(:,ixe)=a_g;
%      a_g=d_values_air_min(:,ixe);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
```

```
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_min(:,ixe)=a_g;
%     % ciclo per tutte le slave gap filling GRAPE
%      g_g=d_values_gra_avg(:,ixe);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,ixe)=g_g;
%      g_g=d_values_gra_max(:,ixe);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,ixe)=g_g;
%      g_g=d_values_gra_min(:,ixe);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,ixe)=g_g;
%          %gap filling radiazione
%      r_g=d_values_rad_sum(:,ixe);
%       xi = find(isnan(r_g));
%       x = 1:length(r_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
%       r_g(xi) = yi;
%       d_values_rad_sum(:,ixe)=r_g;
%       %%%%%%%%%%%%%%
%     end



% %gap-filling e quality check per il 2008 cortigliano
% if styear==2008
%     %gap filling aria H
%      a_g=d_values_air_avg(:,2);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_avg(:,2)=a_g;
%      a_g=d_values_air_max(:,2);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_max(:,2)=a_g;
%      a_g=d_values_air_min(:,2);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_min(:,2)=a_g;
%           %gap filling aria C
%      a_g=d_values_air_avg(:,1);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_avg(:,1)=a_g;
%      a_g=d_values_air_max(:,1);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
```

```
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_max(:,1)=a_g;
%      a_g=d_values_air_min(:,1);
%       xi = find(isnan(a_g));
%       x = 1:length(a_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, a_g(D), xi, 'linear', 'extrap');
%       a_g(xi) = yi;
%       d_values_air_min(:,1)=a_g;
%    %gap filling grape E
%      g_g=d_values_gra_avg(:,3);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,3)=g_g;
%      g_g=d_values_gra_max(:,3);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,3)=g_g;
%      g_g=d_values_gra_min(:,3);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,3)=g_g;
%    %gap filling grape D
%      g_g=d_values_gra_avg(:,5);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,5)=g_g;
%      g_g=d_values_gra_max(:,5);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,5)=g_g;
%      g_g=d_values_gra_min(:,5);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,5)=g_g;
%    %gap filling grape F
%      g_g=d_values_gra_avg(:,6);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_avg(:,6)=g_g;
%      g_g=d_values_gra_max(:,6);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_max(:,6)=g_g;
%      g_g=d_values_gra_min(:,6);
%       xi = find(isnan(g_g));
%       x = 1:length(g_g);
```

```
%       D = setdiff(x, xi);
%       yi = interp1(D, g_g(D), xi, 'linear', 'extrap');
%       g_g(xi) = yi;
%       d_values_gra_min(:,6)=g_g;
%           %gap filling radiazione H
%      r_g=d_values_rad_sum(:,2);
%       xi = find(isnan(r_g));
%       x = 1:length(r_g);
%       D = setdiff(x, xi);
%       yi = interp1(D, r_g(D), xi, 'linear', 'extrap');
%       r_g(xi) = yi;
%       d_values_rad_sum(:,2)=r_g;
%       %%%%%%%%%%%%%%
%     %tolgo la g e tutti i suoi parametri li imposto come la b che ha le
stesse due tipologie di def e gem
%     d_values_air_avg(:,8)=d_values_air_avg(:,7);
%     d_values_air_max(:,8)=d_values_air_max(:,7);
%     d_values_air_min(:,8)=d_values_air_min(:,7);
%     d_values_gra_avg(:,8)=d_values_gra_avg(:,7);
%     d_values_gra_max(:,8)=d_values_gra_max(:,7);
%     d_values_gra_min(:,8)=d_values_gra_min(:,7);
%     d_values_rad_sum(:,8)=d_values_rad_sum(:,7);
%end

% giorni medi (orari)
[h_values_air_avg,h_row_air_avg,h_column_air_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_air,'nanmean');
[h_values_gra_avg,h_row_gra_avg,h_column_gra_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_grap,'nanmean');
[h_values_rad_avg,h_row_rad_avg,h_column_rad_avg]=pivottable(p_ora,[p_def
p_gem p_dir],p_rad,'nanmean');
if styear==2008
    %la I la imposto come la M
    h_values_air_avg(:,8)=h_values_air_avg(:,7);
    h_values_gra_avg(:,8)=h_values_gra_avg(:,7);
    h_values_rad_avg(:,8)=h_values_rad_avg(:,7);
end
%orari solo def e gem quindi 4 serie
h_values_air_avg_tesi=
horzcat(nanmean(h_values_air_avg(:,1:2),2),nanmean(h_values_air_avg(:,3:4),
2),nanmean(h_values_air_avg(:,5:6),2),nanmean(h_values_air_avg(:,7:8),2));
h_values_gra_avg_tesi=
horzcat(nanmean(h_values_gra_avg(:,1:2),2),nanmean(h_values_gra_avg(:,3:4),
2),nanmean(h_values_gra_avg(:,5:6),2),nanmean(h_values_gra_avg(:,7:8),2));
h_values_rad_avg_tesi=
horzcat(nanmean(h_values_rad_avg(:,1:2),2),nanmean(h_values_rad_avg(:,3:4),
2),nanmean(h_values_rad_avg(:,5:6),2),nanmean(h_values_rad_avg(:,7:8),2));

%giornalieri solo def e gem quindi 4 serie
t_values_air_avg=
horzcat(mean(d_values_air_avg(:,1:2),2),mean(d_values_air_avg(:,3:4),2),mea
n(d_values_air_avg(:,5:6),2),mean(d_values_air_avg(:,7:8),2));
t_values_air_max=
horzcat(mean(d_values_air_max(:,1:2),2),mean(d_values_air_max(:,3:4),2),mea
n(d_values_air_max(:,5:6),2),mean(d_values_air_max(:,7:8),2));
t_values_air_min=
horzcat(mean(d_values_air_min(:,1:2),2),mean(d_values_air_min(:,3:4),2),mea
n(d_values_air_min(:,5:6),2),mean(d_values_air_min(:,7:8),2));
t_values_gra_avg=
horzcat(mean(d_values_gra_avg(:,1:2),2),mean(d_values_gra_avg(:,3:4),2),mea
n(d_values_gra_avg(:,5:6),2),mean(d_values_gra_avg(:,7:8),2));
t_values_gra_max=
horzcat(mean(d_values_gra_max(:,1:2),2),mean(d_values_gra_max(:,3:4),2),mea
n(d_values_gra_max(:,5:6),2),mean(d_values_gra_max(:,7:8),2));
t_values_gra_min=
horzcat(mean(d_values_gra_min(:,1:2),2),mean(d_values_gra_min(:,3:4),2),mea
n(d_values_gra_min(:,5:6),2),mean(d_values_gra_min(:,7:8),2));
t_values_rad_sum=
horzcat(mean(d_values_rad_sum(:,1:2),2),mean(d_values_rad_sum(:,3:4),2),mea
n(d_values_rad_sum(:,5:6),2),mean(d_values_rad_sum(:,7:8),2));

%indici per le tesi def e gem (4 serie nera-verde-rossa-gialla)
air_avg_t=nanmean(t_values_air_avg);
```

```
air_max_t=nanmean(t_values_air_max);
air_min_t=nanmean(t_values_air_min);
air_avg_sum_t=nansum(t_values_air_avg);
air_max_sum_t=nansum(t_values_air_max);
air_min_sum_t=nansum(t_values_air_min);
gra_avg_t=nanmean(t_values_gra_avg);
gra_max_t=nanmean(t_values_gra_max);
gra_min_t=nanmean(t_values_gra_min);
gra_avg_sum_t=nansum(t_values_gra_avg);
gra_max_sum_t=nansum(t_values_gra_max);
gra_min_sum_t=nansum(t_values_gra_min);
rad_sum_t=nansum(t_values_rad_sum);

% IW_air
iw_air_nero=sum(t_values_air_avg((t_values_air_avg(:,1)>10),1)-10);
iw_air_verde=sum(t_values_air_avg((t_values_air_avg(:,2)>10),2)-10);
iw_air_rosso=sum(t_values_air_avg((t_values_air_avg(:,3)>10),3)-10);
iw_air_giallo=sum(t_values_air_avg((t_values_air_avg(:,4)>10),4)-10);
iw_air=horzcat(iw_air_nero,iw_air_verde,iw_air_rosso,iw_air_giallo);
% IW_grape
iw_gra_nero=sum(t_values_gra_avg((t_values_gra_avg(:,1)>10),1)-10);
iw_gra_verde=sum(t_values_gra_avg((t_values_gra_avg(:,2)>10),2)-10);
iw_gra_rosso=sum(t_values_gra_avg((t_values_gra_avg(:,3)>10),3)-10);
iw_gra_giallo=sum(t_values_gra_avg((t_values_gra_avg(:,4)>10),4)-10);
iw_gra=horzcat(iw_gra_nero,iw_gra_verde,iw_gra_rosso,iw_gra_giallo);
% IH_air
ih_air_nero=sum(((t_values_air_avg(:,1)-10)+(t_values_air_max(:,1)-10))/2);
ih_air_verde=sum(((t_values_air_avg(:,2)-10)+(t_values_air_max(:,2)-10))
/2);
ih_air_rosso=sum(((t_values_air_avg(:,3)-10)+(t_values_air_max(:,3)-10))
/2);
ih_air_giallo=sum(((t_values_air_avg(:,4)-10)+(t_values_air_max(:,4)-10))
/2);
ih_air=horzcat(ih_air_nero,ih_air_verde,ih_air_rosso,ih_air_giallo);
% IH_grape
ih_gra_nero=sum(((t_values_gra_avg(:,1)-10)+(t_values_gra_max(:,1)-10))/2);
ih_gra_verde=sum(((t_values_gra_avg(:,2)-10)+(t_values_gra_max(:,2)-10))
/2);
ih_gra_rosso=sum(((t_values_gra_avg(:,3)-10)+(t_values_gra_max(:,3)-10))
/2);
ih_gra_giallo=sum(((t_values_gra_avg(:,4)-10)+(t_values_gra_max(:,4)-10))
/2);
ih_gra=horzcat(ih_gra_nero,ih_gra_verde,ih_gra_rosso,ih_gra_giallo);
% SET_air
set_air=sum(t_values_air_max-t_values_air_min);
% SET_grape
set_gra=sum(t_values_gra_max-t_values_gra_min);
% IG_air
% IG_grape
% IFS_air
freddi_air_nero=length(find(t_values_air_min(:,1)<10));
freddi_air_verde=length(find(t_values_air_min(:,2)<10));
freddi_air_rosso=length(find(t_values_air_min(:,3)<10));
freddi_air_giallo=length(find(t_values_air_min(:,4)<10));
ifs_air_nero=sum(t_values_air_max(:,1)-t_values_air_min(:,1))
*(freddi_air_nero+1);
ifs_air_verde=sum(t_values_air_max(:,2)-t_values_air_min(:,2))
*(freddi_air_verde+1);
ifs_air_rosso=sum(t_values_air_max(:,3)-t_values_air_min(:,3))
*(freddi_air_rosso+1);
ifs_air_giallo=sum(t_values_air_max(:,4)-t_values_air_min(:,4))
*(freddi_air_giallo+1);
ifs_air=horzcat(ifs_air_nero,ifs_air_verde,ifs_air_rosso,ifs_air_giallo);

% IFS_grape
freddi_gra_nero=length(find(t_values_gra_min(:,1)<10));
freddi_gra_verde=length(find(t_values_gra_min(:,2)<10));
freddi_gra_rosso=length(find(t_values_gra_min(:,3)<10));
freddi_gra_giallo=length(find(t_values_gra_min(:,4)<10));
ifs_gra_nero=sum(t_values_gra_max(:,1)-t_values_gra_min(:,1))
*(freddi_gra_nero+1);
ifs_gra_verde=sum(t_values_gra_max(:,2)-t_values_gra_min(:,2))
*(freddi_gra_verde+1);
```

```
ifs_gra_rosso=sum(t_values_gra_max(:,3)-t_values_gra_min(:,3))
*(freddi_gra_rosso+1);
ifs_gra_giallo=sum(t_values_gra_max(:,4)-t_values_gra_min(:,4))
*(freddi_gra_giallo+1);
ifs_gra=horzcat(ifs_gra_nero,ifs_gra_verde,ifs_gra_rosso,ifs_gra_giallo);
% CoolNI_air
CoolNI_air=air_min_t;
% CoolNI_grape
CoolNI_grap=gra_min_t;
% Morning(03-10)_Index_air
Morning_03_10_Index_air=nanmean(h_values_air_avg_tesi(4:11,:));
% Morning(03-10)_Index_grape
Morning_03_10_Index_grape=nanmean(h_values_gra_avg_tesi(4:11,:));
% Diurnal(11-18)_Index_air
Diurnal_11_18_Index_air=nanmean(h_values_air_avg_tesi(12:19,:));
% Diurnal(11-18)_Index_grape
Diurnal_11_18_Index_grape=nanmean(h_values_gra_avg_tesi(12:19,:));
% Night(19-02)_Index_air
Night_19_02_Index_air=
nanmean(vertcat(h_values_air_avg_tesi(20:24,:),h_values_air_avg_tesi(1:3,:)
));
% Night(19-02)_Index_grape
Night_19_02_Index_grape=
nanmean(vertcat(h_values_gra_avg_tesi(20:24,:),h_values_gra_avg_tesi(1:3,:)
));

MDN_index_air=
vertcat(Morning_03_10_Index_air,Diurnal_11_18_Index_air,Night_19_02_Index_a
ir);
MDN_index_gra=
vertcat(Morning_03_10_Index_grape,Diurnal_11_18_Index_grape,Night_19_02_Ind
ex_grape);

% dMorning_5_10_air=[2.9376 2.9804 2.9436 2.9687];
% dMorning_5_10_grape=[2.1089 2.1664 2.2037 2.8037];
% dTwilight_15_20_air=[-1.8499 -1.8052 -1.8686 -1.9616];
% dTwilight_15_20_grape=[-2.2782 -2.249 -2.4021 -2.4053];
% d_index_air=vertcat(dMorning_5_10_air,dTwilight_15_20_air);
% d_index_gra=vertcat(dMorning_5_10_grape,dTwilight_15_20_grape);

dMorning_rate_5_10_air=(h_values_air_avg_tesi(11,:)-
h_values_air_avg_tesi(6,:))/6;
dMorning_rate_5_10_grape=(h_values_gra_avg_tesi(11,:)-
h_values_gra_avg_tesi(6,:))/6;
dTwilight_rate_15_20_air=(h_values_air_avg_tesi(21,:)-
h_values_air_avg_tesi(16,:))/6;
dTwilight_rate_15_20_grape=(h_values_gra_avg_tesi(21,:)-
h_values_gra_avg_tesi(16,:))/6;
d_index_rate_air=vertcat(dMorning_rate_5_10_air,dTwilight_rate_15_20_air);
d_index_rate_gra=
vertcat(dMorning_rate_5_10_grape,dTwilight_rate_15_20_grape);
% per la master
p_doy_m=N.Doy(mast);
p_air_avg_m=N.Tempmedia(mast);
p_air_max_m=N.Tmax(mast);
p_air_min_m=N.Tmin(mast);
p_rad_avg_m=N.RadGmedia(mast);
p_666=N.defogliazione(mast);
[d_values_master_air_avg,d_row_master_air_avg,d_column_master_air_avg]=
pivottable(p_doy_m,p_666,p_air_avg_m,'nanmean');
[d_values_master_air_max,d_row_master_air_max,d_column_master_air_max]=
pivottable(p_doy_m,p_666,p_air_max_m,'nanmax');
[d_values_master_air_min,d_row_master_air_min,d_column_master_air_min]=
pivottable(p_doy_m,p_666,p_air_min_m,'nanmin');
[d_values_master_rad_sum,d_row_rad_sum,d_column_rad_sum]=
pivottable(p_doy_m,p_666,p_rad_avg_m,'nansum');

[h_values_ms,h_row_ms,h_column_ms]=pivottable(p_ora,[p_666
p_666],p_air_avg_m,'nanmean');

% Master_IW
master_iw=sum(d_values_master_air_avg((d_values_master_air_avg>10),1)-10);
% Master_IH
```

```
master_ih=sum(((d_values_master_air_avg-10)+(d_values_master_air_max-10))
/2);
% Master_SET
master_set=sum(d_values_master_air_max-d_values_master_air_min);
% Master_IG
% Master_IFS
freddi_master=length(find(d_values_master_air_min<10));
master_ifs=sum(d_values_master_air_max-d_values_master_air_min)
*(freddi_master+1);
% Master_CoolNI
master_cooln=nanmean(d_values_master_air_min);
%matrice indici totale
matrix_index_slave_air=
vertcat(air_avg_t,air_max_t,air_min_t,air_avg_sum_t,air_max_sum_t,air_min_s
um_t,iw_air,ih_air,set_air,ifs_air,CoolNI_air,MDN_index_air,d_index_rate_ai
r);
matrix_index_slave_gra=
vertcat(rad_sum_t,gra_avg_t,gra_max_t,gra_min_t,gra_avg_sum_t,gra_max_sum_t
,gra_min_sum_t,iw_gra,ih_gra,set_gra,ifs_gra,CoolNI_grap,MDN_index_gra,d_in
dex_rate_gra);
matrix_index_master=
horzcat(master_iw,master_ih,master_set,master_ifs,master_cooln);

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
figure('name','pivot tgrape alta vigoria')
hold on
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_gra_avg,h_values_gra_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot tair alta vigoria')
hold on
plot(h_row_air_avg,h_values_air_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_air_avg,h_values_air_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)
figure('name','pivot RAD alta vigoria')
hold on
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,1),'k+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,2),'g+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,3),'r+-','LineWidth',2)
plot(h_row_rad_avg,h_values_rad_avg_tesi(:,4),'y+-','LineWidth',2)
legend('A0-C0 non def + gemme 1(+potato)','A0-C1 non def + gemme 3(-
potato)','A1-C0 def + gemme 1(+potato)','A1-C1 def + gemme 3(-potato)',4)

end
```

# Allegato 1.10 – Script R Analisi statistica GLM

# Analisi statistica campione Tuscania brolio

## IBIMET CNR, Istituto di Biometeorologia di Firenze -CNR

*Matese.A.,Genesio L.,Crisci A.*

## Temperatura Grappolo brolio

### Temperatura Grappolo Mattina

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Morning"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -11.03 | -2.77 | -0.29 | 2.45 | 12.07 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 19.8375834 | 0.1249705 | 158.7381 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.2404122 | 0.0851675 | 2.8228 | 0.004773 | ** |
| as.factor(gemme)[T.3] | -0.0994415 | 0.0851675 | -1.1676 | 0.243006 | |
| as.factor(dirad)[T.1] | -0.4224085 | 0.0851675 | -4.9597 | 7.215e-07 | *** |
| AnnoF[T.A2009] | 0.7921477 | 0.1043168 | 7.5937 | 3.488e-14 | *** |
| AnnoF[T.A2010] | 0.0012369 | 0.1043168 | 0.0119 | 0.990540 | |
| as.factor(Mese)[T.7] | 1.3129257 | 0.1142102 | 11.4957 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.7632262 | 0.1132815 | 24.3926 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -0.3679966 | 0.1365208 | -2.6955 | 0.007043 | ** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

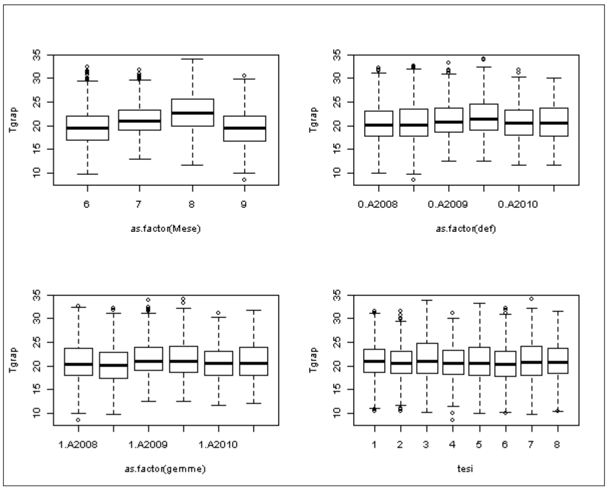
**(Dispersion parameter for gaussian family taken to be 13.53504 )**

- **Null deviance: 113429.7095 on 7463 degrees of freedom.**
- **Residual deviance: 100903.7396 on 7455 degrees of freedom.**

**AIC: 40639**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.813287579082058**




### Temperatura Grappolo Pieno giorno

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -14.86 | -3.16 | 0.12 | 3.23 | 13.98 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 26.952550 | 0.088702 | 303.8546 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.626291 | 0.061013 | 10.2649 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -0.401544 | 0.061013 | -6.5813 | 4.771e-11 | *** |
| as.factor(dirad)[T.1] | -0.203146 | 0.061013 | -3.3296 | 0.0008713 | *** |
| AnnoF[T.A2009] | 0.251382 | 0.074730 | 3.3639 | 0.0007700 | *** |
| AnnoF[T.A2010] | -0.646639 | 0.074710 | -8.6554 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 3.439895 | 0.078981 | 43.5533 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 5.938208 | 0.081194 | 73.1359 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.401841 | 0.104111 | 23.0699 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

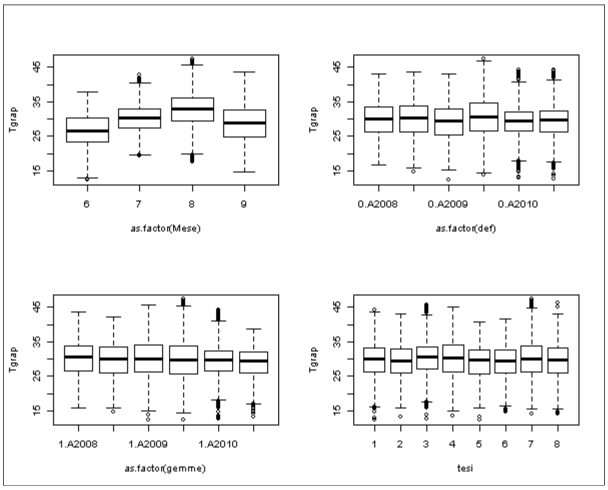
**(Dispersion parameter for gaussian family taken to be 19.94551 )**

- **Null deviance: 542433.9092 on 21431 degrees of freedom.**
- **Residual deviance: 427292.5778 on 21423 degrees of freedom.**

**AIC: 124978**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.995357037039312**




## Temperatura Cross Grappolo Pieno giorno

- 

**Call: glm(formula = Tgrap ~ as.factor(gemme) * as.factor(def) + as.factor(def) * Rad + as.factor(gemme) * Rad + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -13.94 | -3.16 | 0.10 | 3.15 | 15.08 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 10.3363867 | 0.7468131 | 13.8407 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | 3.5909449 | 0.8406753 | 4.2715 | 1.950e-05 | *** |
| as.factor(def)[T.1] | -1.9334809 | 0.8415030 | -2.2977 | 0.021591 | * |
| Rad | 0.0358928 | 0.0016632 | 21.5803 | < 2.2e-16 | *** |
| AnnoF[T.A2009] | 0.5580496 | 0.0736347 | 7.5786 | 3.634e-14 | *** |
| AnnoF[T.A2010] | 0.4572332 | 0.0813628 | 5.6197 | 1.937e-08 | *** |
| as.factor(Mese)[T.7] | 3.7264631 | 0.0777708 | 47.9159 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 6.4336690 | 0.0814275 | 79.0110 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.7646359 | 0.1025138 | 26.9684 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3]:as.factor(def)[T.1] | -0.1715167 | 0.1200995 | -1.4281 | 0.153272 | |
| as.factor(def)[T.1]:Rad | 0.0057663 | 0.0019042 | 3.0282 | 0.002463 | ** |
| as.factor(gemme)[T.3]:Rad | -0.0084361 | 0.0019285 | -4.3745 | 1.223e-05 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 18.99135 )**

- **Null deviance: 542433.9092 on 21431 degrees of freedom.**
- **Residual deviance: 406794.7191 on 21420 degrees of freedom.**

**AIC: 123931**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.998215855524105**

## Temperatura Grappolo Sera

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Evening"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -15.5508 | -3.0919 | 0.0041 | 3.1080 | 14.9776 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 24.903930 | 0.153132 | 162.6301 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.174106 | 0.104292 | 1.6694 | 0.09508 | . |
| as.factor(gemme)[T.3] | -0.586818 | 0.104292 | -5.6267 | 1.904e-08 | *** |
| as.factor(dirad)[T.1] | -0.016616 | 0.104292 | -0.1593 | 0.87342 | |
| AnnoF[T.A2009] | 0.710616 | 0.127733 | 5.5633 | 2.739e-08 | *** |
| AnnoF[T.A2010] | 0.165631 | 0.127746 | 1.2966 | 0.19482 | |
| as.factor(Mese)[T.7] | 3.876472 | 0.138210 | 28.0477 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 5.508687 | 0.140484 | 39.2123 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 3.104863 | 0.167435 | 18.5437 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

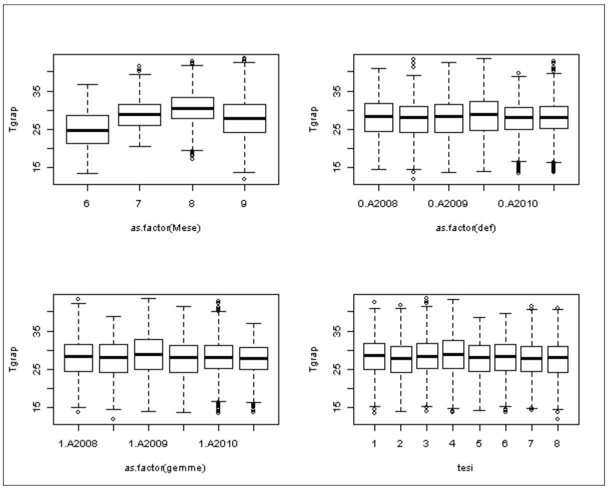
**(Dispersion parameter for gaussian family taken to be 20.35887 )**

- **Null deviance: 186713.6392 on 7486 degrees of freedom.**
- **Residual deviance: 152243.5988 on 7478 degrees of freedom.**

**AIC: 43820**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.989988147433551**




## Temperatura Grappolo Notte

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Notte"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -9.74 | -2.28 | -0.25 | 2.07 | 18.23 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 18.4529688 | 0.0598350 | 308.3975 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.0216344 | 0.0399207 | 0.5419 | 0.5879 | |
| as.factor(gemme)[T.3] | -0.2544214 | 0.0399207 | -6.3732 | 1.884e-10 | *** |

| | | | | | |
|---|---|---|---|---|---|
| as.factor(dirad)[T.1] | 0.0075563 | 0.0399207 | 0.1893 | 0.8499 | |
| AnnoF[T.A2009] | 1.1685946 | 0.0488977 | 23.8988 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.0142868 | 0.0489081 | -0.2921 | 0.7702 | |
| as.factor(Mese)[T.7] | 2.5688417 | 0.0552136 | 46.5255 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.8749999 | 0.0538479 | 53.3912 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.9205250 | 0.0631174 | 14.5843 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

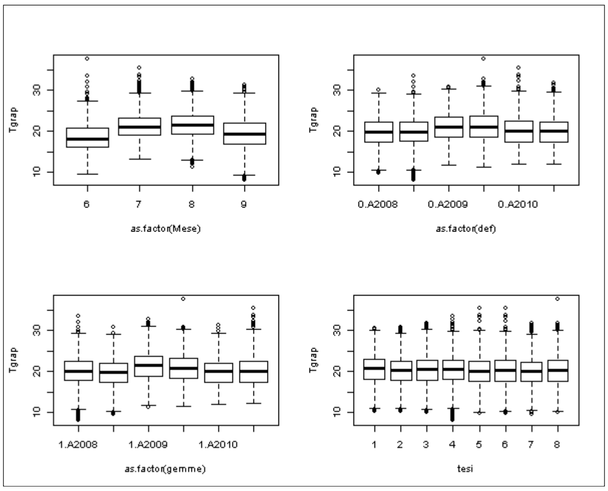
**(Dispersion parameter for gaussian family taken to be 9.830097 )**

- **Null deviance: 286260.9919 on 24672 degrees of freedom.**
- **Residual deviance: 242449.5103 on 24664 degrees of freedom.**

**AIC: 126419**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.830640242068615**




## Radiazione Grappolo Mattina

-

**Call: glm(formula = Rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Morning"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -370 | -33 | 13 | 41 | 127 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 413.4159 | 1.9730 | 209.5360 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -2.2015 | 1.3446 | -1.6373 | 0.1016162 | |
| as.factor(gemme)[T.3] | -4.7672 | 1.3446 | -3.5454 | 0.0003944 | *** |
| as.factor(dirad)[T.1] | 1.8397 | 1.3446 | 1.3682 | 0.1712896 | |
| AnnoF[T.A2009] | -12.9457 | 1.6469 | -7.8605 | 4.363e-15 | *** |
| AnnoF[T.A2010] | -23.1291 | 1.6469 | -14.0437 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -17.6884 | 1.8031 | -9.8099 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.2699 | 1.7885 | 1.2692 | 0.2044224 | |
| as.factor(Mese)[T.9] | -25.1218 | 2.1554 | -11.6555 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

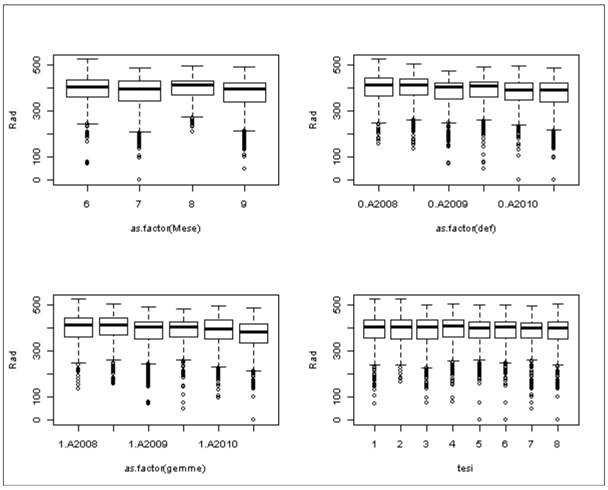
**(Dispersion parameter for gaussian family taken to be 3373.663 )**

- **Null deviance: 26781259.4948 on 7463 degrees of freedom.**
- **Residual deviance: 25150660.3057 on 7455 degrees of freedom.**

**AIC: 81829**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Radiazione Grappolo Pieno giorno

- 

**Call: glm(formula = Rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -182.6 | -16.8 | -1.9 | 17.5 | 98.7 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 459.70987 | 0.54955 | 836.5227 | <2e-16 | *** |
| as.factor(def)[T.1] | 3.90797 | 0.37800 | 10.3385 | <2e-16 | *** |
| as.factor(gemme)[T.3] | -6.64234 | 0.37800 | -17.5723 | <2e-16 | *** |
| as.factor(dirad)[T.1] | 0.22500 | 0.37800 | 0.5952 | 0.5517 | |
| AnnoF[T.A2009] | -8.80987 | 0.46299 | -19.0283 | <2e-16 | *** |
| AnnoF[T.A2010] | -32.52705 | 0.46286 | -70.2742 | <2e-16 | *** |
| as.factor(Mese)[T.7] | -8.70228 | 0.48932 | -17.7843 | <2e-16 | *** |
| as.factor(Mese)[T.8] | -15.25704 | 0.50303 | -30.3301 | <2e-16 | *** |
| as.factor(Mese)[T.9] | -11.07925 | 0.64502 | -17.1767 | <2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

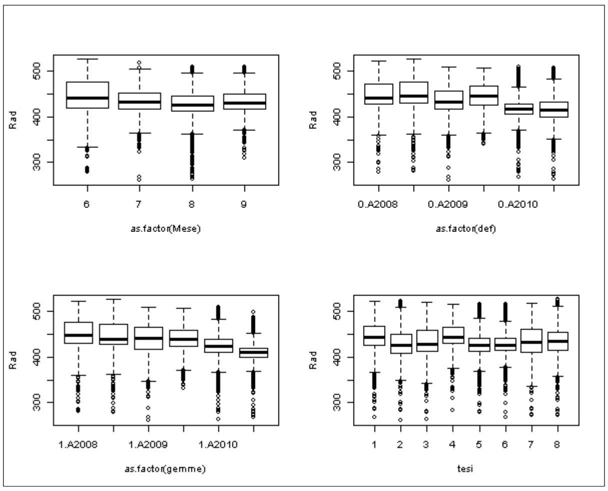
**(Dispersion parameter for gaussian family taken to be 765.5775 )**

- **Null deviance: 21520059.1578 on 21431 degrees of freedom.**
- **Residual deviance: 16400967.3276 on 21423 degrees of freedom.**

**AIC: 203154**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Radiazione Cross Grappolo Pieno giorno

- 

**Call: glm(formula = Rad ~ as.factor(gemme) * as.factor(def) + as.factor(def) * Tgrap + as.factor(gemme) * Tgrap + AnnoF + as.factor(Mese), family =**

**gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -169.5 | -16.4 | -1.8 | 17.5 | 101.1 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 412.459379 | 1.993456 | 206.9067 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | 21.176666 | 2.228280 | 9.5036 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -2.769048 | 2.270925 | -1.2193 | 0.22273 | |
| Tgrap | 1.747915 | 0.066906 | 26.1250 | < 2.2e-16 | *** |
| AnnoF[T.A2009] | -9.134590 | 0.450716 | -20.2668 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -31.698072 | 0.450640 | -70.3401 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -13.207888 | 0.496244 | -26.6157 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -23.255863 | 0.546549 | -42.5503 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -14.579190 | 0.634935 | -22.9617 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3]:as.factor(def)[T.1] | 3.517399 | 0.736811 | 4.7738 | 1.820e-06 | *** |
| as.factor(def)[T.1]:Tgrap | 0.135602 | 0.073577 | 1.8430 | 0.06535 | . |
| as.factor(gemme)[T.3]:Tgrap | -0.972523 | 0.073356 | -13.2576 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 723.1125 )**

- **Null deviance: 21520059.1578 on 21431 degrees of freedom.**
- **Residual deviance: 15489069.6758 on 21420 degrees of freedom.**

**AIC: 201934**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**

## Radiazione Grappolo Sera

-

**Call: glm(formula = Rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Evening"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -263 | -32 | 5 | 40 | 140 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 395.363687 | 1.889261 | 209.2689 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 3.746665 | 1.286701 | 2.9118 | 0.003604 | ** |
| as.factor(gemme)[T.3] | -0.098081 | 1.286701 | -0.0762 | 0.939241 | |
| as.factor(dirad)[T.1] | 7.475624 | 1.286701 | 5.8099 | 6.507e-09 | *** |
| AnnoF[T.A2009] | -25.751243 | 1.575901 | -16.3406 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -18.238632 | 1.576059 | -11.5723 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -10.651164 | 1.705154 | -6.2465 | 4.429e-10 | *** |
| as.factor(Mese)[T.8] | -28.389874 | 1.733208 | -16.3800 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -1.961249 | 2.065716 | -0.9494 | 0.342434 | |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

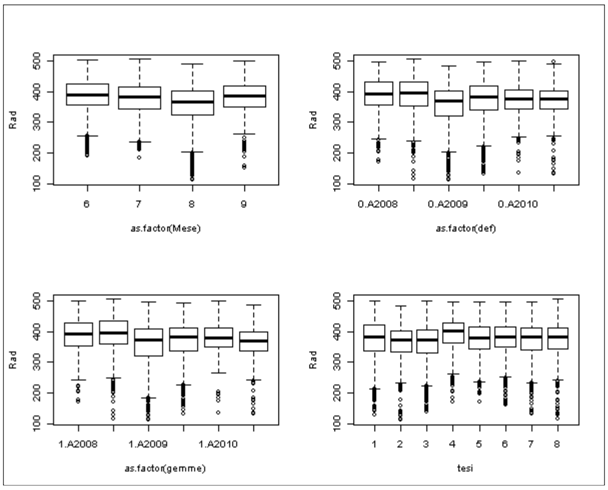
**(Dispersion parameter for gaussian family taken to be 3098.87 )**

- **Null deviance: 25150308.9245 on 7486 degrees of freedom.**
- **Residual deviance: 23173350.567 on 7478 degrees of freedom.**

**AIC: 81445**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Temperatura Aria Canopy Mattina

- 

**Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Morning"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -11.86 | -3.20 | -0.36 | 2.94 | 13.93 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 20.279314 | 0.140297 | 144.5461 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.037585 | 0.095612 | -0.3931 | 0.69426 | |
| as.factor(gemme)[T.3] | -0.437374 | 0.095612 | -4.5745 | 4.852e-06 | *** |
| as.factor(dirad)[T.1] | -0.448567 | 0.095612 | -4.6915 | 2.760e-06 | *** |
| AnnoF[T.A2009] | 0.853391 | 0.117110 | 7.2871 | 3.492e-13 | *** |
| AnnoF[T.A2010] | -0.232588 | 0.117110 | -1.9861 | 0.04706 | * |
| as.factor(Mese)[T.7] | 2.578945 | 0.128217 | 20.1140 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 4.451447 | 0.127174 | 35.0028 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.753340 | 0.153263 | 4.9153 | 9.053e-07 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

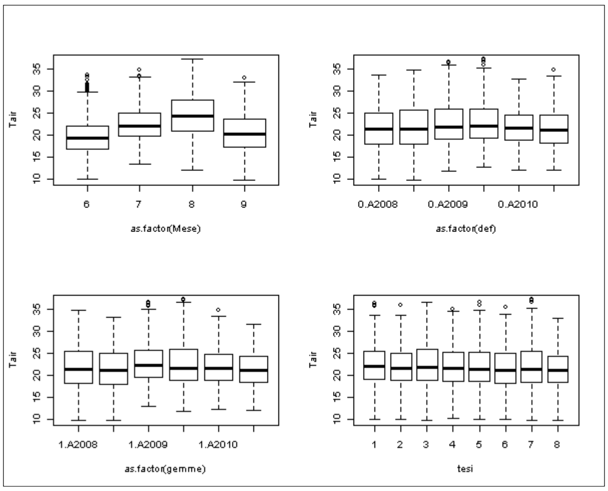
**(Dispersion parameter for gaussian family taken to be 17.05841 )**

- **Null deviance: 153126.5432 on 7463 degrees of freedom.**
- **Residual deviance: 127170.4584 on 7455 degrees of freedom.**

**AIC: 42366**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.969115577999602**




## Temperatura Aria Canopy Pieno giorno

- 

**Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset =**

((jd > 153) & (jd < 260) & Code == "Full_day"))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -15.57 | -2.94 | 0.24 | 3.25 | 11.92 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 27.693147 | 0.087133 | 317.8262 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.110793 | 0.059934 | 1.8486 | 0.0645296 | . |
| as.factor(gemme)[T.3] | -0.280924 | 0.059934 | -4.6873 | 2.786e-06 | *** |
| as.factor(dirad)[T.1] | -0.195693 | 0.059934 | -3.2652 | 0.0010957 | ** |
| AnnoF[T.A2009] | 0.265087 | 0.073409 | 3.6111 | 0.0003056 | *** |
| AnnoF[T.A2010] | -0.743082 | 0.073388 | -10.1254 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 4.701591 | 0.077584 | 60.5999 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 5.572281 | 0.079758 | 69.8650 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.461912 | 0.102270 | 14.2947 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

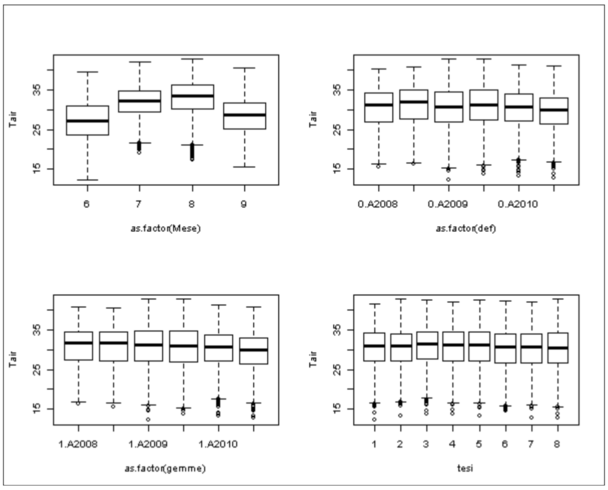
**(Dispersion parameter for gaussian family taken to be 19.24608 )**

- **Null deviance: 536233.1345 on 21431 degrees of freedom.**
- **Residual deviance: 412308.7033 on 21423 degrees of freedom.**

**AIC: 124213**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.99691811844439**




## Temperatura Aria Crossing Canopy Pieno giorno

- 

**Call: glm(formula = Tair ~ as.factor(gemme) * as.factor(def) + as.factor(dirad) + as.factor(def) * Rad + as.factor(gemme) * Rad + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -14.09 | -2.94 | 0.21 | 3.13 | 12.35 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 19.3342460 | 0.7439200 | 25.9897 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -1.4100524 | 0.8330089 | -1.6927 | 0.09052 | . |
| as.factor(def)[T.1] | -5.7995439 | 0.8384328 | -6.9171 | 4.739e-12 | *** |
| as.factor(dirad)[T.1] | -0.2500962 | 0.0593302 | -4.2153 | 2.504e-05 | *** |
| Rad | 0.0174472 | 0.0016515 | 10.5647 | < 2.2e-16 | *** |
| AnnoF[T.A2009] | 0.4680698 | 0.0729607 | 6.4154 | 1.434e-10 | *** |
| AnnoF[T.A2010] | 0.1343940 | 0.0806177 | 1.6671 | 0.09552 | . |
| as.factor(Mese)[T.7] | 4.9425047 | 0.0770583 | 64.1398 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 5.9915803 | 0.0806814 | 74.2622 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.7753891 | 0.1015747 | 17.4787 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3]:as.factor(def)[T.1] | -0.5784167 | 0.1190057 | -4.8604 | 1.180e-06 | *** |
| as.factor(def)[T.1]:Rad | 0.0139675 | 0.0018974 | 7.3615 | 1.884e-13 | *** |

| | | | | | |
|---|---|---|---|---|---|
| as.factor(gemme)[T.3]:Rad | 0.0036288 | 0.0019109 | 1.8990 | 0.05757 | . |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 18.64488 )**

- **Null deviance: 536233.1345 on 21431 degrees of freedom.**
- **Residual deviance: 399354.652 on 21419 degrees of freedom.**

**AIC: 123537**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.99831609648927**

## Temperatura Aria Canopy Sera

-

**Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Evening"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -12.632 | -3.058 | 0.043 | 3.098 | 13.796 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 25.315897 | 0.151135 | 167.5053 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.093255 | 0.102932 | 0.9060 | 0.3649707 | |
| as.factor(gemme)[T.3] | -0.370186 | 0.102932 | -3.5964 | 0.0003247 | *** |
| as.factor(dirad)[T.1] | -0.132229 | 0.102932 | -1.2846 | 0.1989647 | |
| AnnoF[T.A2009] | 0.480240 | 0.126067 | 3.8094 | 0.0001404 | *** |
| AnnoF[T.A2010] | -0.070734 | 0.126080 | -0.5610 | 0.5747946 | |
| as.factor(Mese)[T.7] | 4.455852 | 0.136407 | 32.6659 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 4.398258 | 0.138651 | 31.7218 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.537906 | 0.165251 | 9.3065 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

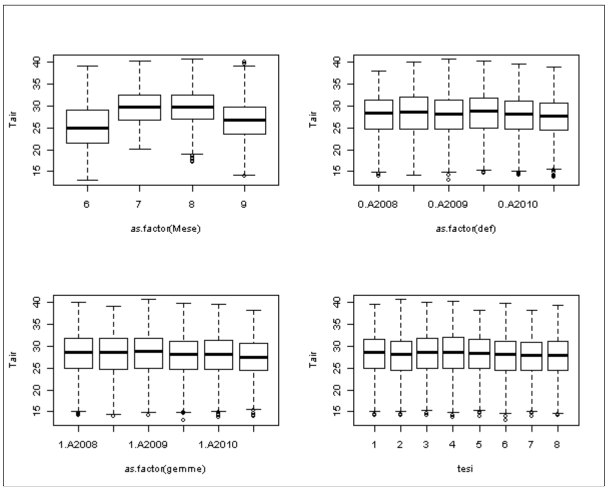
**(Dispersion parameter for gaussian family taken to be 19.8312 )**

- **Null deviance: 178303.1575 on 7486 degrees of freedom.**
- **Residual deviance: 148297.7247 on 7478 degrees of freedom.**

**AIC: 43624**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.981824322951395**




## Temperatura Aria Canopy Notte

-

**Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new, subset = ((jd > 153) & (jd < 260) & Code == "Notte"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| -9.42 | -2.28 | -0.18 | 2.13 | 17.59 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 18.804516 | 0.059224 | 317.5141 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.010954 | 0.039513 | -0.2772 | 0.7816028 | |
| as.factor(gemme)[T.3] | -0.375168 | 0.039513 | -9.4948 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -0.173271 | 0.039513 | -4.3851 | 1.164e-05 | *** |
| AnnoF[T.A2009] | 0.916791 | 0.048399 | 18.9425 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.173569 | 0.048409 | -3.5855 | 0.0003371 | *** |
| as.factor(Mese)[T.7] | 2.938624 | 0.054650 | 53.7717 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.738314 | 0.053298 | 51.3773 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.637432 | 0.062473 | 10.2033 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

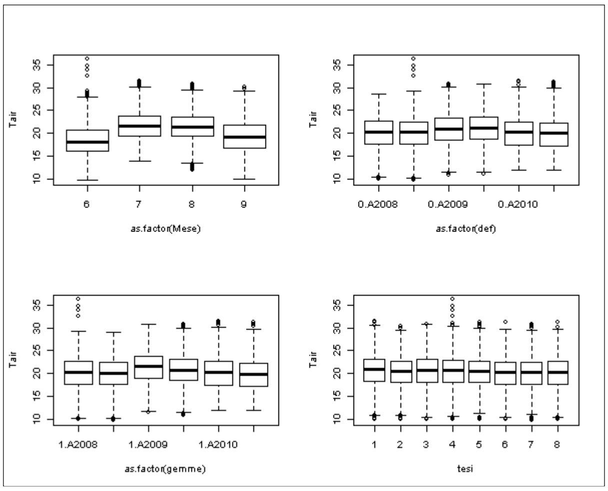
**(Dispersion parameter for gaussian family taken to be 9.63042 )**

- **Null deviance: 285159.7735 on 24672 degrees of freedom.**
- **Residual deviance: 237524.6602 on 24664 degrees of freedom.**

**AIC: 125912**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.854955386089027**




## Analisi indici giornalieri radiazione brolio

### radiazione media : avg_rad brolio

- 

**Call: glm(formula = avg_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -44.790 | -7.891 | 0.064 | 8.283 | 37.236 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 286.94970 | 0.75469 | 380.2226 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 2.12050 | 0.51305 | 4.1331 | 3.695e-05 | *** |
| as.factor(gemme)[T.3] | -2.31498 | 0.51305 | -4.5122 | 6.709e-06 | *** |
| as.factor(dirad)[T.1] | 1.63065 | 0.51305 | 3.1783 | 0.001499 | ** |
| AnnoF[T.A2009] | -10.26900 | 0.62836 | -16.3427 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -17.76073 | 0.62836 | -28.2654 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -11.20924 | 0.68231 | -16.4285 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -32.89100 | 0.68231 | -48.2057 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -50.07822 | 0.83997 | -59.6190 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 167.4083 )**

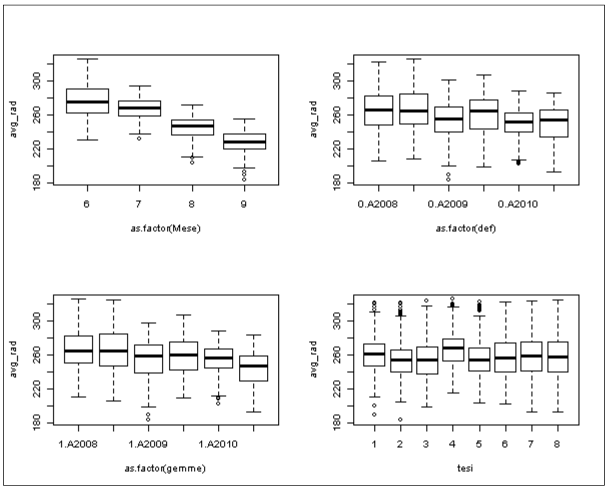
- **Null deviance: 1352399.4162 on 2543 degrees of freedom.**

- **Residual deviance: 424380.0538 on 2535 degrees of freedom.**

**AIC: 20257**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## cumulata radiazione : sum_rad brolio

- 

**Call: glm(formula = sum_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1079.37 | -189.29 | 0.54 | 198.85 | 1660.87 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 6889.164 | 18.210 | 378.3230 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 51.911 | 12.379 | 4.1934 | 2.843e-05 | *** |
| as.factor(gemme)[T.3] | -56.578 | 12.379 | -4.5704 | 5.101e-06 | *** |
| as.factor(dirad)[T.1] | 40.155 | 12.379 | 3.2437 | 0.001195 | ** |
| AnnoF[T.A2009] | -247.984 | 15.161 | -16.3562 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -427.786 | 15.161 | -28.2153 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -270.884 | 16.463 | -16.4539 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -791.246 | 16.463 | -48.0615 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -1203.739 | 20.268 | -59.3925 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

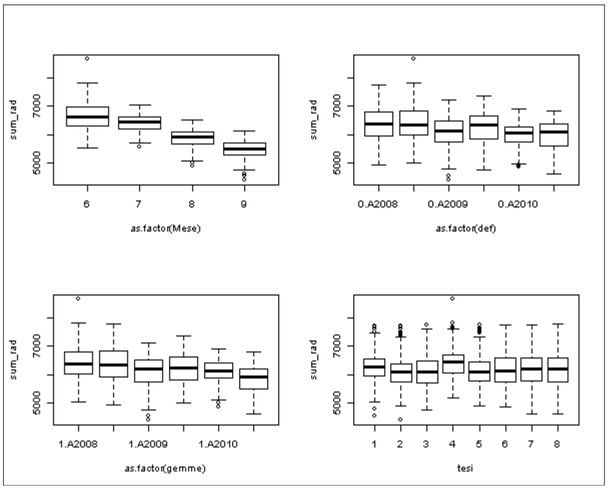
**(Dispersion parameter for gaussian family taken to be 97465.06 )**

- **Null deviance: 783631229.9957 on 2543 degrees of freedom.**
- **Residual deviance: 247073937.1971 on 2535 degrees of freedom.**

**AIC: 36454**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## escursione radiazione: et_rad brolio

•

**Call: glm(formula = et_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -66.17 | -16.33 | 0.58 | 15.36 | 64.04 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 486.53030 | 1.25502 | 387.6687 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 3.86505 | 0.85318 | 4.5302 | 6.167e-06 | *** |
| as.factor(gemme)[T.3] | -11.44332 | 0.85318 | -13.4125 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | 0.20202 | 0.85318 | 0.2368 | 0.8128463 | |
| AnnoF[T.A2009] | -13.51530 | 1.04493 | -12.9342 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -34.22067 | 1.04493 | -32.7493 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -1.86048 | 1.13464 | -1.6397 | 0.1011918 | |
| as.factor(Mese)[T.8] | -5.75166 | 1.13464 | -5.0691 | 4.285e-07 | *** |
| as.factor(Mese)[T.9] | -5.08686 | 1.39684 | -3.6417 | 0.0002763 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

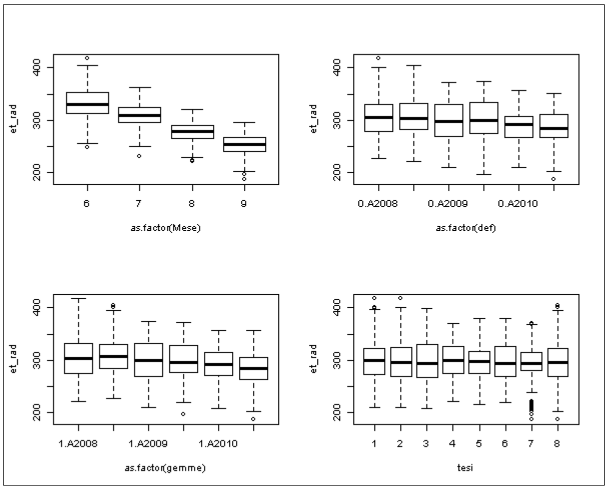
**(Dispersion parameter for gaussian family taken to be 462.9559 )**

- **Null deviance: 1784661.4866 on 2543 degrees of freedom.**
- **Residual deviance: 1173593.2552 on 2535 degrees of freedom.**

**AIC: 22845**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## media ore 3-10 radiazione: morning_03_10_index_rad brolio

•

**Call: glm(formula = morning_03_10_index_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -80.53 | -15.10 | -0.11 | 14.19 | 73.54 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 343.84366 | 1.27881 | 268.8783 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.38517 | 0.86936 | -0.4431 | 0.6577633 | |
| as.factor(gemme)[T.3] | -2.86950 | 0.86936 | -3.3007 | 0.0009777 | *** |
| as.factor(dirad)[T.1] | 0.20739 | 0.86936 | 0.2386 | 0.8114681 | |
| AnnoF[T.A2009] | -7.75788 | 1.06474 | -7.2862 | 4.238e-13 | *** |
| AnnoF[T.A2010] | -21.00336 | 1.06474 | -19.7263 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -21.87254 | 1.15616 | -18.9183 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -55.12334 | 1.15616 | -47.6782 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -79.90826 | 1.42332 | -56.1422 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

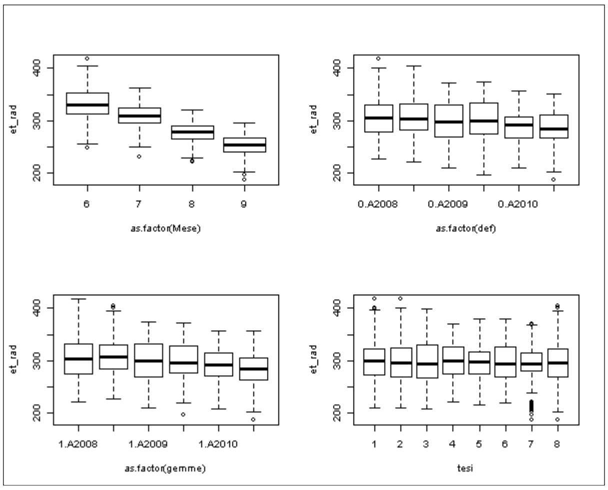
**(Dispersion parameter for gaussian family taken to be 480.6754 )**

- **Null deviance: 3419787.0276 on 2543 degrees of freedom.**
- **Residual deviance: 1218512.1791 on 2535 degrees of freedom.**

**AIC: 22940**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## media ore 11-18 radiazione: diurnal_11_18_index_rad brolio

- 

**Call: glm(formula = diurnal_11_18_index_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -78.39 | -12.99 | 0.49 | 12.74 | 68.68 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 448.00633 | 1.20304 | 372.3946 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 4.62366 | 0.81785 | 5.6534 | 1.749e-08 | *** |
| as.factor(gemme)[T.3] | -5.93435 | 0.81785 | -7.2561 | 5.272e-13 | *** |
| as.factor(dirad)[T.1] | 1.26604 | 0.81785 | 1.5480 | 0.1217 | |
| AnnoF[T.A2009] | -12.87069 | 1.00166 | -12.8494 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -31.30466 | 1.00166 | -31.2529 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -5.74420 | 1.08766 | -5.2813 | 1.392e-07 | *** |
| as.factor(Mese)[T.8] | -12.94887 | 1.08766 | -11.9053 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -16.82934 | 1.33899 | -12.5687 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

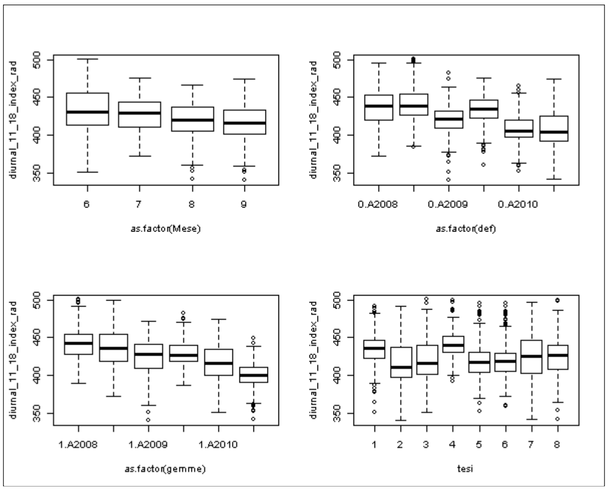
**(Dispersion parameter for gaussian family taken to be 425.4054 )**

- Null deviance: 1629860.599 on 2543 degrees of freedom.
- Residual deviance: 1078402.6938 on 2535 degrees of freedom.

**AIC: 22629**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**



## media ore 19-02 radiazione: night_19_02_index_rad brolio

-

**Call: glm(formula = night_19_02_index_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -51.3 | -11.9 | -0.8 | 12.1 | 202.8 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 69.29554 | 1.03108 | 67.2069 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 2.25037 | 0.70094 | 3.2105 | 0.001342 | ** |
| as.factor(gemme)[T.3] | 1.73156 | 0.70094 | 2.4703 | 0.013565 | * |
| as.factor(dirad)[T.1] | 3.54589 | 0.70094 | 5.0587 | 4.523e-07 | *** |
| AnnoF[T.A2009] | -10.36946 | 0.85848 | -12.0789 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -1.16521 | 0.85848 | -1.3573 | 0.174807 | |
| as.factor(Mese)[T.7] | -6.24375 | 0.93219 | -6.6980 | 2.594e-11 | *** |
| as.factor(Mese)[T.8] | -30.83354 | 0.93219 | -33.0766 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -53.72983 | 1.14759 | -46.8195 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

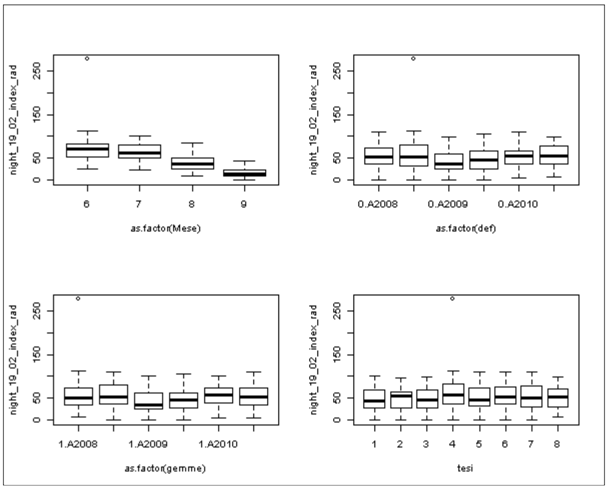
**(Dispersion parameter for gaussian family taken to be 312.4816 )**

- Null deviance: 1769934.4933 on 2543 degrees of freedom.
- Residual deviance: 792140.9562 on 2535 degrees of freedom.

**AIC: 21845**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## errore standard mattutino tra le ore 5-10 radiazione: dmorn_stderr_5_10_rad brolio

- 

**Call: glm(formula = dmorn_stderr_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -29.6 | -6.8 | -1.4 | 6.1 | 73.2 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 17.99572 | 0.63389 | 28.3894 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.98005 | 0.43093 | -2.2743 | 0.0230319 | * |
| as.factor(gemme)[T.3] | -2.78616 | 0.43093 | -6.4655 | 1.207e-10 | *** |
| as.factor(dirad)[T.1] | 1.66727 | 0.43093 | 3.8690 | 0.0001120 | *** |
| AnnoF[T.A2009] | 0.36946 | 0.52778 | 0.7000 | 0.4839707 | |
| AnnoF[T.A2010] | 2.28699 | 0.52778 | 4.3333 | 1.526e-05 | *** |
| as.factor(Mese)[T.7] | 6.40128 | 0.57309 | 11.1697 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 23.48640 | 0.57309 | 40.9820 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 43.80192 | 0.70552 | 62.0845 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

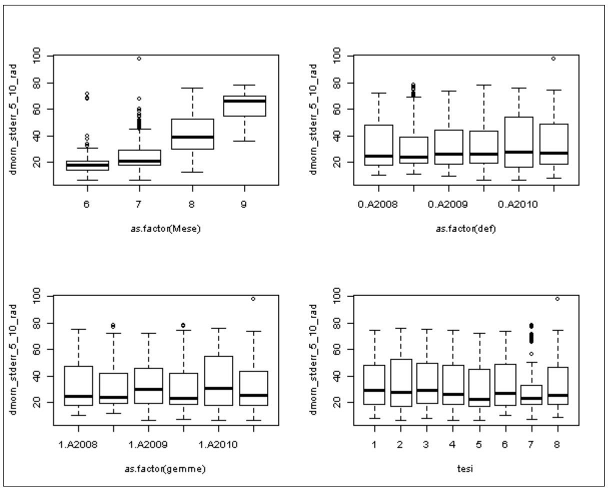
**(Dispersion parameter for gaussian family taken to be 118.1047 )**

- **Null deviance: 873088.4668 on 2543 degrees of freedom.**
- **Residual deviance: 299395.3648 on 2535 degrees of freedom.**

**AIC: 19369**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## varianza mattutina tra le ore 5-10 radiazione: dmorn_var_5_10_rad brolio

- 

**Call: glm(formula = dmorn_var_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -15747 | -2861 | -728 | 1915 | 52816 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 2193.176 | 328.785 | 6.6706 | 3.118e-11 | *** |
| as.factor(def)[T.1] | -616.716 | 223.514 | -2.7592 | 0.005836 | ** |
| as.factor(gemme)[T.3] | -1357.813 | 223.514 | -6.0749 | 1.428e-09 | *** |
| as.factor(dirad)[T.1] | 929.338 | 223.514 | 4.1579 | 3.319e-05 | *** |
| AnnoF[T.A2009] | 95.963 | 273.747 | 0.3506 | 0.725954 | |
| AnnoF[T.A2010] | 1478.485 | 273.747 | 5.4009 | 7.247e-08 | *** |
| as.factor(Mese)[T.7] | 1907.631 | 297.250 | 6.4176 | 1.647e-10 | *** |
| as.factor(Mese)[T.8] | 9398.335 | 297.250 | 31.6176 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 21206.245 | 365.939 | 57.9502 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

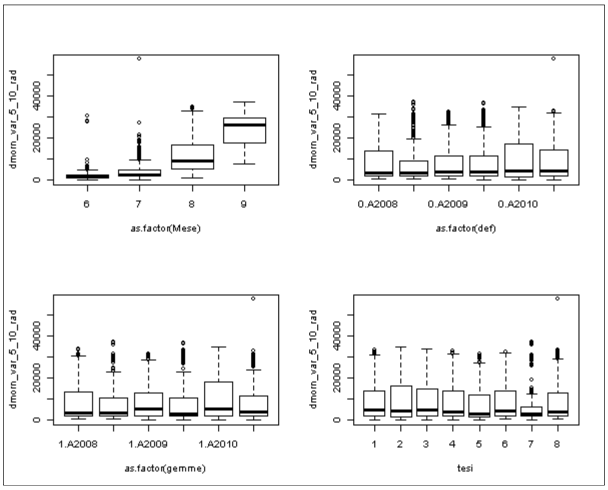
**(Dispersion parameter for gaussian family taken to be 31773478 )**

- **Null deviance: 212781084030.239 on 2543 degrees of freedom.**
- **Residual deviance: 80545765471.085 on 2535 degrees of freedom.**

**AIC: 51176**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## errore standard serale tra le ore 15-20 radiazione: dtwi_stderr_15_20_rad brolio

- 

**Call: glm(formula = dtwi_stderr_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -33.92 | -9.99 | 0.27 | 9.78 | 31.71 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 41.33695 | 0.77325 | 53.4587 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.99282 | 0.52567 | -1.8887 | 0.05905 | . |
| as.factor(gemme)[T.3] | -2.48416 | 0.52567 | -4.7257 | 2.418e-06 | *** |
| as.factor(dirad)[T.1] | -2.46366 | 0.52567 | -4.6867 | 2.923e-06 | *** |
| AnnoF[T.A2009] | 4.26667 | 0.64381 | 6.6272 | 4.164e-11 | *** |
| AnnoF[T.A2010] | -5.31298 | 0.64381 | -8.2524 | 2.465e-16 | *** |
| as.factor(Mese)[T.7] | 4.51986 | 0.69909 | 6.4654 | 1.208e-10 | *** |
| as.factor(Mese)[T.8] | 24.59178 | 0.69909 | 35.1770 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 37.03255 | 0.86063 | 43.0295 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

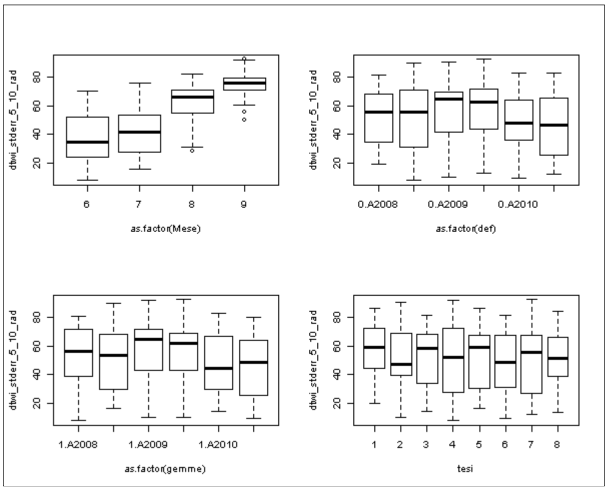
**(Dispersion parameter for gaussian family taken to be 175.7445 )**

- Null deviance: 970562.8436 on 2543 degrees of freedom.
- Residual deviance: 445512.2769 on 2535 degrees of freedom.

**AIC: 20381**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## varianza serale tra le ore 15-20 radiazione: dtwi_var_15_20_rad brolio

-

**Call: glm(formula = dtwi_var_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -19799 | -5932 | -717 | 5564 | 20632 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 12086.62 | 447.03 | 27.0376 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -164.56 | 303.90 | -0.5415 | 0.5882 | |
| as.factor(gemme)[T.3] | -1481.66 | 303.90 | -4.8755 | 1.152e-06 | *** |
| as.factor(dirad)[T.1] | -1581.28 | 303.90 | -5.2033 | 2.115e-07 | *** |
| AnnoF[T.A2009] | 2589.72 | 372.20 | 6.9579 | 4.380e-12 | *** |
| AnnoF[T.A2010] | -3302.55 | 372.20 | -8.8731 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 2210.07 | 404.15 | 5.4684 | 4.986e-08 | *** |
| as.factor(Mese)[T.8] | 14074.53 | 404.15 | 34.8246 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 23838.82 | 497.55 | 47.9128 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

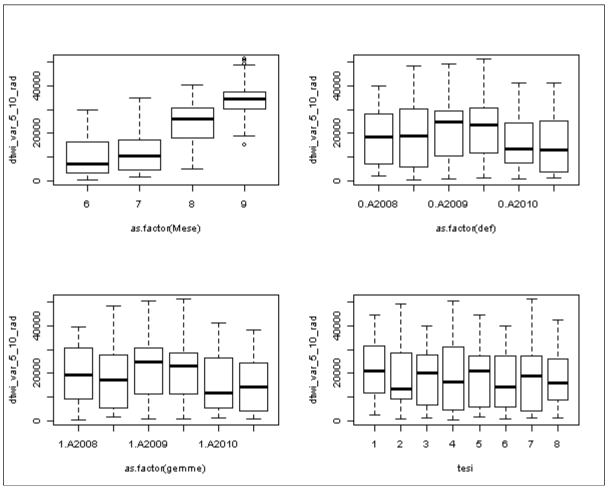
**(Dispersion parameter for gaussian family taken to be 58737453 )**

- Null deviance: 353900132461.147 on 2543 degrees of freedom.
- Residual deviance: 148899444124.702 on 2535 degrees of freedom.

**AIC: 52739**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Analisi indici giornalieri temperatura grappolo brolio

### temperatura media: avg_tgrap brolio

•

**Call: glm(formula = avg_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -7.931 | -1.963 | 0.081 | 2.038 | 6.574 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 22.66832 | 0.16169 | 140.1999 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.27962 | 0.10992 | 2.5439 | 0.0110205 | * |
| as.factor(gemme)[T.3] | -0.32817 | 0.10992 | -2.9857 | 0.0028567 | ** |
| as.factor(dirad)[T.1] | -0.12222 | 0.10992 | -1.1120 | 0.2662591 | |
| AnnoF[T.A2009] | 0.75185 | 0.13462 | 5.5850 | 2.587e-08 | *** |
| AnnoF[T.A2010] | -0.20110 | 0.13462 | -1.4938 | 0.1353450 | |
| as.factor(Mese)[T.7] | 2.86117 | 0.14618 | 19.5731 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.72093 | 0.14618 | 25.4548 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.65208 | 0.17996 | 3.6236 | 0.0002963 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

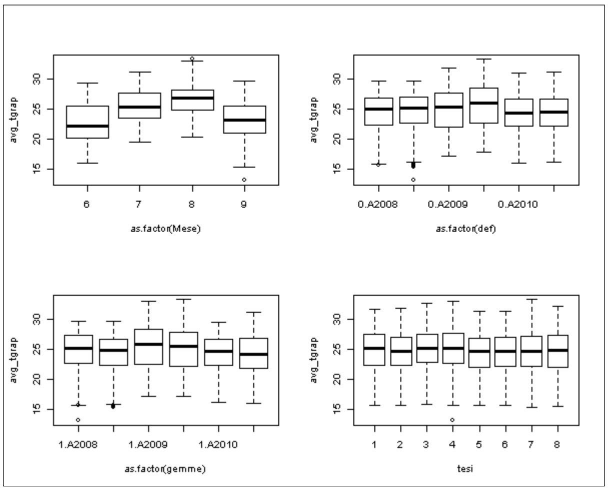
**(Dispersion parameter for gaussian family taken to be 7.683953 )**

- **Null deviance: 26226.9597 on 2543 degrees of freedom.**
- **Residual deviance: 19478.8212 on 2535 degrees of freedom.**

**AIC: 12418**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.929561111498253**




### cumulata temperatura grappolo: sum_tgrap brolio

•

**Call: glm(formula = sum_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -190.4 | -47.1 | 1.9 | 48.9 | 157.8 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 544.0399 | 3.8805 | 140.1999 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 6.7108 | 2.6380 | 2.5439 | 0.0110207 | * |
| as.factor(gemme)[T.3] | -7.8762 | 2.6380 | -2.9857 | 0.0028566 | ** |
| as.factor(dirad)[T.1] | -2.9334 | 2.6380 | -1.1120 | 0.2662586 | |
| AnnoF[T.A2009] | 18.0442 | 3.2309 | 5.5849 | 2.587e-08 | *** |
| AnnoF[T.A2010] | -4.8264 | 3.2309 | -1.4938 | 0.1353438 | |
| as.factor(Mese)[T.7] | 68.6680 | 3.5083 | 19.5731 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 89.3023 | 3.5083 | 25.4547 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 15.6500 | 4.3190 | 3.6235 | 0.0002963 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

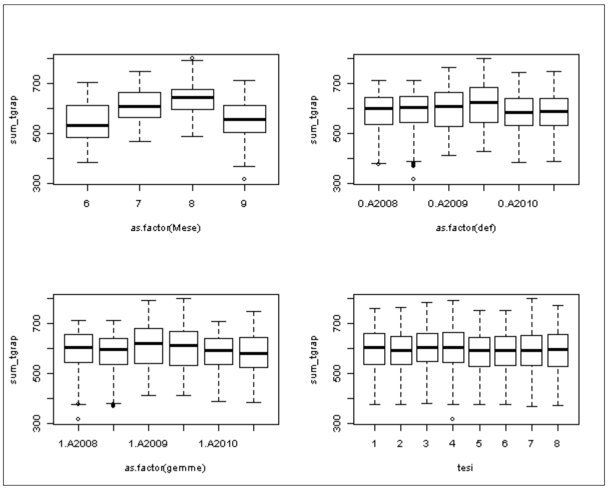
**(Dispersion parameter for gaussian family taken to be 4425.96 )**

- **Null deviance: 15106734.8635 on 2543 degrees of freedom.**
- **Residual deviance: 11219808.4573 on 2535 degrees of freedom.**

**AIC: 28588**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## escursione termica grappolo: et_tgrap brolio

•

**Call: glm(formula = et_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -15.15 | -2.15 | 0.27 | 2.35 | 11.20 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 13.195139 | 0.205600 | 64.1788 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.884026 | 0.139770 | 6.3249 | 2.986e-10 | *** |
| as.factor(gemme)[T.3] | -0.598718 | 0.139770 | -4.2836 | 1.908e-05 | *** |
| as.factor(dirad)[T.1] | -0.069251 | 0.139770 | -0.4955 | 0.6203 | |
| AnnoF[T.A2009] | -0.783999 | 0.171183 | -4.5799 | 4.877e-06 | *** |
| AnnoF[T.A2010] | -0.885946 | 0.171183 | -5.1754 | 2.452e-07 | *** |
| as.factor(Mese)[T.7] | 1.785533 | 0.185880 | 9.6058 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 4.707170 | 0.185880 | 25.3237 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.814785 | 0.228833 | 12.3006 | < 2.2e-16 | *** |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

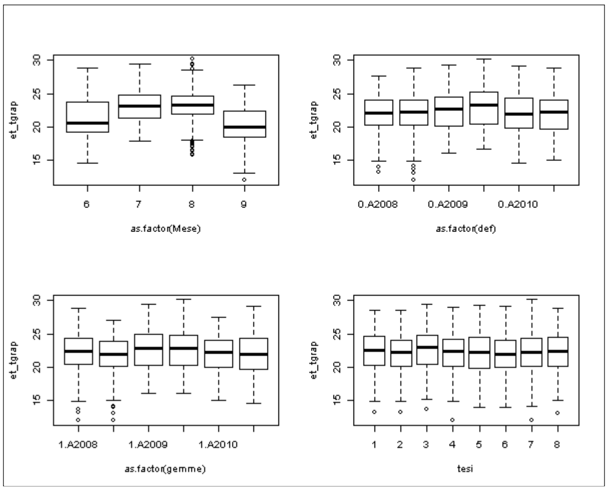
(Dispersion parameter for gaussian family taken to be 12.42471 )

- Null deviance: 40908.4666 on 2543 degrees of freedom.
- Residual deviance: 31496.6315 on 2535 degrees of freedom.

AIC: 13641

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 0.975267195262811




## media ore 3-10 temp. grappolo: morning_03_10_index_tgrap brolio

-

Call: glm(formula = morning_03_10_index_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))

Deviance Residuals:

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -7.19 | -1.79 | -0.23 | 1.74 | 7.51 |

Coefficients:

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 21.33697 | 0.14586 | 146.2810 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.21392 | 0.09916 | 2.1573 | 0.031074 | * |
| as.factor(gemme)[T.3] | -0.16936 | 0.09916 | -1.7079 | 0.087776 | . |
| as.factor(dirad)[T.1] | -0.30561 | 0.09916 | -3.0820 | 0.002078 | ** |
| AnnoF[T.A2009] | 0.64807 | 0.12145 | 5.3363 | 1.033e-07 | *** |
| AnnoF[T.A2010] | -0.14345 | 0.12145 | -1.1812 | 0.237643 | |
| as.factor(Mese)[T.7] | 1.76937 | 0.13187 | 13.4172 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 1.83430 | 0.13187 | 13.9096 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -0.81646 | 0.16235 | -5.0292 | 5.271e-07 | *** |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

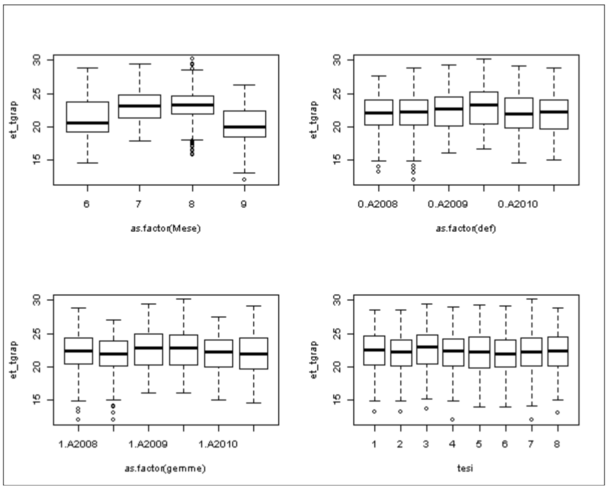
(Dispersion parameter for gaussian family taken to be 6.253611 )

- Null deviance: 19093.7139 on 2543 degrees of freedom.
- Residual deviance: 15852.9034 on 2535 degrees of freedom.

AIC: 11894

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 0.975267195262811




## media ore 11-18 temp. grappolo: diurnal_11_18_index_tgrap brolio

- 

**Call: glm(formula = diurnal_11_18_index_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -12.5 | -2.4 | 0.4 | 2.8 | 9.4 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 27.321411 | 0.234268 | 116.6246 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.565762 | 0.159259 | 3.5525 | 0.0003886 | *** |
| as.factor(gemme)[T.3] | -0.580627 | 0.159259 | -3.6458 | 0.0002719 | *** |
| as.factor(dirad)[T.1] | -0.056782 | 0.159259 | -0.3565 | 0.7214665 | |
| AnnoF[T.A2009] | 0.353638 | 0.195052 | 1.8130 | 0.0699431 | . |
| AnnoF[T.A2010] | -0.612752 | 0.195052 | -3.1415 | 0.0017004 | ** |
| as.factor(Mese)[T.7] | 4.074072 | 0.211799 | 19.2356 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 6.181080 | 0.211799 | 29.1837 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.248454 | 0.260741 | 8.6233 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

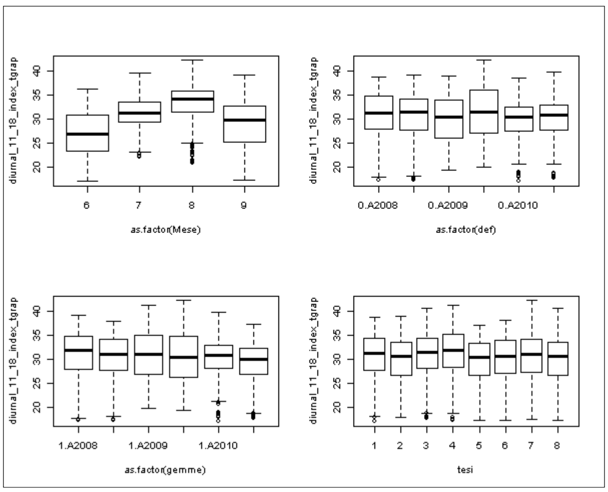
**(Dispersion parameter for gaussian family taken to be 16.13123 )**

- **Null deviance: 56316.3805 on 2543 degrees of freedom.**
- **Residual deviance: 40892.6717 on 2535 degrees of freedom.**

**AIC: 14305**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.997672076775202**




## media ore 19-02 temp. grappolo: night_19_02_index_tgrap brolio

- 

**Call: glm(formula = night_19_02_index_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

brolio_new_indici, subset = ((jd > 153) & (jd < 260)))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -6.647 | -1.817 | -0.066 | 1.745 | 8.993 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 19.3466079 | 0.1458046 | 132.6886 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.0591731 | 0.0991205 | 0.5970 | 0.550573 | |
| as.factor(gemme)[T.3] | -0.2345456 | 0.0991205 | -2.3663 | 0.018043 | * |
| as.factor(dirad)[T.1] | -0.0042825 | 0.0991205 | -0.0432 | 0.965541 | |
| AnnoF[T.A2009] | 1.2538175 | 0.1213973 | 10.3282 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | 0.1529026 | 0.1213973 | 1.2595 | 0.207958 | |
| as.factor(Mese)[T.7] | 2.7400545 | 0.1318203 | 20.7863 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.1474081 | 0.1318203 | 23.8765 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.5242543 | 0.1622812 | 3.2305 | 0.001251 | ** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

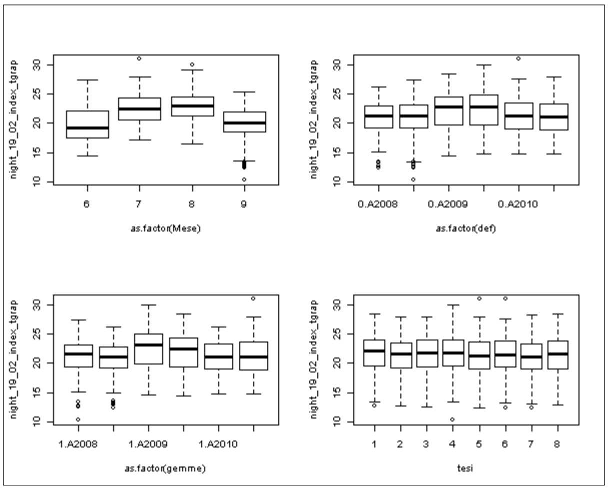
**(Dispersion parameter for gaussian family taken to be 6.248619 )**

- **Null deviance: 21520.1694 on 2543 degrees of freedom.**
- **Residual deviance: 15840.2488 on 2535 degrees of freedom.**

**AIC: 11892**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.89294788607481**




## errore standard mattutino tra le ore 5-10 temp. grappolo: dmorn_stderr_5_10_tgrap brolio

- 

**Call: glm(formula = dmorn_stderr_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1.794 | -0.335 | 0.048 | 0.333 | 1.333 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.585967 | 0.028161 | 56.3180 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.089343 | 0.019144 | 4.6668 | 3.218e-06 | *** |
| as.factor(gemme)[T.3] | 0.010407 | 0.019144 | 0.5436 | 0.5868 | |
| as.factor(dirad)[T.1] | -0.079580 | 0.019144 | -4.1569 | 3.333e-05 | *** |
| AnnoF[T.A2009] | -0.230511 | 0.023447 | -9.8312 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.111683 | 0.023447 | -4.7632 | 2.013e-06 | *** |
| as.factor(Mese)[T.7] | 0.186933 | 0.025460 | 7.3423 | 2.815e-13 | *** |
| as.factor(Mese)[T.8] | 0.427067 | 0.025460 | 16.7740 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.135081 | 0.031343 | 4.3097 | 1.697e-05 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

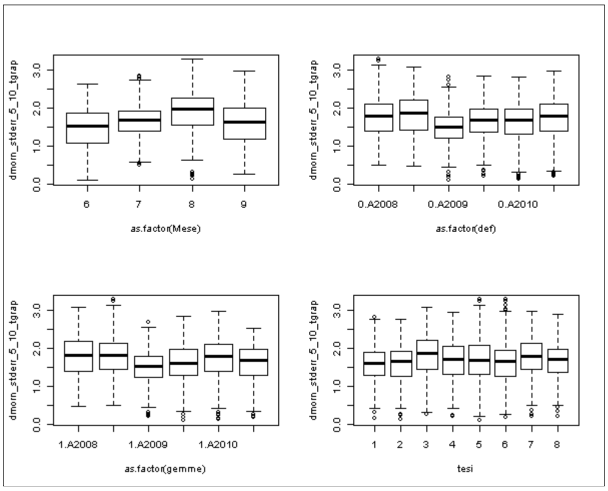
**(Dispersion parameter for gaussian family taken to be 0.2330962 )**

- Null deviance: 690.4487 on 2543 degrees of freedom.
- Residual deviance: 590.8989 on 2535 degrees of freedom.

AIC: 3525.7

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 0.161451418694026




## varianza mattutina tra le ore 5-10 temp. grappolo: dmorn_var_5_10_tgrap brolio

-

Call: glm(formula = dmorn_var_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))

Deviance Residuals:

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -25.19 | -7.34 | -0.35 | 5.73 | 39.99 |

Coefficients:

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 17.04874 | 0.56794 | 30.0187 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 1.85347 | 0.38609 | 4.8006 | 1.674e-06 | *** |
| as.factor(gemme)[T.3] | 0.21993 | 0.38609 | 0.5696 | 0.569 | |
| as.factor(dirad)[T.1] | -1.78024 | 0.38609 | -4.6109 | 4.208e-06 | *** |
| AnnoF[T.A2009] | -5.08049 | 0.47287 | -10.7440 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -2.60594 | 0.47287 | -5.5109 | 3.929e-08 | *** |
| as.factor(Mese)[T.7] | 3.13247 | 0.51346 | 6.1007 | 1.218e-09 | *** |
| as.factor(Mese)[T.8] | 8.93113 | 0.51346 | 17.3939 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.93324 | 0.63212 | 4.6403 | 3.655e-06 | *** |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

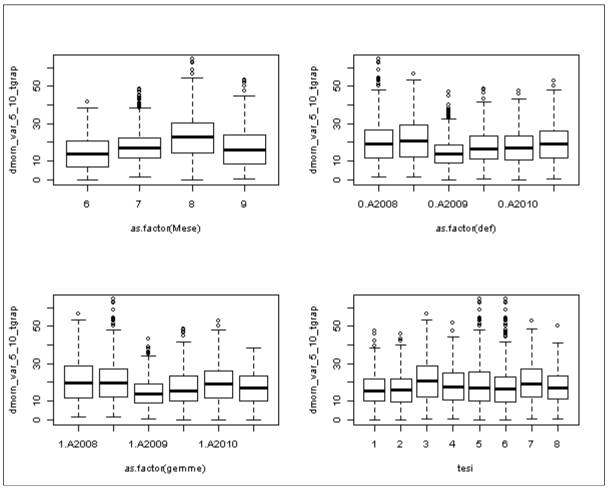
(Dispersion parameter for gaussian family taken to be 94.80704 )

- Null deviance: 285702.068 on 2543 degrees of freedom.
- Residual deviance: 240335.835 on 2535 degrees of freedom.

AIC: 18810

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 0.999999981995403




## errore standard serale tra le ore 15-20 temp. grappolo: dtwi_stderr_15_20_tgrap brolio

-

**Call: glm(formula = dtwi_stderr_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1.606 | -0.307 | 0.019 | 0.304 | 1.583 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.2130477 | 0.0287312 | 42.2206 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.0715756 | 0.0195319 | 3.6645 | 0.0002529 | *** |
| as.factor(gemme)[T.3] | -0.1367303 | 0.0195319 | -7.0003 | 3.257e-12 | *** |
| as.factor(dirad)[T.1] | -0.0077556 | 0.0195319 | -0.3971 | 0.6913479 | |
| AnnoF[T.A2009] | -0.1894055 | 0.0239216 | -7.9177 | 3.584e-15 | *** |
| AnnoF[T.A2010] | -0.1309923 | 0.0239216 | -5.4759 | 4.781e-08 | *** |
| as.factor(Mese)[T.7] | 0.2741804 | 0.0259755 | 10.5553 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 0.6672967 | 0.0259755 | 25.6895 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.4743843 | 0.0319779 | 14.8348 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

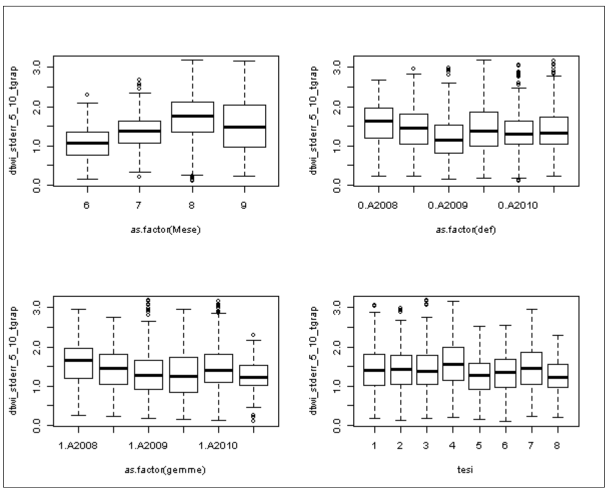
**(Dispersion parameter for gaussian family taken to be 0.2426318 )**

- **Null deviance: 816.0797 on 2543 degrees of freedom.**
- **Residual deviance: 615.0716 on 2535 degrees of freedom.**

**AIC: 3627.7**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.276843180197595**




## varianza serale tra le ore 15-20 temp. grappolo: dtwi_var_15_20_tgrap brolio

-

**Call: glm(formula = dtwi_var_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -21.17 | -5.54 | -0.92 | 4.42 | 41.18 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 10.54673 | 0.53130 | 19.8509 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 1.46890 | 0.36119 | 4.0669 | 4.910e-05 | *** |
| as.factor(gemme)[T.3] | -2.75606 | 0.36119 | -7.6306 | 3.285e-14 | *** |
| as.factor(dirad)[T.1] | -0.24385 | 0.36119 | -0.6751 | 0.4996 | |
| AnnoF[T.A2009] | -3.08690 | 0.44236 | -6.9783 | 3.801e-12 | *** |
| AnnoF[T.A2010] | -2.65921 | 0.44236 | -6.0114 | 2.104e-09 | *** |
| as.factor(Mese)[T.7] | 3.86595 | 0.48034 | 8.0484 | 1.276e-15 | *** |
| as.factor(Mese)[T.8] | 12.12131 | 0.48034 | 25.2348 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 9.54157 | 0.59134 | 16.1356 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

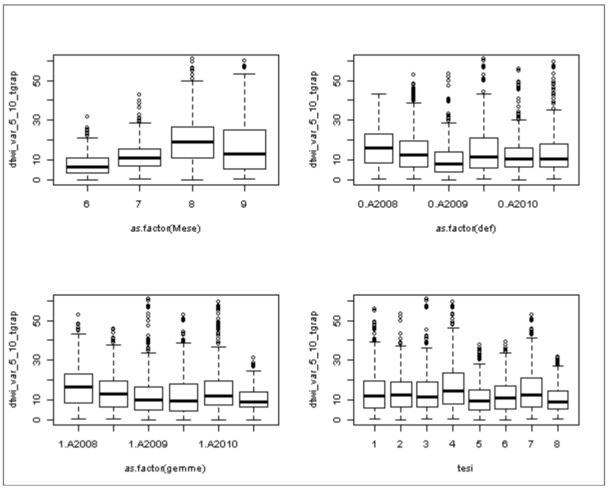
**(Dispersion parameter for gaussian family taken to be 82.96948 )**

- **Null deviance: 282148.7295 on 2543 degrees of freedom.**
- **Residual deviance: 210327.642 on 2535 degrees of freedom.**

**AIC: 18471**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.999999999999451**




## Analisi indici giornalieri taria canopy brolio

### temperatura canopy media: avg_tair brolio

-

**Call: glm(formula = avg_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -7.96 | -2.14 | 0.11 | 2.18 | 7.21 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 23.202236 | 0.167933 | 138.1634 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.041579 | 0.114164 | 0.3642 | 0.715735 | |
| as.factor(gemme)[T.3] | -0.349353 | 0.114164 | -3.0601 | 0.002236 | ** |
| as.factor(dirad)[T.1] | -0.210035 | 0.114164 | -1.8398 | 0.065919 | . |
| AnnoF[T.A2009] | 0.629410 | 0.139822 | 4.5015 | 7.052e-06 | *** |
| AnnoF[T.A2010] | -0.361432 | 0.139822 | -2.5850 | 0.009795 | ** |
| as.factor(Mese)[T.7] | 3.685664 | 0.151826 | 24.2755 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.560563 | 0.151826 | 23.4515 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.141155 | 0.186910 | 0.7552 | 0.450197 | |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

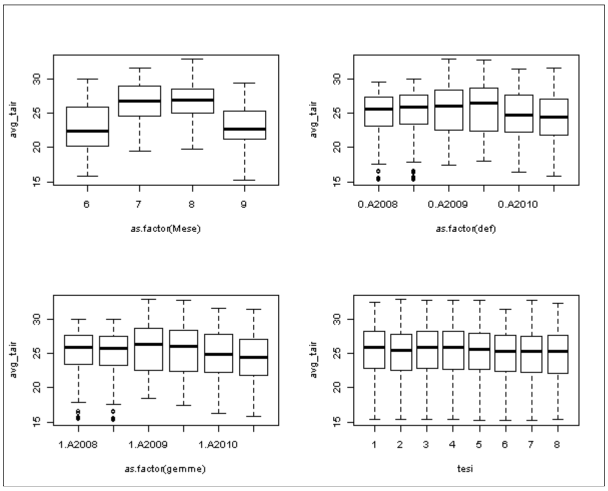
(Dispersion parameter for gaussian family taken to be 8.289241 )

- Null deviance: 29451.0261 on 2543 degrees of freedom.
- Residual deviance: 21013.2258 on 2535 degrees of freedom.

AIC: 12611

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 0.96373835540747




## cumulata temperatura canopy: sum_tair brolio

- 

**Call: glm(formula = sum_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -190.9 | -51.3 | 2.7 | 52.2 | 173.1 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 556.85364 | 4.03040 | 138.1635 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.99789 | 2.73993 | 0.3642 | 0.715736 | |
| as.factor(gemme)[T.3] | -8.38446 | 2.73993 | -3.0601 | 0.002236 | ** |
| as.factor(dirad)[T.1] | -5.04084 | 2.73993 | -1.8398 | 0.065919 | . |
| AnnoF[T.A2009] | 15.10588 | 3.35572 | 4.5015 | 7.051e-06 | *** |
| AnnoF[T.A2010] | -8.67433 | 3.35572 | -2.5849 | 0.009795 | ** |
| as.factor(Mese)[T.7] | 88.45591 | 3.64384 | 24.2755 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 85.45346 | 3.64384 | 23.4515 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 3.38773 | 4.48585 | 0.7552 | 0.450197 | |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

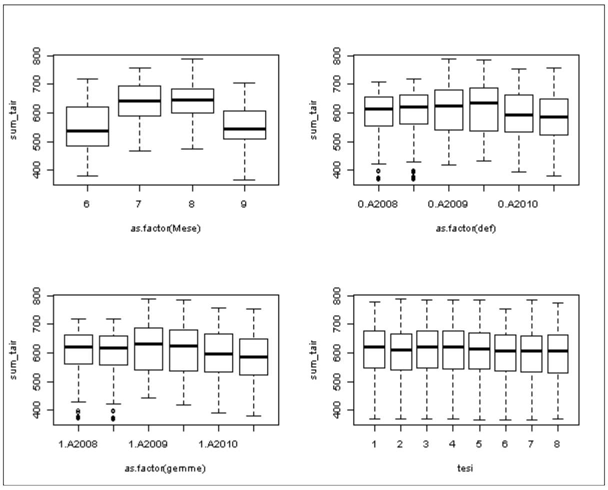
(Dispersion parameter for gaussian family taken to be 4774.601 )

- Null deviance: 16963782.4544 on 2543 degrees of freedom.
- Residual deviance: 12103614.0436 on 2535 degrees of freedom.

AIC: 28781

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 1




## escursione termica canopy: et_tair brolio

- 

**Call: glm(formula = et_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -12.87 | -2.00 | 0.38 | 2.19 | 10.37 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 13.809492 | 0.185035 | 74.6319 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.012819 | 0.125790 | -0.1019 | 0.9188 | |
| as.factor(gemme)[T.3] | 0.127376 | 0.125790 | 1.0126 | 0.3113 | |
| as.factor(dirad)[T.1] | 0.014865 | 0.125790 | 0.1182 | 0.9059 | |
| AnnoF[T.A2009] | -0.796851 | 0.154060 | -5.1723 | 2.493e-07 | *** |
| AnnoF[T.A2010] | -0.911473 | 0.154060 | -5.9163 | 3.736e-09 | *** |
| as.factor(Mese)[T.7] | 2.366626 | 0.167288 | 14.1470 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.384639 | 0.167288 | 20.2324 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.944895 | 0.205944 | 4.5881 | 4.691e-06 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

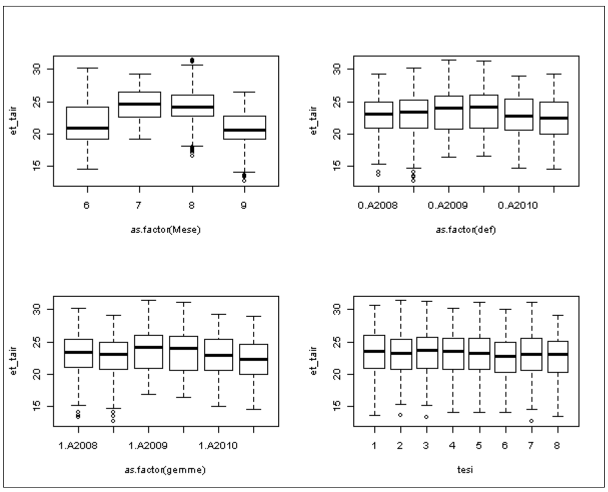
**(Dispersion parameter for gaussian family taken to be 10.06348 )**

- **Null deviance: 30564.2737 on 2543 degrees of freedom.**
- **Residual deviance: 25510.9124 on 2535 degrees of freedom.**

**AIC: 13104**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.862814636498442**




## media ore 03-10 temp. canopy: morning_03_10_index_tair brolio

- 

**Call: glm(formula = morning_03_10_index_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

brolio_new_indici, subset = ((jd > 153) & (jd < 260)))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -7.05 | -1.81 | -0.21 | 2.00 | 8.58 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 21.863065 | 0.151418 | 144.3883 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.025274 | 0.102937 | 0.2455 | 0.806067 | |
| as.factor(gemme)[T.3] | -0.409173 | 0.102937 | -3.9750 | 7.235e-05 | *** |
| as.factor(dirad)[T.1] | -0.314208 | 0.102937 | -3.0524 | 0.002293 | ** |
| AnnoF[T.A2009] | 0.681396 | 0.126071 | 5.4048 | 7.091e-08 | *** |
| AnnoF[T.A2010] | -0.309937 | 0.126071 | -2.4584 | 0.014021 | * |
| as.factor(Mese)[T.7] | 2.863683 | 0.136896 | 20.9187 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.522972 | 0.136896 | 18.4299 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -0.501246 | 0.168529 | -2.9742 | 0.002965 | ** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

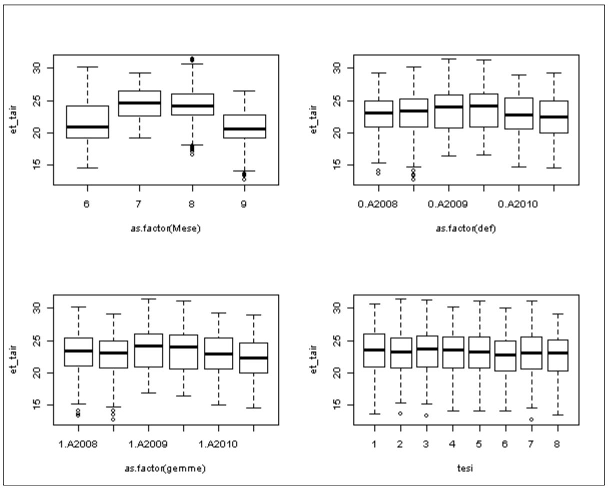
**(Dispersion parameter for gaussian family taken to be 6.739058 )**

- **Null deviance: 22859.2597 on 2543 degrees of freedom.**
- **Residual deviance: 17083.5123 on 2535 degrees of freedom.**

**AIC: 12084**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.862814636498442**




## media ore 11-18 temp. canopy: diurnal_11_18_index_tair brolio

-

**Call: glm(formula = diurnal_11_18_index_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -12.48 | -2.53 | 0.46 | 2.93 | 9.56 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 27.992537 | 0.237592 | 117.8178 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.066604 | 0.161519 | 0.4124 | 0.6801119 | |
| as.factor(gemme)[T.3] | -0.276576 | 0.161519 | -1.7123 | 0.0869552 | . |
| as.factor(dirad)[T.1] | -0.119885 | 0.161519 | -0.7422 | 0.4580123 | |
| AnnoF[T.A2009] | 0.229791 | 0.197819 | 1.1616 | 0.2455000 | |
| AnnoF[T.A2010] | -0.748255 | 0.197819 | -3.7825 | 0.0001588 | *** |
| as.factor(Mese)[T.7] | 5.033925 | 0.214804 | 23.4350 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 5.323142 | 0.214804 | 24.7814 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.778203 | 0.264441 | 2.9428 | 0.0032818 | ** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

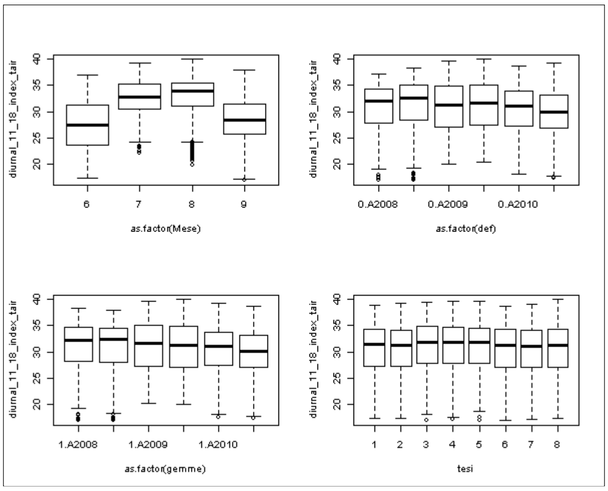
**(Dispersion parameter for gaussian family taken to be 16.5922 )**

- Null deviance: 57650.4825 on 2543 degrees of freedom.
- Residual deviance: 42061.2236 on 2535 degrees of freedom.

**AIC: 14376**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.997818741806655**




## media ore 19-02 temp. canopy: night_19_02_index_tair brolio

-

**Call: glm(formula = night_19_02_index_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -6.980 | -1.805 | -0.065 | 1.875 | 9.656 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 19.751098 | 0.147378 | 134.0169 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.032861 | 0.100190 | 0.3280 | 0.7429484 | |
| as.factor(gemme)[T.3] | -0.362309 | 0.100190 | -3.6162 | 0.0003048 | *** |
| as.factor(dirad)[T.1] | -0.196011 | 0.100190 | -1.9564 | 0.0505285 | . |
| AnnoF[T.A2009] | 0.977051 | 0.122707 | 7.9625 | 2.521e-15 | *** |
| AnnoF[T.A2010] | -0.026095 | 0.122707 | -0.2127 | 0.8316060 | |
| as.factor(Mese)[T.7] | 3.159381 | 0.133242 | 23.7115 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.835570 | 0.133242 | 21.2813 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.146513 | 0.164032 | 0.8932 | 0.3718368 | |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

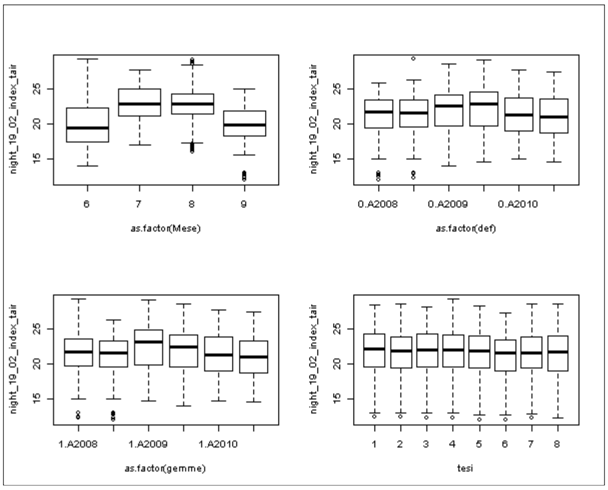
**(Dispersion parameter for gaussian family taken to be 6.384178 )**

- Null deviance: 22257.265 on 2543 degrees of freedom.
- Residual deviance: 16183.8908 on 2535 degrees of freedom.

**AIC: 11947**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.908269662331982**



## errore standard mattutino tra le ore 5-10 temp. canopy: dmorn_stderr_5_10_tair brolio

- 

**Call: glm(formula = dmorn_stderr_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1.900 | -0.380 | 0.077 | 0.362 | 1.347 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.658669 | 0.030231 | 54.8670 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.071169 | 0.020551 | 3.4630 | 0.0005431 | *** |
| as.factor(gemme)[T.3] | 0.019574 | 0.020551 | 0.9525 | 0.3409518 | |
| as.factor(dirad)[T.1] | -0.040220 | 0.020551 | -1.9570 | 0.0504537 | . |
| AnnoF[T.A2009] | -0.131670 | 0.025170 | -5.2312 | 1.822e-07 | *** |
| AnnoF[T.A2010] | -0.083895 | 0.025170 | -3.3331 | 0.0008711 | *** |
| as.factor(Mese)[T.7] | 0.353441 | 0.027331 | 12.9318 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 0.432589 | 0.027331 | 15.8277 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.083155 | 0.033647 | 2.4714 | 0.0135234 | * |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

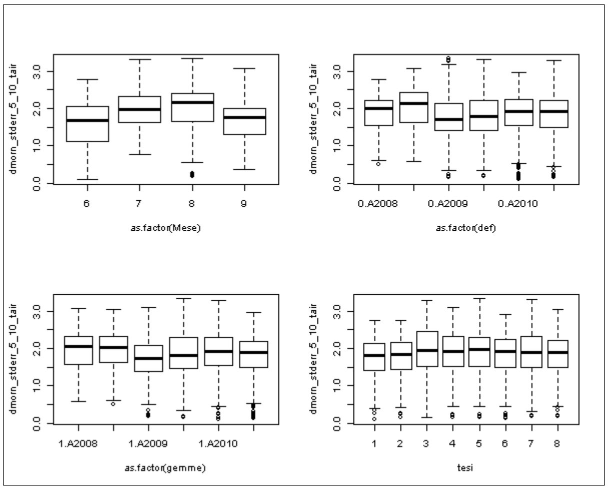
**(Dispersion parameter for gaussian family taken to be 0.2686197 )**

- **Null deviance: 779.0888 on 2543 degrees of freedom.**
- **Residual deviance: 680.9509 on 2535 degrees of freedom.**

**AIC: 3886.6**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.143451330256536**



## varianza mattutina tra le ore 5-10 temp. canopy: dmorn_var_5_10_tair brolio

- 

**Call: glm(formula = dmorn_var_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

brolio_new_indici, subset = ((jd > 153) & (jd < 260)))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -28.00 | -9.03 | 0.26 | 7.49 | 40.99 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 18.45524 | 0.64637 | 28.5522 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 1.83488 | 0.43941 | 4.1758 | 3.07e-05 | *** |
| as.factor(gemme)[T.3] | 0.44409 | 0.43941 | 1.0106 | 0.3122856 | |
| as.factor(dirad)[T.1] | -1.22138 | 0.43941 | -2.7796 | 0.0054833 | ** |
| AnnoF[T.A2009] | -2.81874 | 0.53817 | -5.2377 | 1.76e-07 | *** |
| AnnoF[T.A2010] | -1.81256 | 0.53817 | -3.3680 | 0.0007684 | *** |
| as.factor(Mese)[T.7] | 7.10701 | 0.58437 | 12.1617 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 9.31836 | 0.58437 | 15.9459 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.49286 | 0.71941 | 2.0751 | 0.0380771 | * |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

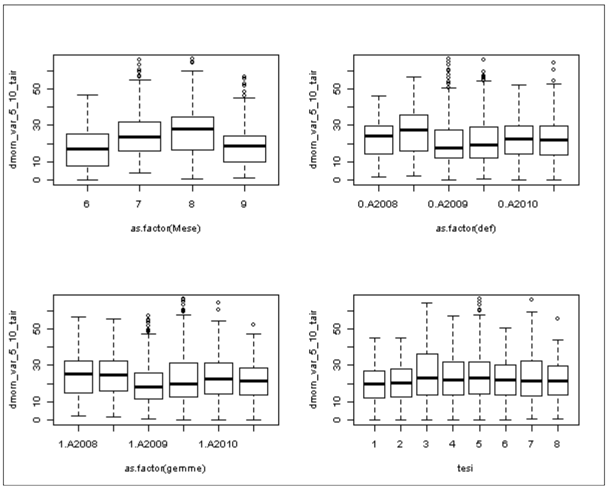
**(Dispersion parameter for gaussian family taken to be 122.8009 )**

- **Null deviance: 356981.1422 on 2543 degrees of freedom.**
- **Residual deviance: 311300.2713 on 2535 degrees of freedom.**

**AIC: 19469**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.999999984089987**




## errore standard serale tra le ore 15-20 temp. canopy: dtwi_stderr_15_20_tair brolio

- 

**Call: glm(formula = dtwi_stderr_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1.535 | -0.279 | 0.031 | 0.297 | 1.105 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.2416385 | 0.0253058 | 49.0653 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.0349016 | 0.0172033 | -2.0288 | 0.04259 | * |
| as.factor(gemme)[T.3] | 0.0044362 | 0.0172033 | 0.2579 | 0.79653 | |
| as.factor(dirad)[T.1] | 0.0260112 | 0.0172033 | 1.5120 | 0.13066 | |
| AnnoF[T.A2009] | -0.1950711 | 0.0210697 | -9.2584 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.1422746 | 0.0210697 | -6.7526 | 1.795e-11 | *** |
| as.factor(Mese)[T.7] | 0.3158714 | 0.0228787 | 13.8063 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 0.5662722 | 0.0228787 | 24.7510 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.2679564 | 0.0281655 | 9.5136 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

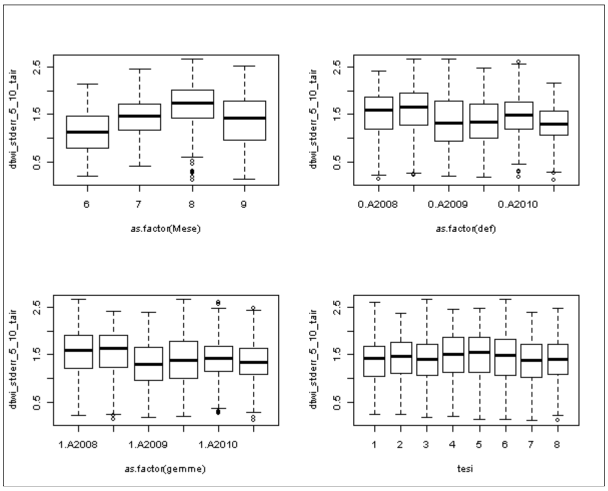
**(Dispersion parameter for gaussian family taken to be 0.1882274 )**

- **Null deviance: 611.5446 on 2543 degrees of freedom.**
- **Residual deviance: 477.1565 on 2535 degrees of freedom.**

**AIC: 2981.8**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.240805500062516**




## varianza serale tra le ore 15-20 temp. canopy: dtwi_var_15_20_tairbrolio

-

**Call: glm(formula = dtwi_var_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = brolio_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -17.88 | -5.09 | -0.52 | 4.49 | 24.73 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 11.015373 | 0.419744 | 26.2431 | < 2e-16 | *** |
| as.factor(def)[T.1] | -0.679307 | 0.285349 | -2.3806 | 0.01736 | * |
| as.factor(gemme)[T.3] | 0.084213 | 0.285349 | 0.2951 | 0.76792 | |
| as.factor(dirad)[T.1] | 0.386318 | 0.285349 | 1.3538 | 0.17591 | |
| AnnoF[T.A2009] | -3.467278 | 0.349480 | -9.9212 | < 2e-16 | *** |
| AnnoF[T.A2010] | -3.058100 | 0.349480 | -8.7504 | < 2e-16 | *** |
| as.factor(Mese)[T.7] | 4.622998 | 0.379486 | 12.1823 | < 2e-16 | *** |
| as.factor(Mese)[T.8] | 9.635215 | 0.379486 | 25.3902 | < 2e-16 | *** |
| as.factor(Mese)[T.9] | 4.832856 | 0.467177 | 10.3448 | < 2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

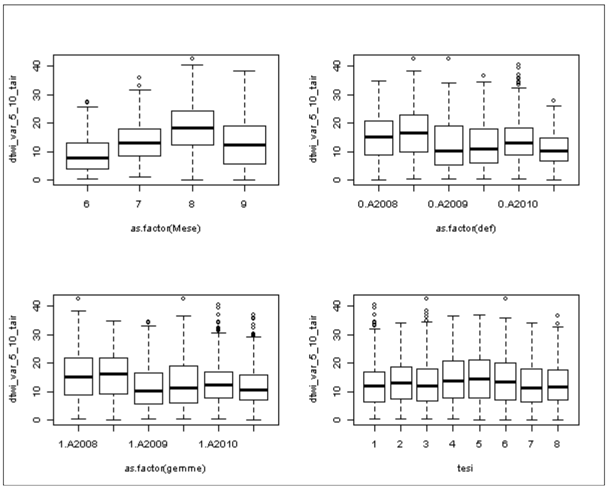
**(Dispersion parameter for gaussian family taken to be 51.7858 )**

- **Null deviance: 171205.3481 on 2543 degrees of freedom.**
- **Residual deviance: 131277.0024 on 2535 degrees of freedom.**

**AIC: 17272**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.99999984734791**



## Analisi statistica campione Tuscania cacciagrande

# IBIMET CNR, Istituto di Biometeorologia di Firenze -CNR

Matese.A.,Genesio L.,Crisci A.

## Temperatura Grappolo cacciagrande

### Temperatura Grappolo Mattina

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Morning"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -11.931 | -2.416 | -0.015 | 2.510 | 12.324 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 20.874023 | 0.118591 | 176.0176 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.264341 | 0.081537 | 3.2420 | 0.001192 | ** |
| as.factor(gemme)[T.3] | -0.356176 | 0.081537 | -4.3683 | 1.270e-05 | *** |
| as.factor(dirad)[T.1] | 0.053019 | 0.081537 | 0.6503 | 0.515550 | |
| AnnoF[T.A2009] | -0.125984 | 0.101194 | -1.2450 | 0.213181 | |
| AnnoF[T.A2010] | -0.586676 | 0.101118 | -5.8019 | 6.838e-09 | *** |
| as.factor(Mese)[T.7] | 2.603224 | 0.109553 | 23.7621 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.349035 | 0.107063 | 31.2809 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.562435 | 0.129614 | 12.0545 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

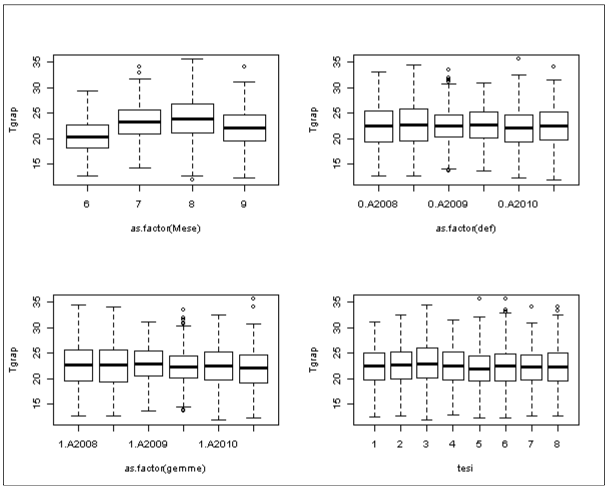
**(Dispersion parameter for gaussian family taken to be 11.70153 )**

- **Null deviance: 96656.1966 on 7121 degrees of freedom.**
- **Residual deviance: 83233.0184 on 7113 degrees of freedom.**

**AIC: 37740**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.84813381947672**




## Temperatura Grappolo Pieno giorno

•

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -16.224 | -2.383 | 0.058 | 2.482 | 11.449 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 28.597296 | 0.073282 | 390.2365 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.099355 | 0.050812 | 1.9553 | 0.05056 | . |
| as.factor(gemme)[T.3] | -0.624504 | 0.050812 | -12.2904 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -0.044047 | 0.050812 | -0.8668 | 0.38604 | |
| AnnoF[T.A2009] | -0.473297 | 0.063042 | -7.5077 | 6.264e-14 | *** |
| AnnoF[T.A2010] | 0.026326 | 0.063042 | 0.4176 | 0.67624 | |
| as.factor(Mese)[T.7] | 4.660588 | 0.065408 | 71.2538 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 6.097259 | 0.067313 | 90.5804 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 3.467416 | 0.085859 | 40.3849 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

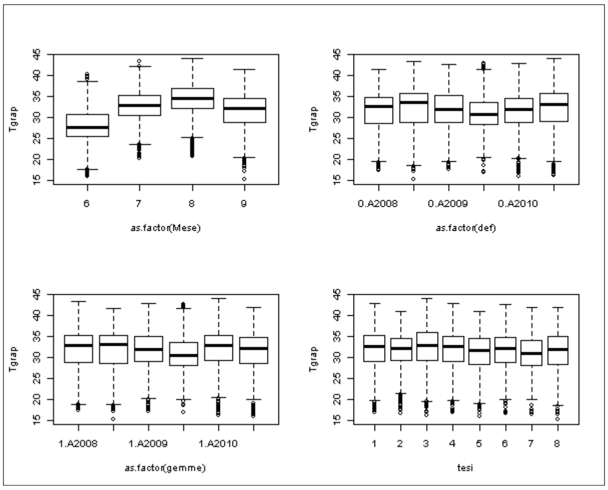
**(Dispersion parameter for gaussian family taken to be 13.09535 )**

- **Null deviance: 390580.4892 on 20522 degrees of freedom.**
- **Residual deviance: 268637.9155 on 20514 degrees of freedom.**

**AIC: 111043**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.997372582711401**




## Temperatura Cross Grappolo Pieno giorno

•

**Call: glm(formula = Tgrap ~ as.factor(gemme) * as.factor(def) + as.factor(def) * Rad + as.factor(gemme) * Rad + AnnoF + as.factor(Mese), family = gaussian(identity),**

data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -13.395 | -2.426 | 0.027 | 2.454 | 11.130 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 23.1479602 | 0.7202795 | 32.1375 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | 0.8635764 | 0.7489163 | 1.1531 | 0.24888 | |
| as.factor(def)[T.1] | -6.3240490 | 0.7975713 | -7.9291 | 2.319e-15 | *** |
| Rad | 0.0118616 | 0.0016405 | 7.2303 | 4.987e-13 | *** |
| AnnoF[T.A2009] | -0.3684086 | 0.0638431 | -5.7705 | 8.016e-09 | *** |
| AnnoF[T.A2010] | 0.4998461 | 0.0664914 | 7.5175 | 5.814e-14 | *** |
| as.factor(Mese)[T.7] | 4.7840535 | 0.0659248 | 72.5684 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 6.1721040 | 0.0680038 | 90.7612 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 3.4592048 | 0.0857726 | 40.3300 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3]:as.factor(def)[T.1] | -0.0083844 | 0.1102951 | -0.0760 | 0.93941 | |
| as.factor(def)[T.1]:Rad | 0.0136207 | 0.0018042 | 7.5494 | 4.554e-14 | *** |
| as.factor(gemme)[T.3]:Rad | -0.0029376 | 0.0017481 | -1.6804 | 0.09289 | . |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 12.80508 )**

- **Null deviance: 390580.4892 on 20522 degrees of freedom.**
- **Residual deviance: 262645.0196 on 20511 degrees of freedom.**

**AIC: 110586**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.998037946017014**

## Temperatura Grappolo Sera

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Evening"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -13.335 | -1.976 | -0.052 | 2.030 | 9.843 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 25.868600 | 0.107693 | 240.2074 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.175442 | 0.073968 | -2.3719 | 0.01773 | * |
| as.factor(gemme)[T.3] | -0.149808 | 0.073968 | -2.0253 | 0.04287 | * |
| as.factor(dirad)[T.1] | 0.058445 | 0.073968 | 0.7901 | 0.42947 | |
| AnnoF[T.A2009] | 0.881959 | 0.091784 | 9.6091 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | 0.366315 | 0.091784 | 3.9911 | 6.643e-05 | *** |
| as.factor(Mese)[T.7] | 4.021782 | 0.097337 | 41.3179 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 4.492371 | 0.098926 | 45.4113 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.673267 | 0.118659 | 22.5290 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

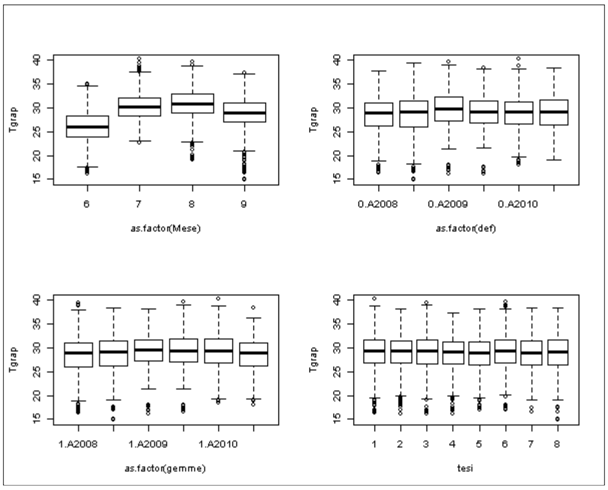
**(Dispersion parameter for gaussian family taken to be 9.6721 )**

- **Null deviance: 94337.3336 on 7152 degrees of freedom.**
- **Residual deviance: 69097.4848 on 7144 degrees of freedom.**

**AIC: 36542**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.970654914430738**




## Temperatura Grappolo Notte

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Notte"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -9.85 | -1.97 | -0.15 | 1.92 | 13.99 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 19.3376537 | 0.0558755 | 346.0846 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.2484399 | 0.0375415 | -6.6177 | 3.725e-11 | *** |
| as.factor(gemme)[T.3] | -0.0025089 | 0.0375415 | -0.0668 | 0.946718 | |
| as.factor(dirad)[T.1] | 0.1005869 | 0.0375415 | 2.6794 | 0.007381 | ** |
| AnnoF[T.A2009] | 0.6020576 | 0.0465863 | 12.9235 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.2380430 | 0.0465968 | -5.1086 | 3.271e-07 | *** |
| as.factor(Mese)[T.7] | 2.9297417 | 0.0515592 | 56.8229 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.1736694 | 0.0504615 | 62.8929 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.1044300 | 0.0590811 | 35.6193 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

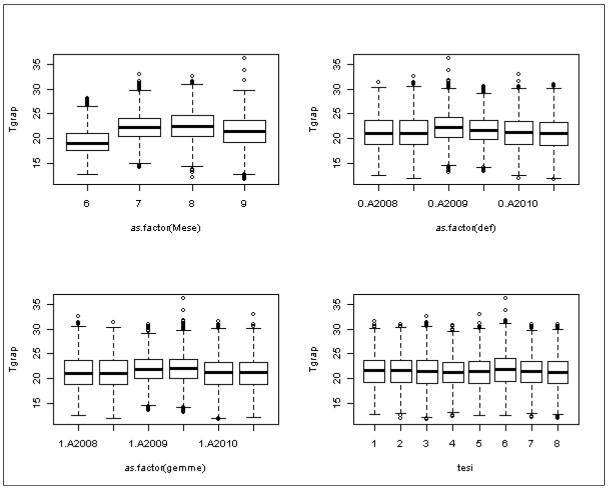
**(Dispersion parameter for gaussian family taken to be 8.259946 )**

- **Null deviance: 238008.2276 on 23713 degrees of freedom.**
- **Residual deviance: 195802.0292 on 23705 degrees of freedom.**

**AIC: 117379**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.831364659105173**




## Radiazione Grappolo Mattina

- 

**Call: glm(formula = Rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new,**

**subset = ((jd > 153) & (jd < 260) & Code == "Morning"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -393.0 | -23.4 | 9.4 | 31.6 | 110.8 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 400.6941 | 1.6647 | 240.7055 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 19.2214 | 1.1356 | 16.9266 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -11.8769 | 1.1356 | -10.4589 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -7.0477 | 1.1356 | -6.2062 | 5.718e-10 | *** |
| AnnoF[T.A2009] | -7.7434 | 1.3913 | -5.5657 | 2.703e-08 | *** |
| AnnoF[T.A2010] | -18.7448 | 1.3902 | -13.4840 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -16.2374 | 1.5342 | -10.5839 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -7.5929 | 1.4993 | -5.0642 | 4.200e-07 | *** |
| as.factor(Mese)[T.9] | -25.2460 | 1.8164 | -13.8990 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

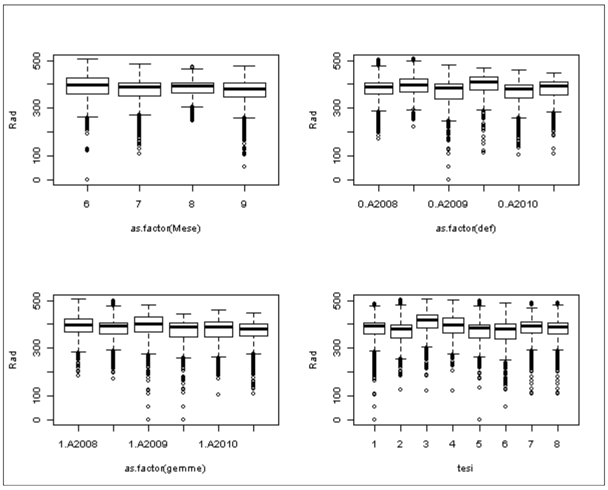
**(Dispersion parameter for gaussian family taken to be 2395.946 )**

- **Null deviance: 19832732.7728 on 7431 degrees of freedom.**
- **Residual deviance: 17785105.11 on 7423 degrees of freedom.**

**AIC: 78934**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Radiazione Grappolo Pieno giorno

-

**Call: glm(formula = Rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -285.58 | -19.16 | -0.71 | 18.42 | 81.98 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 449.50263 | 0.54555 | 823.9437 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 23.56921 | 0.37530 | 62.8008 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -9.08343 | 0.37530 | -24.2030 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -4.08104 | 0.37530 | -10.8740 | < 2.2e-16 | *** |
| AnnoF[T.A2009] | -7.06513 | 0.45964 | -15.3711 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -22.84123 | 0.45964 | -49.6940 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -10.93457 | 0.48579 | -22.5089 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -8.96678 | 0.49993 | -17.9360 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -3.61797 | 0.63814 | -5.6695 | 1.450e-08 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

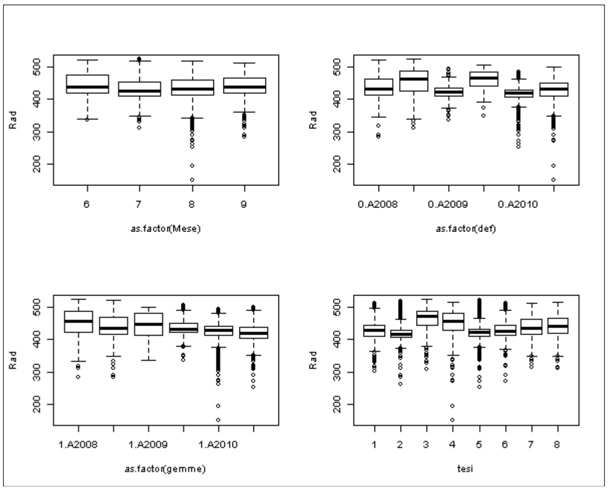
**(Dispersion parameter for gaussian family taken to be 754.1152 )**

- **Null deviance: 22055721.5185 on 21415 degrees of freedom.**
- **Residual deviance: 16143344.3382 on 21407 degrees of freedom.**

**AIC: 202680**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Radiazione Cross Grappolo Pieno giorno

- 

**Call: glm(formula = Rad ~ as.factor(gemme) * as.factor(def) + as.factor(def) * Tgrap + as.factor(gemme) * Tgrap + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -294.92 | -17.86 | -0.55 | 16.44 | 78.70 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 449.560852 | 2.451819 | 183.3581 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -13.718115 | 2.732095 | -5.0211 | 5.181e-07 | *** |
| as.factor(def)[T.1] | -22.824101 | 2.767588 | -8.2469 | < 2.2e-16 | *** |
| Tgrap | -0.129059 | 0.078925 | -1.6352 | 0.1020 | |
| AnnoF[T.A2009] | -7.549164 | 0.459647 | -16.4238 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -24.702981 | 0.457672 | -53.9753 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -14.110292 | 0.530161 | -26.6151 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -13.757830 | 0.578061 | -23.8000 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -6.562568 | 0.647440 | -10.1362 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3]:as.factor(def)[T.1] | -18.029190 | 0.739819 | -24.3697 | < 2.2e-16 | *** |
| as.factor(def)[T.1]:Tgrap | 1.781103 | 0.084896 | 20.9798 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3]:Tgrap | 0.493770 | 0.084687 | 5.8305 | 5.608e-09 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 689.374 )**

- **Null deviance: 21198127.8609 on 20522 degrees of freedom.**
- **Residual deviance: 14139750.8806 on 20511 degrees of freedom.**

**AIC: 192390**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**

## Radiazione Grappolo Sera

- 

**Call: glm(formula = Rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Evening"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -346.3 | -25.4 | 7.3 | 34.7 | 123.9 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 395.54306 | 1.87614 | 210.8279 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 12.76763 | 1.27859 | 9.9857 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -5.09815 | 1.27859 | -3.9873 | 6.746e-05 | *** |
| as.factor(dirad)[T.1] | -4.80012 | 1.27859 | -3.7542 | 0.0001752 | *** |
| AnnoF[T.A2009] | 0.18013 | 1.56608 | 0.1150 | 0.9084323 | |
| AnnoF[T.A2010] | -5.65149 | 1.56608 | -3.6087 | 0.0003098 | *** |
| as.factor(Mese)[T.7] | -26.82115 | 1.69180 | -15.8536 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -49.21764 | 1.71943 | -28.6243 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -22.89764 | 2.06384 | -11.0947 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

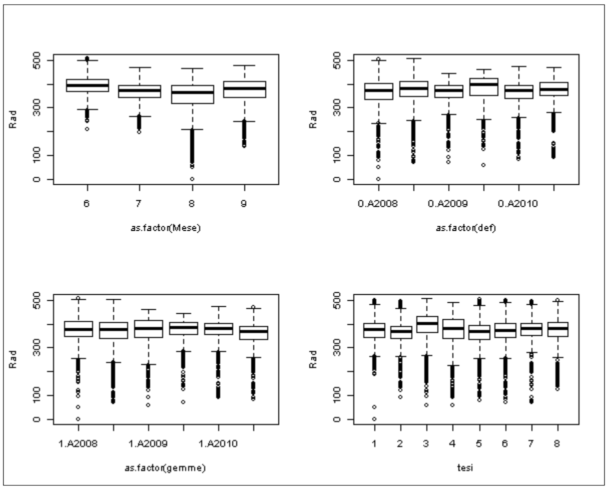
**(Dispersion parameter for gaussian family taken to be 3050.533 )**

- **Null deviance: 25705771.3525 on 7463 degrees of freedom.**
- **Residual deviance: 22741720.3809 on 7455 degrees of freedom.**

**AIC: 81077**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Temperatura Aria Canopy Mattina

- 

**Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Morning"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -12.65 | -2.76 | 0.03 | 2.76 | 10.45 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 21.6591185 | 0.1267134 | 170.9300 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.2757005 | 0.0864393 | 3.1895 | 0.001431 | ** |
| as.factor(gemme)[T.3] | -0.4164902 | 0.0864393 | -4.8183 | 1.477e-06 | *** |
| as.factor(dirad)[T.1] | -0.5197516 | 0.0864393 | -6.0129 | 1.909e-09 | *** |
| AnnoF[T.A2009] | 0.0058092 | 0.1059034 | 0.0549 | 0.956256 | |
| AnnoF[T.A2010] | -0.6130456 | 0.1058176 | -5.7934 | 7.179e-09 | *** |
| as.factor(Mese)[T.7] | 3.0532034 | 0.1167797 | 26.1450 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.9286448 | 0.1141290 | 34.4228 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.6991042 | 0.1382621 | 12.2890 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

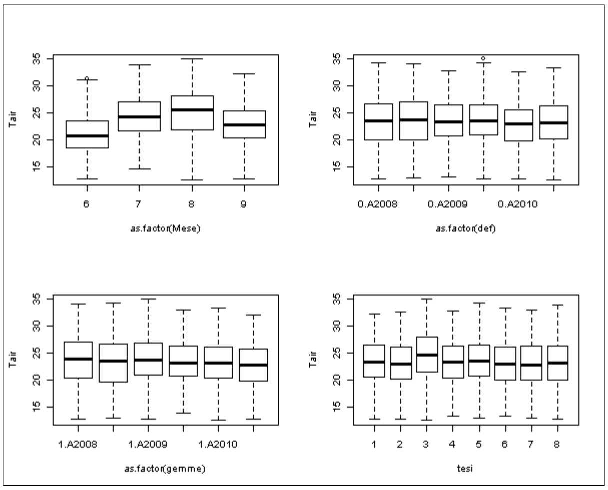
**(Dispersion parameter for gaussian family taken to be 13.88251 )**

- **Null deviance: 122889.5753 on 7431 degrees of freedom.**
- **Residual deviance: 103049.8625 on 7423 degrees of freedom.**

**AIC: 40653**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.93071309746336**




## Temperatura Aria Canopy Pieno giorno

- 

**Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -16.08 | -2.28 | 0.15 | 2.35 | 10.12 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 29.058210 | 0.069531 | 417.9175 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.116789 | 0.047833 | 2.4416 | 0.014630 | * |
| as.factor(gemme)[T.3] | -0.072896 | 0.047833 | -1.5240 | 0.127529 | |
| as.factor(dirad)[T.1] | 0.155621 | 0.047833 | 3.2535 | 0.001142 | ** |
| AnnoF[T.A2009] | 0.137211 | 0.058581 | 2.3422 | 0.019178 | * |
| AnnoF[T.A2010] | 0.018090 | 0.058581 | 0.3088 | 0.757477 | |
| as.factor(Mese)[T.7] | 4.626207 | 0.061914 | 74.7197 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 5.153662 | 0.063717 | 80.8840 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.173781 | 0.081332 | 26.7273 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 12.24969 )**

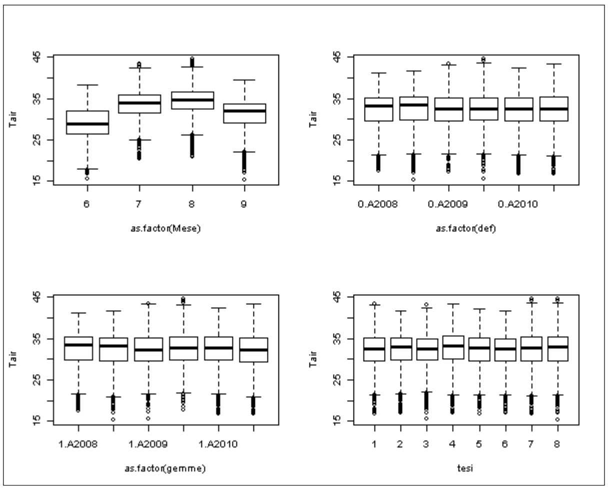
- **Null deviance: 364284.8321 on 21415 degrees of freedom.**

- **Residual deviance: 262229.0208 on 21407 degrees of freedom.**

**AIC: 114445**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.991480562852282**




## Temperatura Aria Crossing Canopy Pieno giorno

- 

**Call: glm(formula = Tair ~ as.factor(gemme) * as.factor(def) + as.factor(dirad) + as.factor(def) * Rad + as.factor(gemme) * Rad + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -14.17 | -2.30 | 0.13 | 2.32 | 10.02 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 26.17722450 | 0.69707347 | 37.5530 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -0.28538618 | 0.71412456 | -0.3996 | 0.6894324 | |
| as.factor(def)[T.1] | -4.68412530 | 0.75703190 | -6.1875 | 6.224e-10 | *** |
| as.factor(dirad)[T.1] | 0.20701027 | 0.04819064 | 4.2957 | 1.749e-05 | *** |
| Rad | 0.00636759 | 0.00158413 | 4.0196 | 5.849e-05 | *** |
| AnnoF[T.A2009] | 0.16587634 | 0.05949495 | 2.7881 | 0.0053069 | ** |
| AnnoF[T.A2010] | 0.29653735 | 0.06181337 | 4.7973 | 1.619e-06 | *** |
| as.factor(Mese)[T.7] | 4.72568565 | 0.06271773 | 75.3485 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 5.21508700 | 0.06457452 | 80.7608 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.16957486 | 0.08156704 | 26.5987 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3]:as.factor(def)[T.1] | 0.35353998 | 0.10552093 | 3.3504 | 0.0008083 | *** |
| as.factor(def)[T.1]:Rad | 0.00993240 | 0.00171165 | 5.8028 | 6.613e-09 | *** |
| as.factor(gemme)[T.3]:Rad | 0.00044522 | 0.00166662 | 0.2671 | 0.7893639 | |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 12.12163 )**

- **Null deviance: 364284.8321 on 21415 degrees of freedom.**
- **Residual deviance: 259439.2113 on 21403 degrees of freedom.**

**AIC: 114224**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.9925211272728**

## Temperatura Aria Canopy Sera

- 

**Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Evening"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -13.162 | -2.036 | -0.018 | 2.064 | 9.096 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 26.576274 | 0.107678 | 246.8122 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.045941 | 0.073383 | 0.6261 | 0.531300 | |
| as.factor(gemme)[T.3] | -0.075251 | 0.073383 | -1.0255 | 0.305179 | |
| as.factor(dirad)[T.1] | -0.037426 | 0.073383 | -0.5100 | 0.610056 | |
| AnnoF[T.A2009] | 0.586675 | 0.089882 | 6.5271 | 7.143e-11 | *** |
| AnnoF[T.A2010] | 0.256472 | 0.089882 | 2.8534 | 0.004337 | ** |
| as.factor(Mese)[T.7] | 4.057275 | 0.097098 | 41.7852 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.542636 | 0.098684 | 35.8987 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.682611 | 0.118451 | 14.2051 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

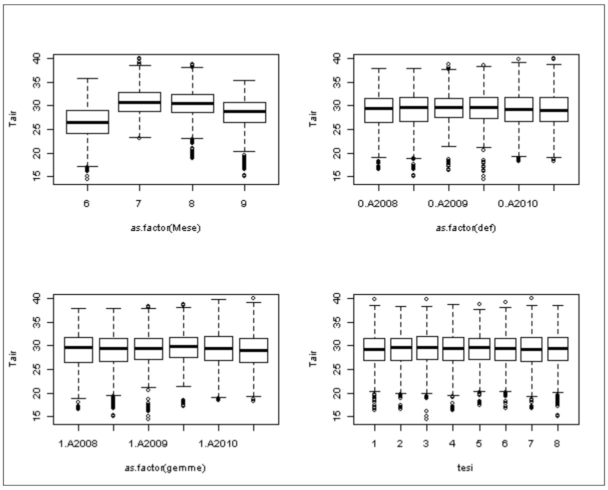
**(Dispersion parameter for gaussian family taken to be 10.04845 )**

- **Null deviance: 96535.347 on 7463 degrees of freedom.**
- **Residual deviance: 74911.1884 on 7455 degrees of freedom.**

**AIC: 38415**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.944820773482649**




## Temperatura Aria Canopy Notte

- 

**Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new, subset = ((jd > 153) & (jd < 260) & Code == "Notte"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -9.90 | -2.04 | -0.14 | 1.98 | 10.03 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 19.699259 | 0.056137 | 350.9163 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.140019 | 0.037429 | 3.7409 | 0.0001838 | *** |
| as.factor(gemme)[T.3] | -0.151894 | 0.037429 | -4.0582 | 4.961e-05 | *** |
| as.factor(dirad)[T.1] | -0.315556 | 0.037429 | -8.4307 | < 2.2e-16 | *** |
| AnnoF[T.A2009] | 0.283307 | 0.045845 | 6.1797 | 6.524e-10 | *** |
| AnnoF[T.A2010] | -0.284281 | 0.045856 | -6.1994 | 5.757e-10 | *** |
| as.factor(Mese)[T.7] | 2.993573 | 0.051685 | 57.9191 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.040543 | 0.050585 | 60.1076 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.027538 | 0.059263 | 34.2124 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

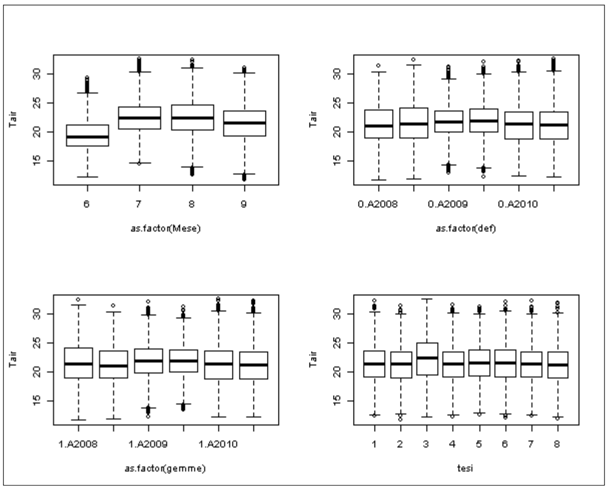
**(Dispersion parameter for gaussian family taken to be 8.666216 )**

- **Null deviance: 255803.6109 on 24743 degrees of freedom.**
- **Residual deviance: 214358.8623 on 24735 degrees of freedom.**

**AIC: 123664**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.81270714774373**




## Analisi indici giornalieri radiazione cacciagrande

### radiazione media : avg_rad cacciagrande

- 

**Call: glm(formula = avg_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -55.99 | -8.35 | -0.30 | 7.42 | 47.09 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 280.83863 | 0.76476 | 367.2266 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 13.32235 | 0.51989 | 25.6251 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -5.22162 | 0.51989 | -10.0436 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -2.85043 | 0.51989 | -5.4827 | 4.603e-08 | *** |
| AnnoF[T.A2009] | -3.74817 | 0.63674 | -5.8865 | 4.465e-09 | *** |
| AnnoF[T.A2010] | -11.08848 | 0.63674 | -17.4145 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -15.08576 | 0.69141 | -21.8189 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -34.44106 | 0.69141 | -49.8130 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -50.87074 | 0.85118 | -59.7652 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

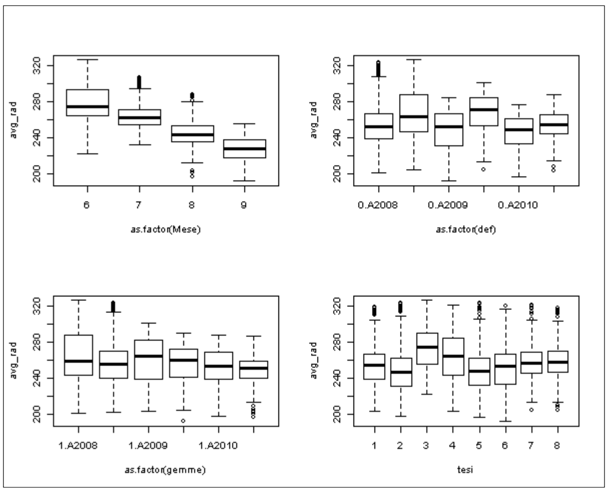
**(Dispersion parameter for gaussian family taken to be 171.9043 )**

- **Null deviance: 1412522.2942 on 2543 degrees of freedom.**
- **Residual deviance: 435777.4255 on 2535 degrees of freedom.**

**AIC: 20324**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**



## cumulata radiazione : sum_rad cacciagrande

•

**Call: glm(formula = sum_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1343.8 | -200.4 | -7.1 | 178.2 | 1130.2 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 6740.127 | 18.354 | 367.2267 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 319.736 | 12.477 | 25.6251 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -125.319 | 12.477 | -10.0436 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -68.410 | 12.477 | -5.4827 | 4.603e-08 | *** |
| AnnoF[T.A2009] | -89.956 | 15.282 | -5.8865 | 4.465e-09 | *** |
| AnnoF[T.A2010] | -266.124 | 15.282 | -17.4145 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -362.058 | 16.594 | -21.8189 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -826.586 | 16.594 | -49.8130 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -1220.898 | 20.428 | -59.7652 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

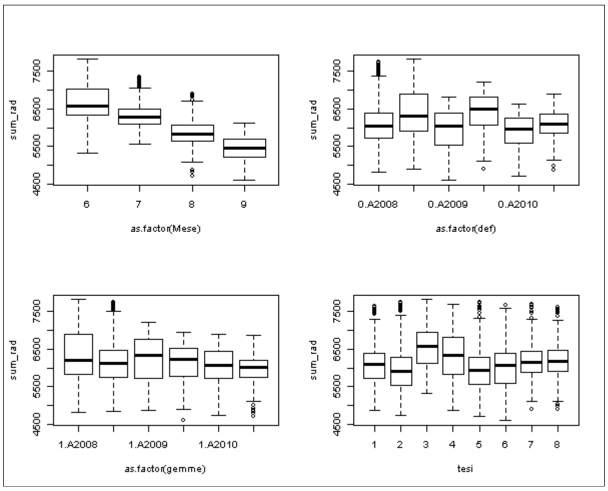
**(Dispersion parameter for gaussian family taken to be 99016.87 )**

- **Null deviance: 813612807.0459 on 2543 degrees of freedom.**
- **Residual deviance: 251007766.5946 on 2535 degrees of freedom.**

**AIC: 36494**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## escursione radiazione: et_rad cacciagrande

•

**Call: glm(formula = et_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -70.34 | -14.88 | 0.69 | 16.79 | 60.84 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 465.91234 | 1.34075 | 347.5020 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 27.45146 | 0.91146 | 30.1180 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -4.35610 | 0.91146 | -4.7792 | 1.860e-06 | *** |
| as.factor(dirad)[T.1] | -5.85828 | 0.91146 | -6.4273 | 1.546e-10 | *** |
| AnnoF[T.A2009] | -13.64718 | 1.11631 | -12.2253 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -23.88002 | 1.11631 | -21.3919 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -1.89107 | 1.21215 | -1.5601 | 0.1189 | |
| as.factor(Mese)[T.8] | -0.94939 | 1.21215 | -0.7832 | 0.4336 | |

| | | | | |
|---|---|---|---|---|
| as.factor(Mese)[T.9] | 1.87834 | 1.49226 | 1.2587 | 0.2082 |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

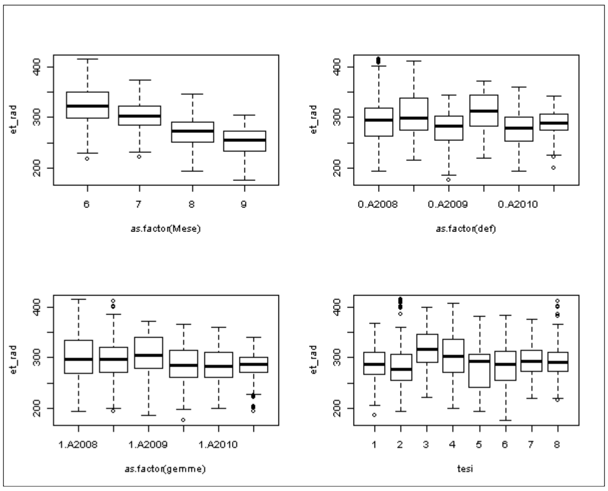
**(Dispersion parameter for gaussian family taken to be 528.3664 )**

- **Null deviance: 2099808.4933 on 2543 degrees of freedom.**
- **Residual deviance: 1339408.9075 on 2535 degrees of freedom.**

**AIC: 23181**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## media ore 3-10 radiazione: morning_03_10_index_rad cacciagrande

-

**Call: glm(formula = morning_03_10_index_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -109.0 | -18.6 | -2.0 | 20.0 | 87.4 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 331.5933 | 1.4851 | 223.2785 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 17.8600 | 1.0096 | 17.6901 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -9.4747 | 1.0096 | -9.3845 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -4.5522 | 1.0096 | -4.5089 | 6.814e-06 | *** |
| AnnoF[T.A2009] | -5.0065 | 1.2365 | -4.0489 | 5.300e-05 | *** |
| AnnoF[T.A2010] | -16.3520 | 1.2365 | -13.2243 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -21.8521 | 1.3427 | -16.2751 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -53.5649 | 1.3427 | -39.8943 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -71.4809 | 1.6529 | -43.2449 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

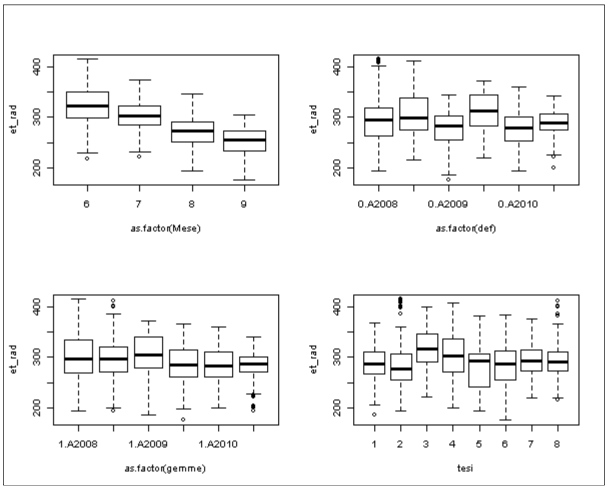
**(Dispersion parameter for gaussian family taken to be 648.2745 )**

- **Null deviance: 3731957.1113 on 2543 degrees of freedom.**
- **Residual deviance: 1643375.8485 on 2535 degrees of freedom.**

**AIC: 23701**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**



## media ore 11-18 radiazione: diurnal_11_18_index_rad cacciagrande

- 

**Call: glm(formula = diurnal_11_18_index_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -90.60 | -12.70 | -0.37 | 13.14 | 71.65 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 441.54186 | 1.22966 | 359.0775 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 22.77445 | 0.83594 | 27.2441 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -7.91336 | 0.83594 | -9.4664 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -4.47820 | 0.83594 | -5.3571 | 9.219e-08 | *** |
| AnnoF[T.A2009] | -6.46371 | 1.02381 | -6.3134 | 3.213e-10 | *** |
| AnnoF[T.A2010] | -20.09968 | 1.02381 | -19.6321 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -9.85811 | 1.11172 | -8.8675 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -13.01248 | 1.11172 | -11.7048 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -20.93452 | 1.36861 | -15.2962 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

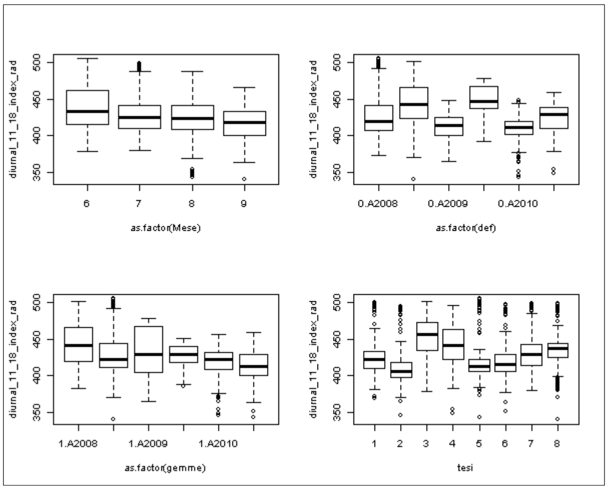
**(Dispersion parameter for gaussian family taken to be 444.4354 )**

- **Null deviance: 1806768.2267 on 2543 degrees of freedom.**
- **Residual deviance: 1126643.8451 on 2535 degrees of freedom.**

**AIC: 22741**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**



## media ore 19-02 radiazione: night_19_02_index_rad cacciagrande

- 

**Call: glm(formula = night_19_02_index_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -48.1 | -11.3 | -2.1 | 12.2 | 40.8 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 69.38077 | 0.90962 | 76.2746 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.66738 | 0.61837 | -1.0793 | 0.280576 | |
| as.factor(gemme)[T.3] | 1.72317 | 0.61837 | 2.7866 | 0.005366 | ** |
| as.factor(dirad)[T.1] | 0.47908 | 0.61837 | 0.7747 | 0.438561 | |
| AnnoF[T.A2009] | 0.22571 | 0.75735 | 0.2980 | 0.765705 | |
| AnnoF[T.A2010] | 3.18619 | 0.75735 | 4.2070 | 2.677e-05 | *** |
| as.factor(Mese)[T.7] | -13.54705 | 0.82237 | -16.4731 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -36.74581 | 0.82237 | -44.6825 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -60.19679 | 1.01241 | -59.4590 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

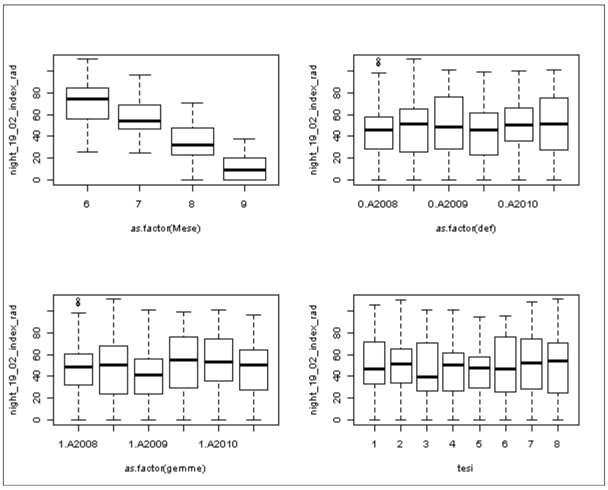
**(Dispersion parameter for gaussian family taken to be 243.1977 )**

- **Null deviance: 1697394.0208 on 2543 degrees of freedom.**
- **Residual deviance: 616506.0433 on 2535 degrees of freedom.**

**AIC: 21207**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## errore standard mattutino tra le ore 5-10 radiazione: dmorn_stderr_5_10_rad cacciagrande

- 

**Call: glm(formula = dmorn_stderr_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -28.6 | -7.1 | -1.2 | 6.6 | 50.8 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 16.67815 | 0.65362 | 25.5166 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -1.70358 | 0.44434 | -3.8340 | 0.0001292 | *** |
| as.factor(gemme)[T.3] | 0.55713 | 0.44434 | 1.2538 | 0.2100169 | |
| as.factor(dirad)[T.1] | -0.19970 | 0.44434 | -0.4494 | 0.6531666 | |
| AnnoF[T.A2009] | 1.72344 | 0.54420 | 3.1669 | 0.0015591 | ** |
| AnnoF[T.A2010] | 0.52606 | 0.54420 | 0.9667 | 0.3338093 | |
| as.factor(Mese)[T.7] | 2.98239 | 0.59093 | 5.0470 | 4.807e-07 | *** |
| as.factor(Mese)[T.8] | 22.79944 | 0.59093 | 38.5824 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 40.81302 | 0.72748 | 56.1019 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

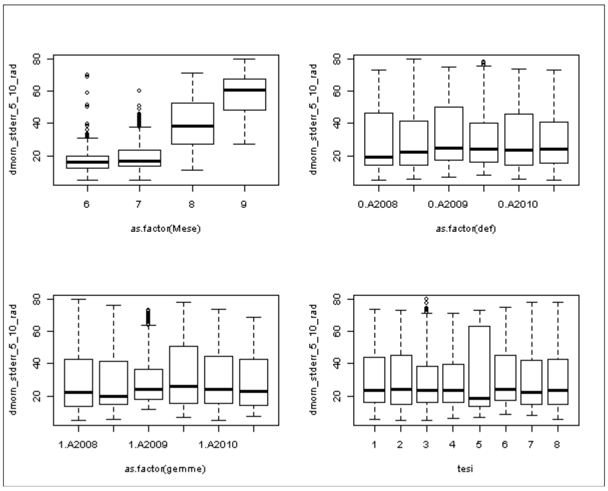
**(Dispersion parameter for gaussian family taken to be 125.5711 )**

- Null deviance: 863676.3401 on 2543 degrees of freedom.
- Residual deviance: 318322.8264 on 2535 degrees of freedom.

**AIC: 19525**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## varianza mattutina tra le ore 5-10 radiazione: dmorn_var_5_10_rad cacciagrande

-

**Call: glm(formula = dmorn_var_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -15464 | -2304 | -551 | 1802 | 25893 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 2429.815 | 318.002 | 7.6409 | 3.038e-14 | *** |
| as.factor(def)[T.1] | -1142.746 | 216.183 | -5.2860 | 1.357e-07 | *** |
| as.factor(gemme)[T.3] | 517.942 | 216.183 | 2.3958 | 0.016654 | * |
| as.factor(dirad)[T.1] | -464.111 | 216.183 | -2.1468 | 0.031901 | * |
| AnnoF[T.A2009] | 320.648 | 264.769 | 1.2110 | 0.225990 | |
| AnnoF[T.A2010] | -46.436 | 264.769 | -0.1754 | 0.860792 | |
| as.factor(Mese)[T.7] | 826.557 | 287.502 | 2.8750 | 0.004074 | ** |
| as.factor(Mese)[T.8] | 8848.857 | 287.502 | 30.7784 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 18768.693 | 353.937 | 53.0283 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

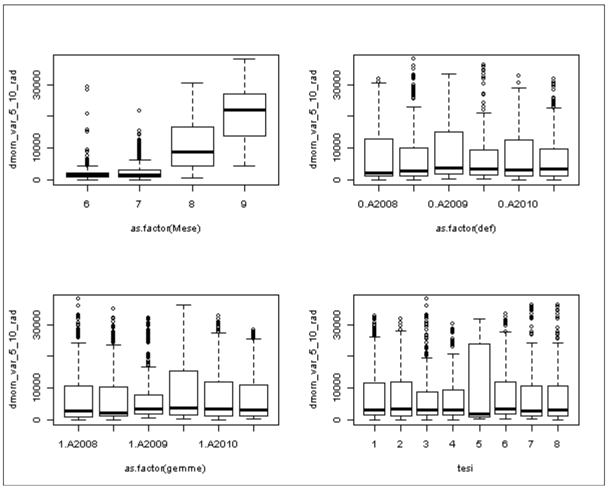
**(Dispersion parameter for gaussian family taken to be 29723550 )**

- Null deviance: 185583124897.419 on 2543 degrees of freedom.
- Residual deviance: 75349199046.1903 on 2535 degrees of freedom.

**AIC: 51006**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**



## errore standard serale tra le ore 15-20 radiazione: dtwi_stderr_15_20_rad cacciagrande

- 

**Call: glm(formula = dtwi_stderr_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -37.4 | -9.7 | 1.1 | 9.3 | 34.0 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 41.37530 | 0.78515 | 52.6972 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 4.40555 | 0.53376 | 8.2538 | 2.437e-16 | *** |
| as.factor(gemme)[T.3] | -4.45139 | 0.53376 | -8.3397 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -1.74397 | 0.53376 | -3.2673 | 0.0011001 | ** |
| AnnoF[T.A2009] | -2.16099 | 0.65372 | -3.3057 | 0.0009606 | *** |
| AnnoF[T.A2010] | -6.48806 | 0.65372 | -9.9248 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 8.78256 | 0.70985 | 12.3725 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 26.78769 | 0.70985 | 37.7373 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 39.14195 | 0.87388 | 44.7911 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

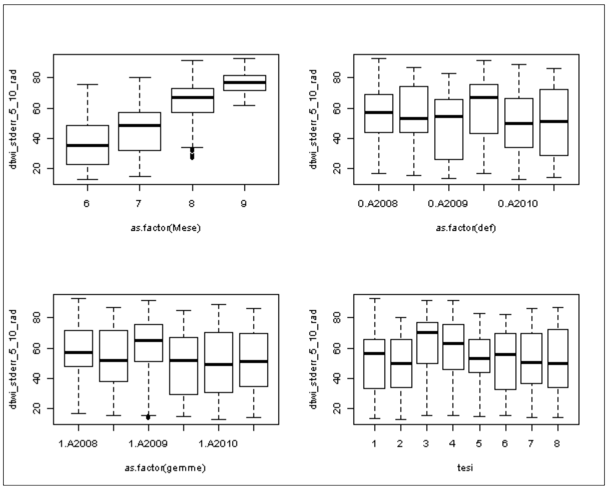
**(Dispersion parameter for gaussian family taken to be 181.1959 )**

- **Null deviance: 1001027.3626 on 2543 degrees of freedom.**
- **Residual deviance: 459331.7274 on 2535 degrees of freedom.**

**AIC: 20458**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**



## varianza serale tra le ore 15-20 radiazione: dtwi_var_15_20_rad cacciagrande

- 

**Call: glm(formula = dtwi_var_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -21551 | -5769 | -164 | 5550 | 22542 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 11799.83 | 467.72 | 25.2285 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 3290.99 | 317.96 | 10.3502 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -3139.04 | 317.96 | -9.8723 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -1035.81 | 317.96 | -3.2576 | 0.001138 | ** |
| AnnoF[T.A2009] | -684.68 | 389.42 | -1.7582 | 0.078838 | . |
| AnnoF[T.A2010] | -3398.48 | 389.42 | -8.7269 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 4513.07 | 422.86 | 10.6727 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 15801.23 | 422.86 | 37.3676 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 25592.67 | 520.57 | 49.1625 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

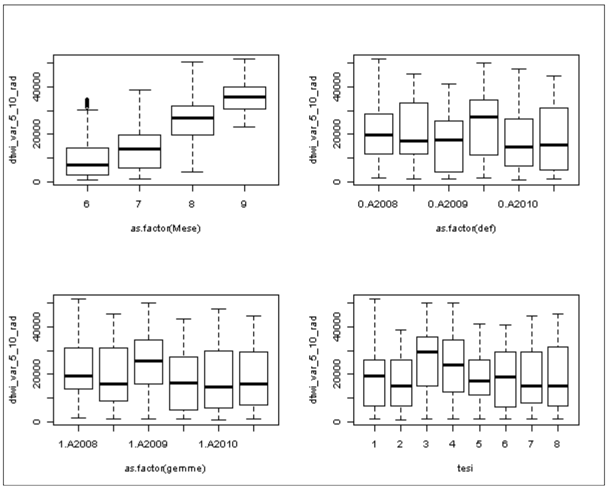
**(Dispersion parameter for gaussian family taken to be 64300053 )**

- **Null deviance: 386395623378.894 on 2543 degrees of freedom.**
- **Residual deviance: 163000633840.193 on 2535 degrees of freedom.**

**AIC: 52969**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Analisi indici giornalieri temperatura grappolo cacciagrande

### temperatura media: avg_tgrap cacciagrande

- 

**Call: glm(formula = avg_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -7.947 | -1.314 | 0.083 | 1.327 | 5.590 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 23.882070 | 0.119376 | 200.0580 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.055107 | 0.081797 | -0.6737 | 0.5005634 | |
| as.factor(gemme)[T.3] | -0.281736 | 0.081797 | -3.4443 | 0.0005822 | *** |
| as.factor(dirad)[T.1] | 0.038914 | 0.081797 | 0.4757 | 0.6343079 | |
| AnnoF[T.A2009] | 0.191056 | 0.101490 | 1.8825 | 0.0598869 | . |
| AnnoF[T.A2010] | -0.093189 | 0.101490 | -0.9182 | 0.3586001 | |
| as.factor(Mese)[T.7] | 3.556645 | 0.108158 | 32.8838 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.784285 | 0.108158 | 34.9885 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.689462 | 0.133151 | 12.6883 | < 2.2e-16 | *** |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

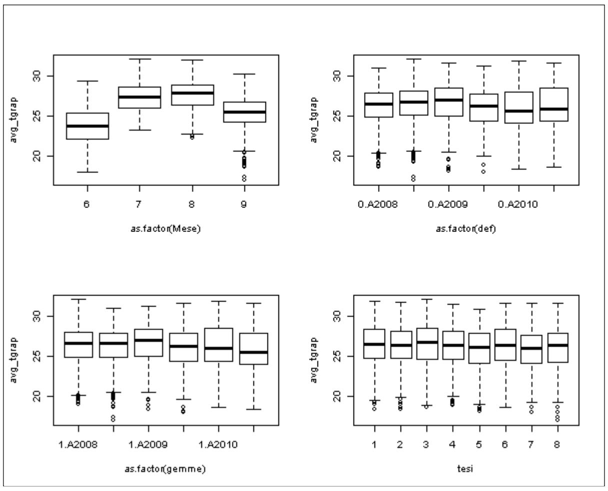
(Dispersion parameter for gaussian family taken to be 4.031367 )

- Null deviance: 16211.5715 on 2437 degrees of freedom.
- Residual deviance: 9792.1904 on 2429 degrees of freedom.

AIC: 10329

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 0.929344345293706




## cumulata temperatura grappolo: sum_tgrap cacciagrande

- 

Call: glm(formula = sum_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))

Deviance Residuals:

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -191 | -32 | 2 | 32 | 134 |

Coefficients:

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 573.16974 | 2.86502 | 200.0581 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -1.32253 | 1.96313 | -0.6737 | 0.5005759 | |
| as.factor(gemme)[T.3] | -6.76168 | 1.96313 | -3.4443 | 0.0005822 | *** |
| as.factor(dirad)[T.1] | 0.93391 | 1.96313 | 0.4757 | 0.6343130 | |
| AnnoF[T.A2009] | 4.58532 | 2.43577 | 1.8825 | 0.0598880 | . |
| AnnoF[T.A2010] | -2.23658 | 2.43577 | -0.9182 | 0.3585918 | |
| as.factor(Mese)[T.7] | 85.35942 | 2.59579 | 32.8838 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 90.82278 | 2.59579 | 34.9885 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 40.54704 | 3.19562 | 12.6883 | < 2.2e-16 | *** |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

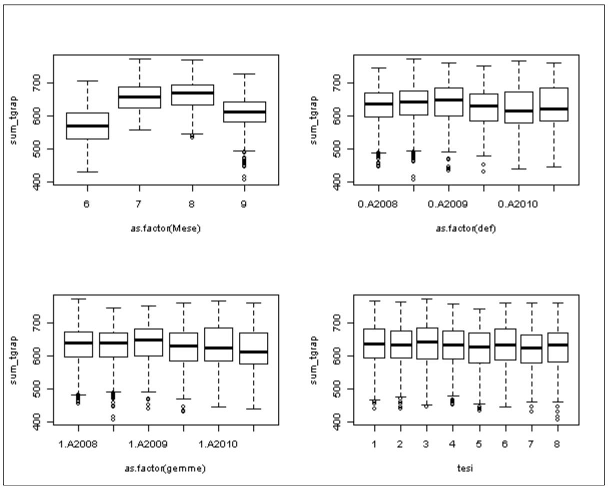
(Dispersion parameter for gaussian family taken to be 2322.067 )

- Null deviance: 9337859.1174 on 2437 degrees of freedom.
- Residual deviance: 5640300.3421 on 2429 degrees of freedom.

AIC: 25825

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 1




## escursione termica grappolo: et_tgrap cacciagrande

- 

**Call: glm(formula = et_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -13.299 | -2.429 | -0.091 | 2.643 | 10.852 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 13.11312 | 0.20913 | 62.7029 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.49771 | 0.14330 | 3.4732 | 0.0005232 | *** |
| as.factor(gemme)[T.3] | -0.48697 | 0.14330 | -3.3983 | 0.0006890 | *** |
| as.factor(dirad)[T.1] | -0.32292 | 0.14330 | -2.2535 | 0.0243186 | * |
| AnnoF[T.A2009] | -0.78046 | 0.17780 | -4.3896 | 1.184e-05 | *** |
| AnnoF[T.A2010] | 0.72705 | 0.17780 | 4.0892 | 4.470e-05 | *** |
| as.factor(Mese)[T.7] | 2.53430 | 0.18948 | 13.3751 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.79803 | 0.18948 | 20.0446 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.02614 | 0.23326 | 8.6861 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

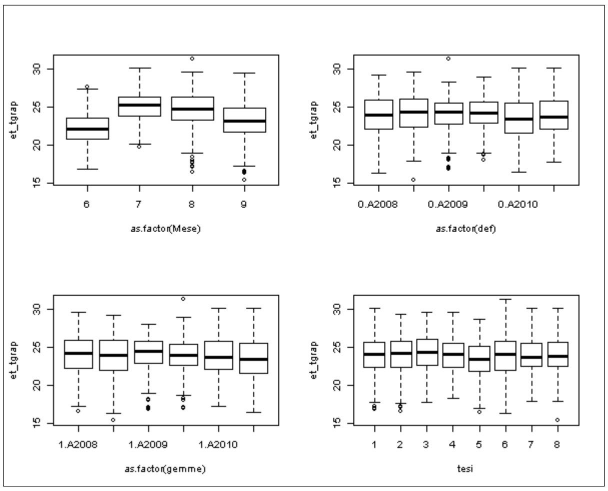
**(Dispersion parameter for gaussian family taken to be 12.37247 )**

- **Null deviance: 36517.6021 on 2437 degrees of freedom.**
- **Residual deviance: 30052.7217 on 2429 degrees of freedom.**

**AIC: 13062**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.929470118224397**




## media ore 3-10 temp. grappolo: morning_03_10_index_tgrap cacciagrande

- 

**Call: glm(formula = morning_03_10_index_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -7.7334 | -1.3665 | -0.0039 | 1.4578 | 6.6751 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 22.425327 | 0.127057 | 176.4982 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.256371 | 0.087060 | 2.9447 | 0.003263 | ** |
| as.factor(gemme)[T.3] | -0.240453 | 0.087060 | -2.7619 | 0.005790 | ** |
| as.factor(dirad)[T.1] | 0.043942 | 0.087060 | 0.5047 | 0.613796 | |
| AnnoF[T.A2009] | -0.019245 | 0.108021 | -0.1782 | 0.858610 | |
| AnnoF[T.A2010] | -0.455111 | 0.108021 | -4.2132 | 2.61e-05 | *** |
| as.factor(Mese)[T.7] | 2.810714 | 0.115117 | 24.4161 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.408460 | 0.115117 | 20.9218 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.038598 | 0.141718 | 7.3286 | 3.15e-13 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

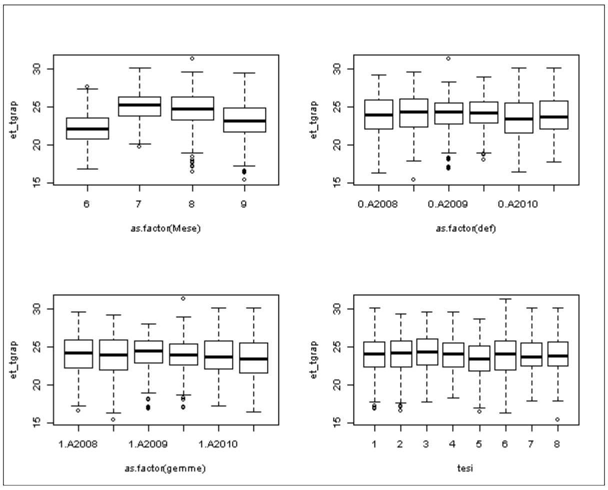
**(Dispersion parameter for gaussian family taken to be 4.566856 )**

- **Null deviance: 14597.0517 on 2437 degrees of freedom.**
- **Residual deviance: 11092.8934 on 2429 degrees of freedom.**

**AIC: 10633**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.929470118224397**




## media ore 11-18 temp. grappolo: diurnal_11_18_index_tgrap cacciagrande

- 

**Call: glm(formula = diurnal_11_18_index_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -11.85 | -1.94 | 0.12 | 2.08 | 8.13 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 28.845723 | 0.181063 | 159.3132 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.164280 | 0.124066 | -1.3241 | 0.18558 | |
| as.factor(gemme)[T.3] | -0.593122 | 0.124066 | -4.7807 | 1.851e-06 | *** |
| as.factor(dirad)[T.1] | -0.004723 | 0.124066 | -0.0381 | 0.96964 | |
| AnnoF[T.A2009] | -0.051667 | 0.153935 | -0.3356 | 0.73717 | |
| AnnoF[T.A2010] | 0.293515 | 0.153935 | 1.9067 | 0.05667 | . |
| as.factor(Mese)[T.7] | 4.776130 | 0.164048 | 29.1142 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 5.620599 | 0.164048 | 34.2619 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.465951 | 0.201956 | 12.2103 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

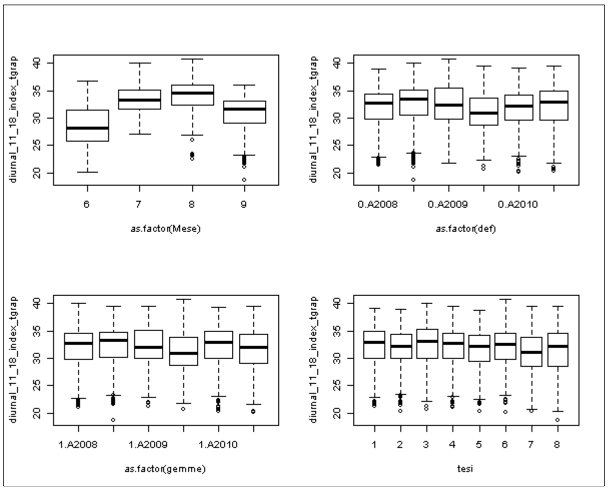
**(Dispersion parameter for gaussian family taken to be 9.274266 )**

- **Null deviance: 35681.1273 on 2437 degrees of freedom.**
- **Residual deviance: 22527.193 on 2429 degrees of freedom.**

**AIC: 12360**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.995462938565478**




## media ore 19-02 temp. grappolo: night_19_02_index_tgrap cacciagrande

- 

**Call: glm(formula = night_19_02_index_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -6.8302 | -1.3097 | 0.0034 | 1.2286 | 5.9746 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 20.375171 | 0.113612 | 179.3404 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.257410 | 0.077848 | -3.3066 | 0.0009582 | *** |
| as.factor(gemme)[T.3] | -0.011632 | 0.077848 | -0.1494 | 0.8812392 | |
| as.factor(dirad)[T.1] | 0.077521 | 0.077848 | 0.9958 | 0.3194413 | |
| AnnoF[T.A2009] | 0.644071 | 0.096590 | 6.6681 | 3.197e-11 | *** |
| AnnoF[T.A2010] | -0.117980 | 0.096590 | -1.2215 | 0.2220313 | |
| as.factor(Mese)[T.7] | 3.083083 | 0.102935 | 29.9516 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.323787 | 0.102935 | 32.2900 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.563833 | 0.126722 | 12.3407 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

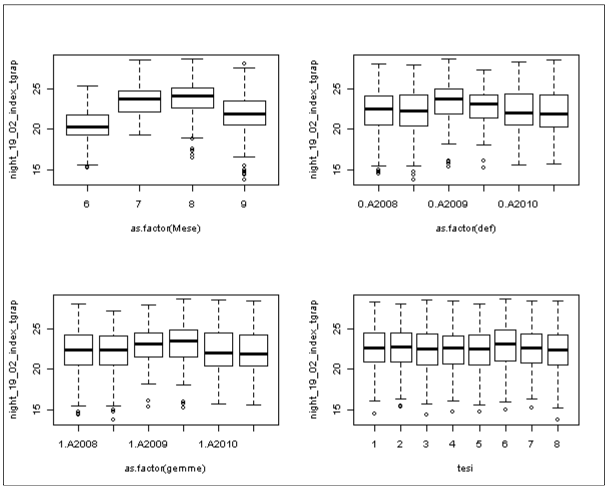
**(Dispersion parameter for gaussian family taken to be 3.65146 )**

- **Null deviance: 13984.8394 on 2437 degrees of freedom.**
- **Residual deviance: 8869.3964 on 2429 degrees of freedom.**

**AIC: 10087**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.880164849192521**




## errore standard mattutino tra le ore 5-10 temp. grappolo: dmorn_stderr_5_10_tgrap cacciagrande

- 

**Call: glm(formula = dmorn_stderr_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -2.098 | -0.410 | -0.018 | 0.426 | 2.156 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.616871 | 0.035765 | 45.2088 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.182442 | 0.024506 | 7.4447 | 1.341e-13 | *** |
| as.factor(gemme)[T.3] | -0.035131 | 0.024506 | -1.4335 | 0.1518 | |
| as.factor(dirad)[T.1] | -0.039766 | 0.024506 | -1.6227 | 0.1048 | |
| AnnoF[T.A2009] | -0.163214 | 0.030406 | -5.3678 | 8.726e-08 | *** |
| AnnoF[T.A2010] | -0.038545 | 0.030406 | -1.2677 | 0.2050 | |
| as.factor(Mese)[T.7] | 0.339548 | 0.032404 | 10.4787 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 0.543577 | 0.032404 | 16.7751 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.221830 | 0.039892 | 5.5608 | 2.979e-08 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

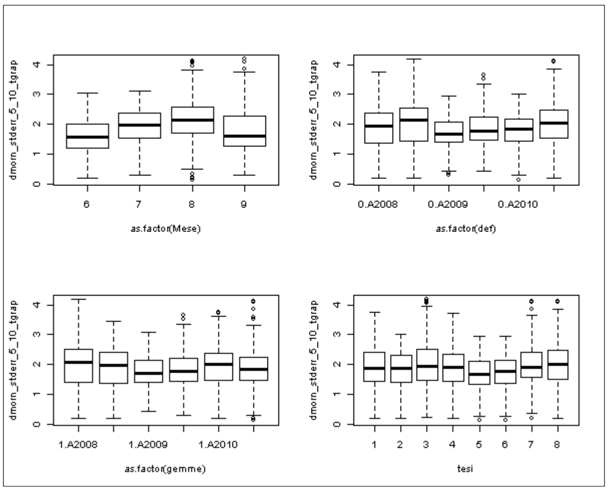
**(Dispersion parameter for gaussian family taken to be 0.3618479 )**

- **Null deviance: 1016.6669 on 2437 degrees of freedom.**
- **Residual deviance: 878.9286 on 2429 degrees of freedom.**

**AIC: 4451.4**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.161092712191829**




## varianza mattutina tra le ore 5-10 temp. grappolo: dmorn_var_5_10_tgrap cacciagrande

- 

**Call: glm(formula = dmorn_var_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -34.3 | -10.1 | -2.4 | 8.5 | 75.2 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 18.14155 | 0.85835 | 21.1354 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 5.07319 | 0.58815 | 8.6257 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -0.95655 | 0.58815 | -1.6264 | 0.10400 | |
| as.factor(dirad)[T.1] | -1.34102 | 0.58815 | -2.2801 | 0.02269 | * |
| AnnoF[T.A2009] | -4.98469 | 0.72975 | -6.8307 | 1.064e-11 | *** |
| AnnoF[T.A2010] | -1.69570 | 0.72975 | -2.3237 | 0.02022 | * |
| as.factor(Mese)[T.7] | 7.02284 | 0.77769 | 9.0304 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 13.03139 | 0.77769 | 16.7566 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 6.31372 | 0.95740 | 6.5947 | 5.211e-11 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

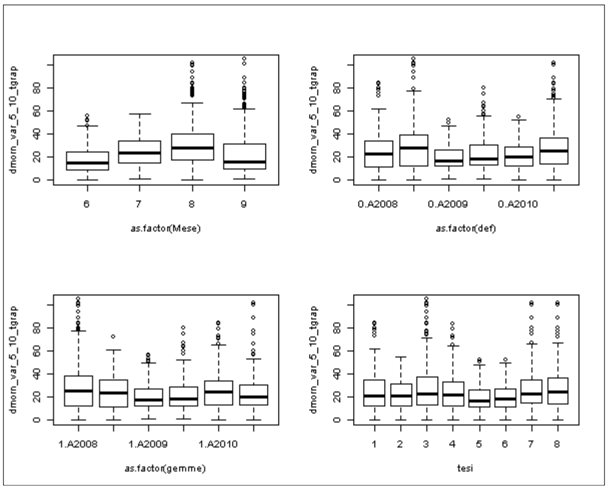
**(Dispersion parameter for gaussian family taken to be 208.4239 )**

- **Null deviance: 591174.5803 on 2437 degrees of freedom.**
- **Residual deviance: 506261.6217 on 2429 degrees of freedom.**

**AIC: 19948**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## errore standard serale tra le ore 15-20 temp. grappolo: dtwi_stderr_15_20_tgrap cacciagrande

-

**Call: glm(formula = dtwi_stderr_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1.2891 | -0.2440 | -0.0048 | 0.2668 | 1.2823 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.1275460 | 0.0236163 | 47.7443 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.0276103 | 0.0161821 | 1.7062 | 0.088094 | . |
| as.factor(gemme)[T.3] | -0.0880611 | 0.0161821 | -5.4419 | 5.800e-08 | *** |
| as.factor(dirad)[T.1] | 0.0041656 | 0.0161821 | 0.2574 | 0.796874 | |
| AnnoF[T.A2009] | -0.1289375 | 0.0200780 | -6.4218 | 1.614e-10 | *** |
| AnnoF[T.A2010] | 0.0550185 | 0.0200780 | 2.7402 | 0.006184 | ** |
| as.factor(Mese)[T.7] | 0.2033194 | 0.0213971 | 9.5022 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 0.4098589 | 0.0213971 | 19.1549 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.3552857 | 0.0263415 | 13.4877 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

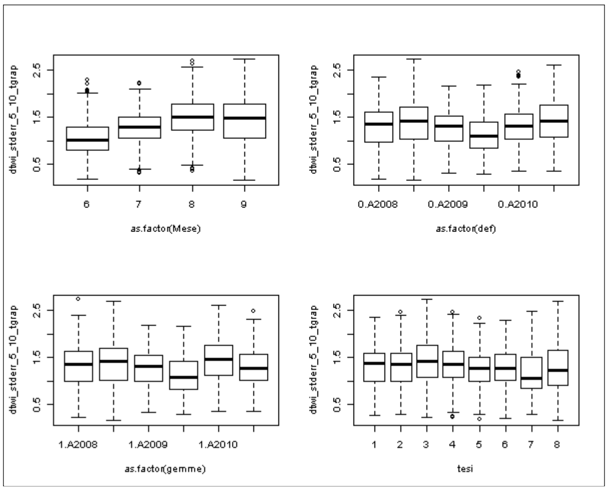
**(Dispersion parameter for gaussian family taken to be 0.1577778 )**

- **Null deviance: 468.0557 on 2437 degrees of freedom.**
- **Residual deviance: 383.2422 on 2429 degrees of freedom.**

**AIC: 2427.8**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.195729858433260**




## varianza serale tra le ore 15-20 temp. grappolo: dtwi_var_15_20_tgrap cacciagrande

- 

**Call: glm(formula = dtwi_var_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -15.47 | -4.29 | -0.88 | 3.76 | 29.50 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 8.583742 | 0.381801 | 22.4823 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.855555 | 0.261613 | 3.2703 | 0.001089 | ** |
| as.factor(gemme)[T.3] | -1.236144 | 0.261613 | -4.7251 | 2.431e-06 | *** |
| as.factor(dirad)[T.1] | 0.062948 | 0.261613 | 0.2406 | 0.809872 | |
| AnnoF[T.A2009] | -2.473198 | 0.324597 | -7.6193 | 3.631e-14 | *** |
| AnnoF[T.A2010] | 0.554709 | 0.324597 | 1.7089 | 0.087595 | . |
| as.factor(Mese)[T.7] | 2.738237 | 0.345922 | 7.9158 | 3.703e-15 | *** |
| as.factor(Mese)[T.8] | 6.538210 | 0.345922 | 18.9008 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 6.255260 | 0.425858 | 14.6886 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

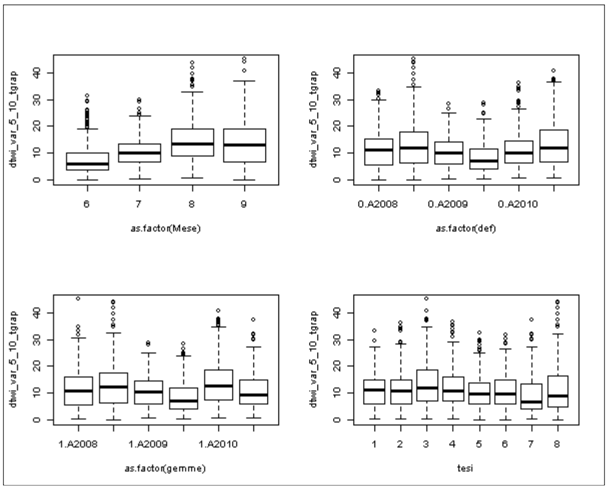
**(Dispersion parameter for gaussian family taken to be 41.23764 )**

- **Null deviance: 123755.9285 on 2437 degrees of freedom.**
- **Residual deviance: 100166.2299 on 2429 degrees of freedom.**

**AIC: 15998**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.999937217880801**




## Analisi indici giornalieri taria canopy cacciagrande

### temperatura canopy media: avg_tair cacciagrande

- 

**Call: glm(formula = avg_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -7.975 | -1.424 | 0.040 | 1.449 | 5.576 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 24.403547 | 0.122876 | 198.6023 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.136887 | 0.083534 | 1.6387 | 0.10140 | |
| as.factor(gemme)[T.3] | -0.147023 | 0.083534 | -1.7600 | 0.07852 | . |
| as.factor(dirad)[T.1] | -0.141141 | 0.083534 | -1.6896 | 0.09122 | . |
| AnnoF[T.A2009] | 0.250330 | 0.102307 | 2.4468 | 0.01448 | * |
| AnnoF[T.A2010] | -0.136624 | 0.102307 | -1.3354 | 0.18186 | |
| as.factor(Mese)[T.7] | 3.605546 | 0.111091 | 32.4557 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.321202 | 0.111091 | 29.8962 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.099432 | 0.136762 | 8.0390 | 1.375e-15 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

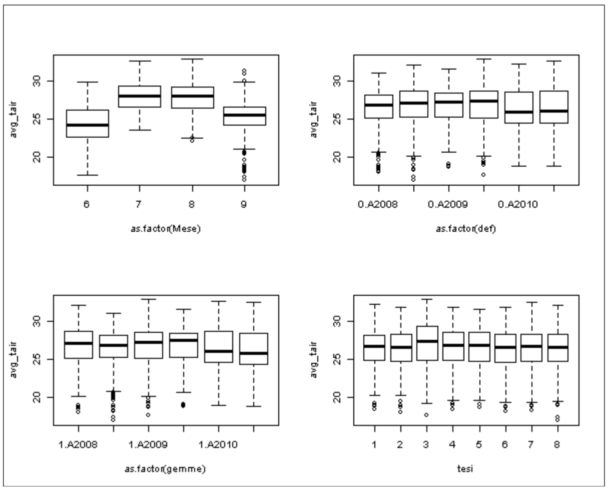
**(Dispersion parameter for gaussian family taken to be 4.437912 )**

- **Null deviance: 17562.6518 on 2543 degrees of freedom.**
- **Residual deviance: 11250.1067 on 2535 degrees of freedom.**

**AIC: 11022**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.917290593885808**




### cumulata temperatura canopy: sum_tair cacciagrande

•

**Call: glm(formula = sum_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -191.40 | -34.18 | 0.95 | 34.77 | 133.82 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 585.6852 | 2.9490 | 198.6024 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 3.2853 | 2.0048 | 1.6387 | 0.10140 | |
| as.factor(gemme)[T.3] | -3.5286 | 2.0048 | -1.7600 | 0.07852 | . |
| as.factor(dirad)[T.1] | -3.3874 | 2.0048 | -1.6896 | 0.09122 | . |
| AnnoF[T.A2009] | 6.0079 | 2.4554 | 2.4468 | 0.01448 | * |
| AnnoF[T.A2010] | -3.2789 | 2.4554 | -1.3354 | 0.18187 | |
| as.factor(Mese)[T.7] | 86.5331 | 2.6662 | 32.4557 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 79.7088 | 2.6662 | 29.8962 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 26.3864 | 3.2823 | 8.0390 | 1.375e-15 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

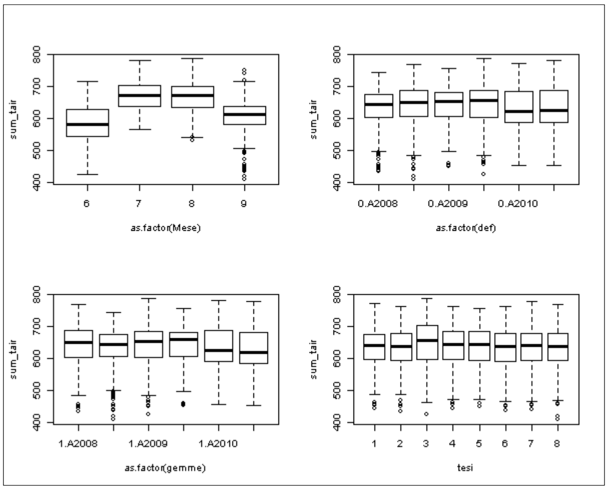
**(Dispersion parameter for gaussian family taken to be 2556.235 )**

- **Null deviance: 10116076.1445 on 2543 degrees of freedom.**
- **Residual deviance: 6480054.5913 on 2535 degrees of freedom.**

**AIC: 27192**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## escursione termica canopy: et_tair cacciagrande

•

**Call: glm(formula = et_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -13.03 | -2.41 | -0.24 | 2.71 | 10.00 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 13.2734977 | 0.2016425 | 65.8269 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.0018182 | 0.1370800 | 0.0133 | 0.9894182 | |
| as.factor(gemme)[T.3] | 0.1548289 | 0.1370800 | 1.1295 | 0.2588029 | |
| as.factor(dirad)[T.1] | 0.5191645 | 0.1370800 | 3.7873 | 0.0001558 | *** |
| AnnoF[T.A2009] | 0.0534633 | 0.1678880 | 0.3184 | 0.7501727 | |
| AnnoF[T.A2010] | 0.6400165 | 0.1678880 | 3.8122 | 0.0001410 | *** |
| as.factor(Mese)[T.7] | 2.1773072 | 0.1823026 | 11.9434 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.5447665 | 0.1823026 | 13.9590 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.3590601 | 0.2244289 | 1.5999 | 0.1097490 | |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

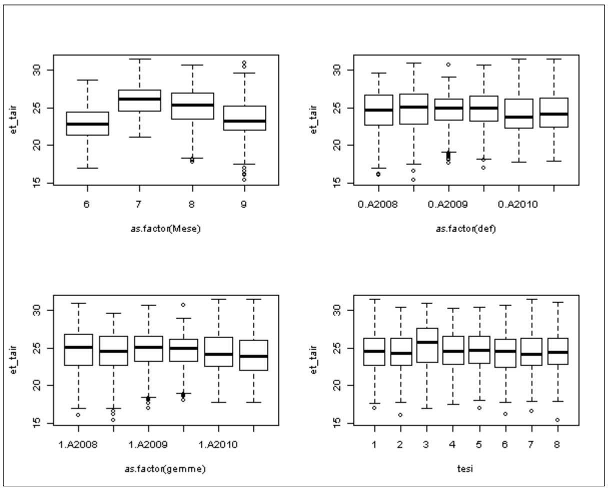
**(Dispersion parameter for gaussian family taken to be 11.95103 )**

- **Null deviance: 33872.5834 on 2543 degrees of freedom.**
- **Residual deviance: 30295.8659 on 2535 degrees of freedom.**

**AIC: 13542**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.75486531297534**



## media ore 03-10 temp. canopy: morning_03_10_index_tair cacciagrande

-

**Call: glm(formula = morning_03_10_index_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -6.998 | -1.494 | -0.034 | 1.589 | 6.782 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 23.240751 | 0.129044 | 180.0999 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.211827 | 0.087726 | 2.4146 | 0.015821 | * |
| as.factor(gemme)[T.3] | -0.268020 | 0.087726 | -3.0552 | 0.002273 | ** |
| as.factor(dirad)[T.1] | -0.275668 | 0.087726 | -3.1424 | 0.001695 | ** |
| AnnoF[T.A2009] | 0.058540 | 0.107442 | 0.5448 | 0.585907 | |
| AnnoF[T.A2010] | -0.427389 | 0.107442 | -3.9779 | 7.149e-05 | *** |
| as.factor(Mese)[T.7] | 3.032190 | 0.116667 | 25.9902 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.307272 | 0.116667 | 19.7766 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.614081 | 0.143626 | 4.2755 | 1.977e-05 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

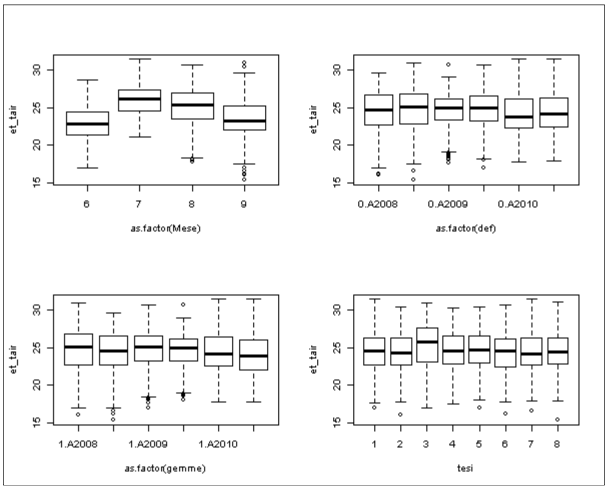
**(Dispersion parameter for gaussian family taken to be 4.894573 )**

- **Null deviance: 16673.6137 on 2543 degrees of freedom.**
- **Residual deviance: 12407.7437 on 2535 degrees of freedom.**

**AIC: 11271**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.75486531297534**




## media ore 11-18 temp. canopy: diurnal_11_18_index_tair cacciagrande

- 

**Call: glm(formula = diurnal_11_18_index_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -11.94 | -1.90 | 0.17 | 1.98 | 7.21 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 29.175537 | 0.177539 | 164.3336 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.085551 | 0.120694 | 0.7088 | 0.47850 | |
| as.factor(gemme)[T.3] | -0.028016 | 0.120694 | -0.2321 | 0.81646 | |
| as.factor(dirad)[T.1] | 0.133381 | 0.120694 | 1.1051 | 0.26921 | |
| AnnoF[T.A2009] | 0.403221 | 0.147819 | 2.7278 | 0.00642 | ** |
| AnnoF[T.A2010] | 0.189152 | 0.147819 | 1.2796 | 0.20080 | |
| as.factor(Mese)[T.7] | 4.638598 | 0.160510 | 28.8990 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 4.610192 | 0.160510 | 28.7221 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.301496 | 0.197601 | 6.5865 | 5.457e-11 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

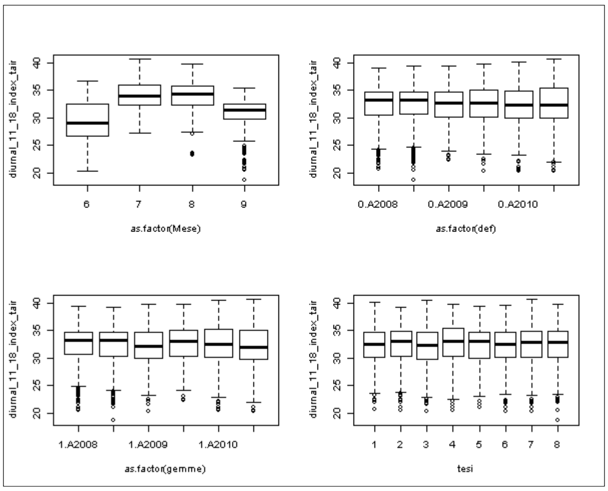
**(Dispersion parameter for gaussian family taken to be 9.264596 )**

- **Null deviance: 34769.0992 on 2543 degrees of freedom.**
- **Residual deviance: 23485.7511 on 2535 degrees of freedom.**

**AIC: 12894**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.988149379469373**




## media ore 19-02 temp. canopy: night_19_02_index_tair cacciagrande

- 

**Call: glm(formula = night_19_02_index_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -6.967 | -1.395 | -0.029 | 1.353 | 7.692 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 20.794362 | 0.118548 | 175.4083 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.113280 | 0.080591 | 1.4056 | 0.1599611 | |
| as.factor(gemme)[T.3] | -0.145036 | 0.080591 | -1.7997 | 0.0720338 | . |
| as.factor(dirad)[T.1] | -0.281137 | 0.080591 | -3.4884 | 0.0004941 | *** |
| AnnoF[T.A2009] | 0.289228 | 0.098704 | 2.9303 | 0.0034170 | ** |
| AnnoF[T.A2010] | -0.171627 | 0.098704 | -1.7388 | 0.0821895 | . |
| as.factor(Mese)[T.7] | 3.145841 | 0.107178 | 29.3515 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.046134 | 0.107178 | 28.4212 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.382719 | 0.131945 | 10.4795 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

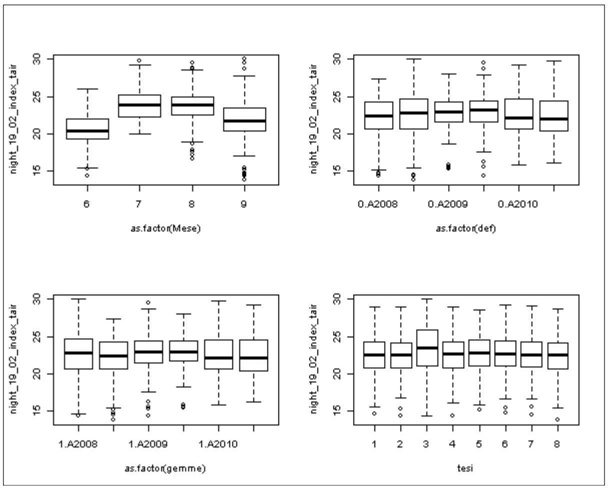
**(Dispersion parameter for gaussian family taken to be 4.130784 )**

- **Null deviance: 15347.4828 on 2543 degrees of freedom.**
- **Residual deviance: 10471.5366 on 2535 degrees of freedom.**

**AIC: 10839**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.854951217793666**




## errore standard mattutino tra le ore 5-10 temp. canopy: dmorn_stderr_5_10_tair cacciagrande

- 

**Call: glm(formula = dmorn_stderr_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -2.0903 | -0.3863 | -0.0012 | 0.4451 | 1.7493 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.7397029 | 0.0342991 | 50.7215 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.0018404 | 0.0233171 | -0.0789 | 0.937095 | |
| as.factor(gemme)[T.3] | 0.0115824 | 0.0233171 | 0.4967 | 0.619420 | |
| as.factor(dirad)[T.1] | 0.1123758 | 0.0233171 | 4.8195 | 1.525e-06 | *** |
| AnnoF[T.A2009] | -0.0794618 | 0.0285575 | -2.7825 | 0.005434 | ** |
| AnnoF[T.A2010] | 0.0224024 | 0.0285575 | 0.7845 | 0.432841 | |
| as.factor(Mese)[T.7] | 0.2997714 | 0.0310094 | 9.6671 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 0.3628525 | 0.0310094 | 11.7014 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -0.1113775 | 0.0381751 | -2.9175 | 0.003559 | ** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

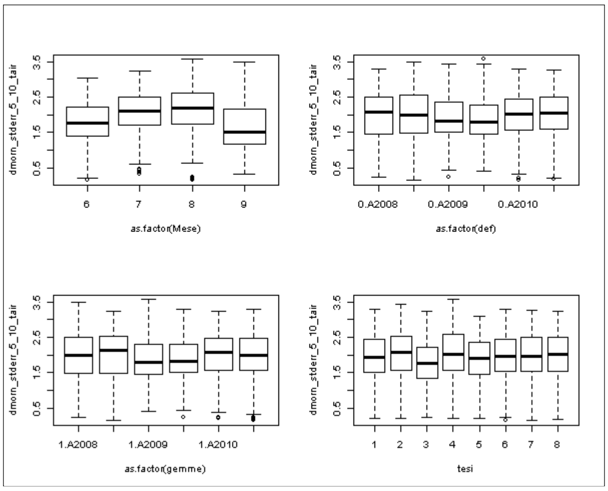
**(Dispersion parameter for gaussian family taken to be 0.3457859 )**

- Null deviance: 978.1992 on 2543 degrees of freedom.
- Residual deviance: 876.5671 on 2535 degrees of freedom.

AIC: 4529

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 0.122682038598181



## varianza mattutina tra le ore 5-10 temp. canopy: dmorn_var_5_10_tair cacciagrande

-

Call: glm(formula = dmorn_var_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))

Deviance Residuals:

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -32.0 | -10.2 | -2.1 | 9.7 | 51.6 |

Coefficients:

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 20.325155 | 0.793244 | 25.6228 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.087223 | 0.539261 | 0.1617 | 0.8715197 | |
| as.factor(gemme)[T.3] | 0.140971 | 0.539261 | 0.2614 | 0.7937944 | |
| as.factor(dirad)[T.1] | 2.780830 | 0.539261 | 5.1567 | 2.707e-07 | *** |
| AnnoF[T.A2009] | -2.296008 | 0.660457 | -3.4764 | 0.0005168 | *** |
| AnnoF[T.A2010] | 0.096102 | 0.660457 | 0.1455 | 0.8843216 | |
| as.factor(Mese)[T.7] | 6.661389 | 0.717163 | 9.2885 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 8.753226 | 0.717163 | 12.2054 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -1.789288 | 0.882884 | -2.0266 | 0.0428038 | * |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

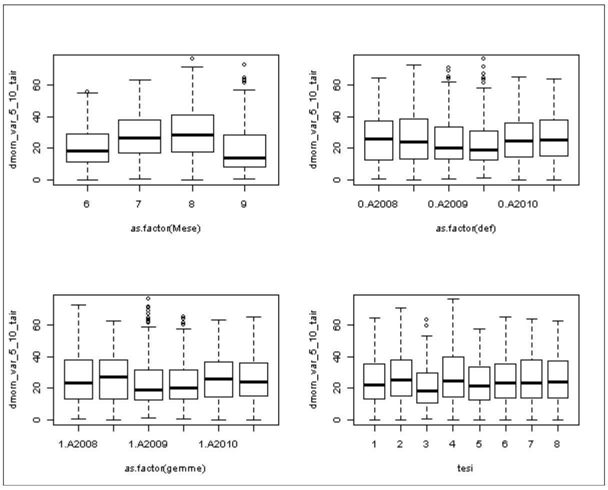
(Dispersion parameter for gaussian family taken to be 184.9505 )

- Null deviance: 522010.8923 on 2543 degrees of freedom.
- Residual deviance: 468849.4747 on 2535 degrees of freedom.

AIC: 20510

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 0.999999999159298




## errore standard serale tra le ore 15-20 temp. canopy: dtwi_stderr_15_20_tair cacciagrande

•

**Call: glm(formula = dtwi_stderr_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1.2582 | -0.2196 | -0.0091 | 0.2283 | 1.2946 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.0618217 | 0.0224482 | 47.3009 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.0052689 | 0.0152607 | 0.3453 | 0.729925 | |
| as.factor(gemme)[T.3] | 0.0104856 | 0.0152607 | 0.6871 | 0.492083 | |
| as.factor(dirad)[T.1] | 0.0673691 | 0.0152607 | 4.4146 | 1.055e-05 | *** |
| AnnoF[T.A2009] | 0.0576103 | 0.0186904 | 3.0823 | 0.002076 | ** |
| AnnoF[T.A2010] | 0.0915713 | 0.0186904 | 4.8994 | 1.022e-06 | *** |
| as.factor(Mese)[T.7] | 0.1742623 | 0.0202952 | 8.5864 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 0.3428951 | 0.0202952 | 16.8954 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.2724248 | 0.0249850 | 10.9035 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

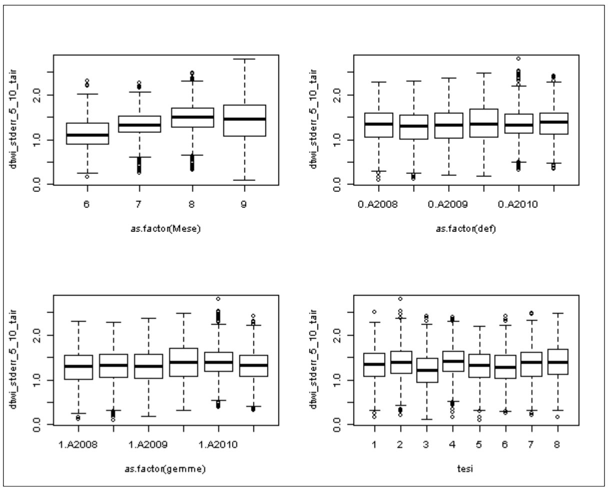
**(Dispersion parameter for gaussian family taken to be 0.1481171 )**

- **Null deviance: 427.2334 on 2543 degrees of freedom.**
- **Residual deviance: 375.4769 on 2535 degrees of freedom.**

**AIC: 2372.1**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.130270660818011**




## varianza serale tra le ore 15-20 temp. canopy: dtwi_var_15_20_taircacciagrande

•

**Call: glm(formula = dtwi_var_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

cacciagrande_new_indici, subset = ((jd > 153) & (jd < 260)))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -14.65 | -4.11 | -0.96 | 3.11 | 31.89 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 7.36898 | 0.36629 | 20.1179 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.19925 | 0.24901 | 0.8002 | 0.423678 | |
| as.factor(gemme)[T.3] | 0.10589 | 0.24901 | 0.4252 | 0.670696 | |
| as.factor(dirad)[T.1] | 1.05163 | 0.24901 | 4.2232 | 2.493e-05 | *** |
| AnnoF[T.A2009] | 0.93643 | 0.30497 | 3.0705 | 0.002160 | ** |
| AnnoF[T.A2010] | 1.23072 | 0.30497 | 4.0355 | 5.610e-05 | *** |
| as.factor(Mese)[T.7] | 2.47532 | 0.33116 | 7.4747 | 1.059e-13 | *** |
| as.factor(Mese)[T.8] | 5.52153 | 0.33116 | 16.6734 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 5.08494 | 0.40768 | 12.4728 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

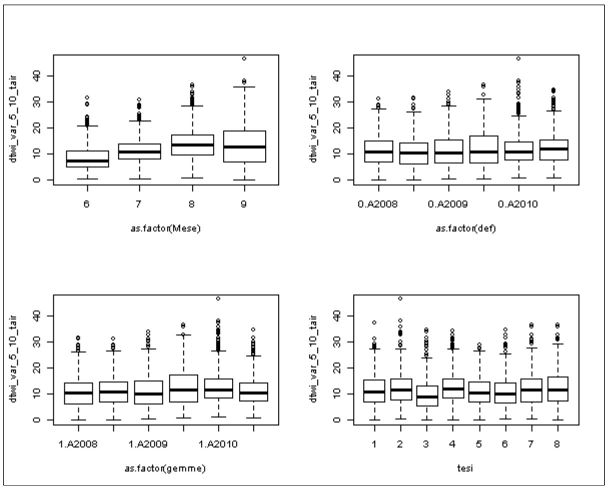
**(Dispersion parameter for gaussian family taken to be 39.43595 )**

- **Null deviance: 114161.8853 on 2543 degrees of freedom.**
- **Residual deviance: 99970.1229 on 2535 degrees of freedom.**

**AIC: 16579**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.996221858156876**




## Analisi statistica campione Tuscania cortigliano

## IBIMET CNR, Istituto di Biometeorologia di Firenze -CNR

*Matese.A.,Genesio L.,Crisci A.*

## Temperatura Grappolo cortigliano

### Temperatura Grappolo Mattina

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Morning"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -10.97 | -2.53 | -0.15 | 2.43 | 14.22 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 19.958008 | 0.120799 | 165.2170 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.734746 | 0.081437 | 9.0222 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -0.108216 | 0.081437 | -1.3288 | 0.1839 | |
| as.factor(dirad)[T.1] | 0.011733 | 0.081437 | 0.1441 | 0.8854 | |

| | | | | | |
|---|---|---|---|---|---|
| AnnoF[T.A2009] | 0.420359 | 0.099963 | 4.2052 | 2.64e-05 | *** |
| AnnoF[T.A2010] | 0.011198 | 0.099881 | 0.1121 | 0.9107 | |
| as.factor(Mese)[T.7] | 2.178058 | 0.110409 | 19.7273 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.972163 | 0.107903 | 27.5447 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.704053 | 0.130436 | 13.0643 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

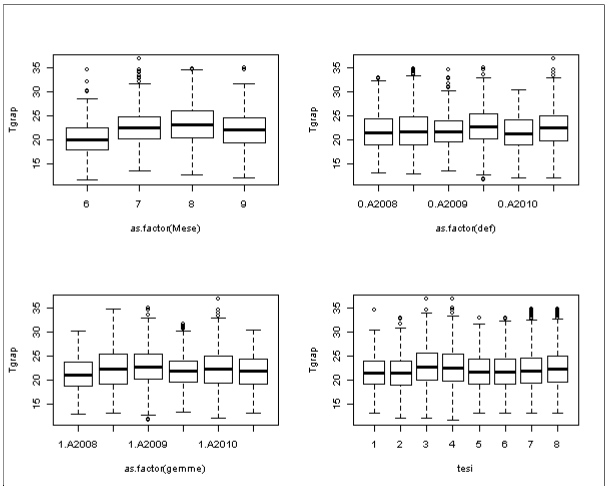
**(Dispersion parameter for gaussian family taken to be 12.23269 )**

- **Null deviance: 101207.2125 on 7377 degrees of freedom.**
- **Residual deviance: 90142.6624 on 7369 degrees of freedom.**

**AIC: 39424**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.776796594241002**




## Temperatura Grappolo Pieno giorno

-

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -18.38 | -2.15 | 0.13 | 2.38 | 13.55 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 28.377217 | 0.072237 | 392.8373 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.567788 | 0.049111 | 11.5612 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | 0.077555 | 0.049111 | 1.5792 | 0.1143104 | |
| as.factor(dirad)[T.1] | 0.190957 | 0.049111 | 3.8882 | 0.0001013 | *** |
| AnnoF[T.A2009] | -0.521578 | 0.060266 | -8.6546 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -1.310622 | 0.060266 | -21.7472 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 4.109339 | 0.063801 | 64.4084 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 5.994868 | 0.065611 | 91.3703 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 3.009559 | 0.083541 | 36.0248 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

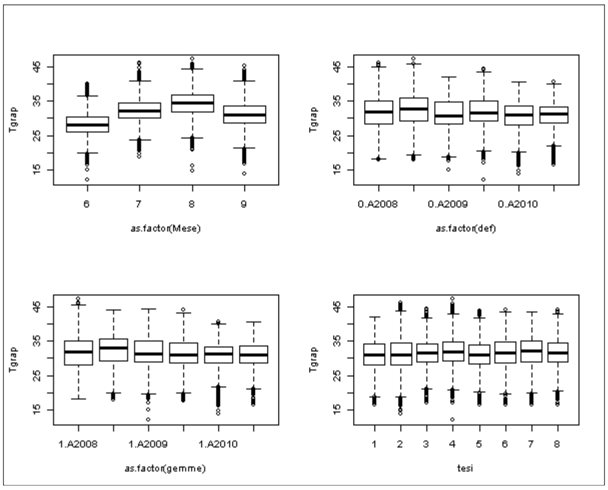
**(Dispersion parameter for gaussian family taken to be 12.8151 )**

- **Null deviance: 393424.7035 on 21252 degrees of freedom.**
- **Residual deviance: 272243.9702 on 21244 degrees of freedom.**

**AIC: 114533**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.996660120353337**




## Temperatura Cross Grappolo Pieno giorno

- 

**Call: glm(formula = Tgrap ~ as.factor(gemme) * as.factor(def) + as.factor(def) * Rad + as.factor(gemme) * Rad + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -18.40 | -2.19 | 0.13 | 2.40 | 13.65 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 26.8982171 | 0.6996193 | 38.4469 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -1.6365283 | 0.8081883 | -2.0249 | 0.04289 | * |
| as.factor(def)[T.1] | -1.5203195 | 0.8170577 | -1.8607 | 0.06280 | . |
| Rad | 0.0033288 | 0.0016282 | 2.0444 | 0.04092 | * |
| AnnoF[T.A2009] | -0.3779735 | 0.0621174 | -6.0848 | 1.187e-09 | *** |
| AnnoF[T.A2010] | -1.1672683 | 0.0621427 | -18.7837 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 4.1832350 | 0.0667438 | 62.6760 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 6.0937758 | 0.0690238 | 88.2852 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 3.1436623 | 0.0859428 | 36.5785 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3]:as.factor(def)[T.1] | -0.1764448 | 0.1014137 | -1.7399 | 0.08190 | . |
| as.factor(def)[T.1]:Rad | 0.0047866 | 0.0019074 | 2.5096 | 0.01210 | * |
| as.factor(gemme)[T.3]:Rad | 0.0041071 | 0.0019107 | 2.1496 | 0.03160 | * |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 12.79047 )**

- **Null deviance: 379681.4159 on 20636 degrees of freedom.**
- **Residual deviance: 263803.5286 on 20625 degrees of freedom.**

**AIC: 111177**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.99635740035453**

## Temperatura Grappolo Sera

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Evening"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -13.6 | -2.2 | -0.1 | 2.1 | 14.5 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 27.469500 | 0.119157 | 230.5318 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.232230 | 0.080252 | 2.8938 | 0.003818 | ** |
| as.factor(gemme)[T.3] | -0.402502 | 0.080252 | -5.0155 | 5.413e-07 | *** |
| as.factor(dirad)[T.1] | 0.316140 | 0.080252 | 3.9393 | 8.246e-05 | *** |
| AnnoF[T.A2009] | -0.664094 | 0.098481 | -6.7434 | 1.664e-11 | *** |

| | | | | | |
|---|---|---|---|---|---|
| AnnoF[T.A2010] | -2.133926 | 0.098481 | -21.6685 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 3.620381 | 0.106596 | 33.9634 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 4.745639 | 0.108275 | 43.8296 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.704828 | 0.129705 | 20.8536 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

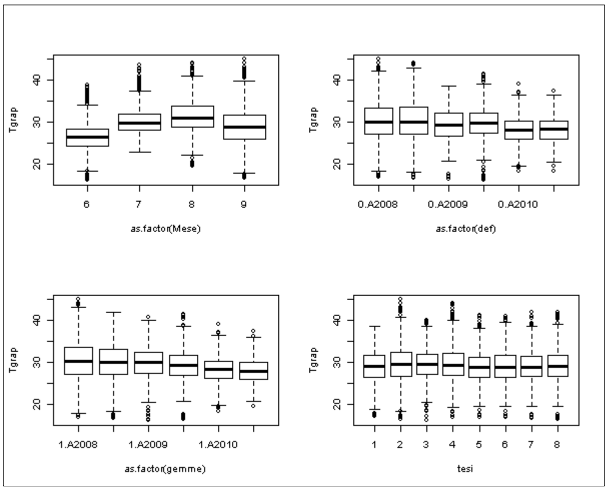
**(Dispersion parameter for gaussian family taken to be 11.93077 )**

- **Null deviance: 119936.4703 on 7409 degrees of freedom.**
- **Residual deviance: 88299.6468 on 7401 degrees of freedom.**

**AIC: 39410**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.986010992594123**




## Temperatura Grappolo Notte

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Notte"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -9.91 | -2.04 | -0.16 | 1.95 | 16.37 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 19.797263 | 0.057382 | 345.0062 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.088954 | 0.037809 | 2.3527 | 0.01865 | * |
| as.factor(gemme)[T.3] | -0.315386 | 0.037809 | -8.3415 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -0.277114 | 0.037809 | -7.3293 | 2.386e-13 | *** |
| AnnoF[T.A2009] | 0.469846 | 0.046389 | 10.1285 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.561323 | 0.046400 | -12.0975 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 2.898640 | 0.052436 | 55.2793 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.324763 | 0.051322 | 64.7823 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.169600 | 0.060008 | 36.1550 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

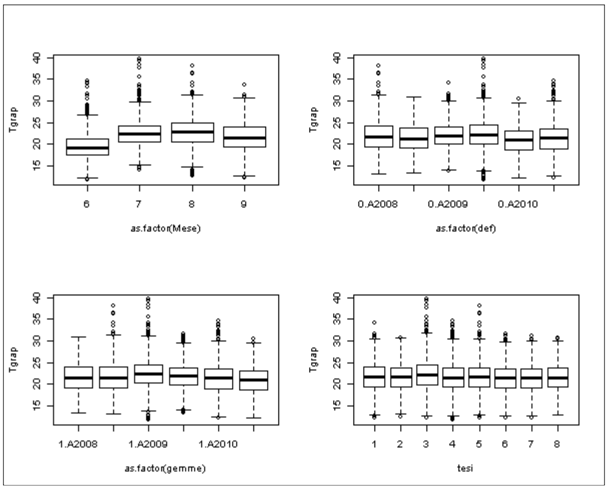
**(Dispersion parameter for gaussian family taken to be 8.785526 )**

- **Null deviance: 263202.0908 on 24582 degrees of freedom.**
- **Residual deviance: 215895.5089 on 24574 degrees of freedom.**

**AIC: 123196**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.854050217094768**




## Radiazione Grappolo Mattina

- 

**Call: glm(formula = Rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Morning"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -395 | -24 | 8 | 33 | 109 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 391.1087 | 1.7341 | 225.5365 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 12.3884 | 1.1813 | 10.4874 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -5.7125 | 1.1813 | -4.8359 | 1.353e-06 | *** |
| as.factor(dirad)[T.1] | 3.0504 | 1.1814 | 2.5820 | 0.009844 | ** |
| AnnoF[T.A2009] | -9.7347 | 1.4623 | -6.6570 | 3.000e-11 | *** |
| AnnoF[T.A2010] | -11.0909 | 1.4612 | -7.5901 | 3.600e-14 | *** |
| as.factor(Mese)[T.7] | -16.8331 | 1.6087 | -10.4639 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -5.0539 | 1.5635 | -3.2324 | 0.001233 | ** |
| as.factor(Mese)[T.9] | -29.2098 | 1.8761 | -15.5690 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

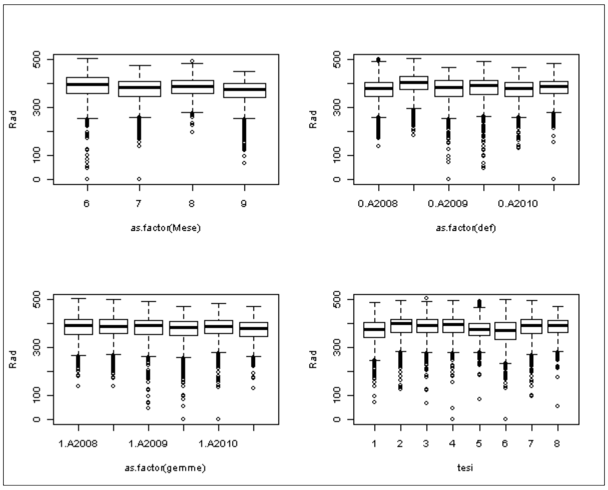
**(Dispersion parameter for gaussian family taken to be 2491.609 )**

- **Null deviance: 19104412.8532 on 7175 degrees of freedom.**
- **Residual deviance: 17857362.3256 on 7167 degrees of freedom.**

**AIC: 76497**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Radiazione Grappolo Pieno giorno

- 

**Call: glm(formula = Rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset**

= ((jd > 153) & (jd < 260) & Code == "Full_day"))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -168.5 | -16.0 | -3.4 | 12.9 | 84.3 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 436.71026 | 0.50997 | 856.3410 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 9.62021 | 0.35079 | 27.4246 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -1.22795 | 0.35079 | -3.5006 | 0.0004653 | *** |
| as.factor(dirad)[T.1] | 1.54254 | 0.35084 | 4.3967 | 1.104e-05 | *** |
| AnnoF[T.A2009] | -5.01505 | 0.43443 | -11.5441 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -5.08906 | 0.43443 | -11.7144 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -14.75822 | 0.45720 | -32.2795 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -18.39609 | 0.46747 | -39.3523 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -17.80518 | 0.59038 | -30.1589 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

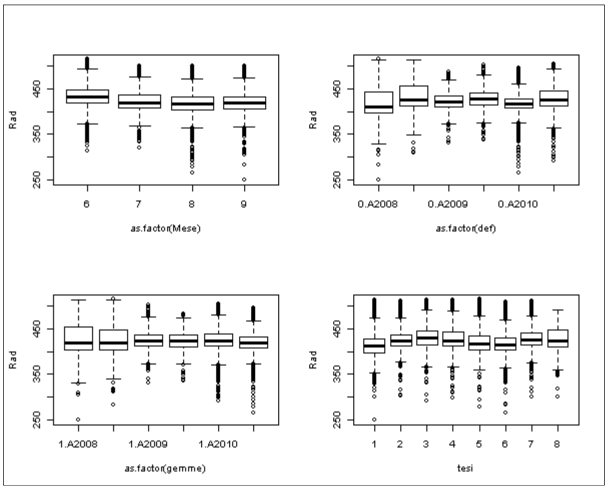
**(Dispersion parameter for gaussian family taken to be 631.512 )**

- **Null deviance: 14785677.7202 on 20636 degrees of freedom.**
- **Residual deviance: 13026829.2848 on 20628 degrees of freedom.**

**AIC: 191646**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Radiazione Cross Grappolo Pieno giorno

•

**Call: glm(formula = Rad ~ as.factor(gemme) * as.factor(def) + as.factor(def) * Tgrap + as.factor(gemme) * Tgrap + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -168.7 | -16.1 | -3.2 | 13.0 | 84.9 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 436.867759 | 2.215594 | 197.1786 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -7.744856 | 2.602818 | -2.9756 | 0.002928 | ** |
| as.factor(def)[T.1] | -5.635727 | 2.625485 | -2.1465 | 0.031841 | * |
| Tgrap | 0.049710 | 0.071942 | 0.6910 | 0.489586 | |
| AnnoF[T.A2009] | -4.740604 | 0.434617 | -10.9075 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -4.478745 | 0.437874 | -10.2284 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -16.291285 | 0.497913 | -32.7192 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -20.642706 | 0.549995 | -37.5325 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -18.919534 | 0.607517 | -31.1424 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3]:as.factor(def)[T.1] | -0.233920 | 0.701694 | -0.3334 | 0.738862 | |
| as.factor(def)[T.1]:Tgrap | 0.480208 | 0.081843 | 5.8674 | 4.494e-09 | *** |
| as.factor(gemme)[T.3]:Tgrap | 0.209181 | 0.081821 | 2.5566 | 0.010578 | * |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for gaussian family taken to be 629.2172 )

- Null deviance: 14785677.7202 on 20636 degrees of freedom.
- Residual deviance: 12977604.8949 on 20625 degrees of freedom.

AIC: 191574

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 1

## Radiazione Grappolo Sera

-

Call: glm(formula = Rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Evening"))

Deviance Residuals:

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -257.1 | -29.1 | 7.6 | 37.1 | 112.4 |

Coefficients:

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 400.9112 | 1.8220 | 220.0441 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 10.9953 | 1.2406 | 8.8627 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | 3.3058 | 1.2406 | 2.6646 | 0.007724 | ** |
| as.factor(dirad)[T.1] | 3.4495 | 1.2408 | 2.7801 | 0.005449 | ** |
| AnnoF[T.A2009] | -14.1294 | 1.5360 | -9.1986 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -2.7665 | 1.5360 | -1.8011 | 0.071736 | . |
| as.factor(Mese)[T.7] | -24.8194 | 1.6541 | -15.0051 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -51.8322 | 1.6711 | -31.0168 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -31.5933 | 1.9868 | -15.9017 | < 2.2e-16 | *** |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

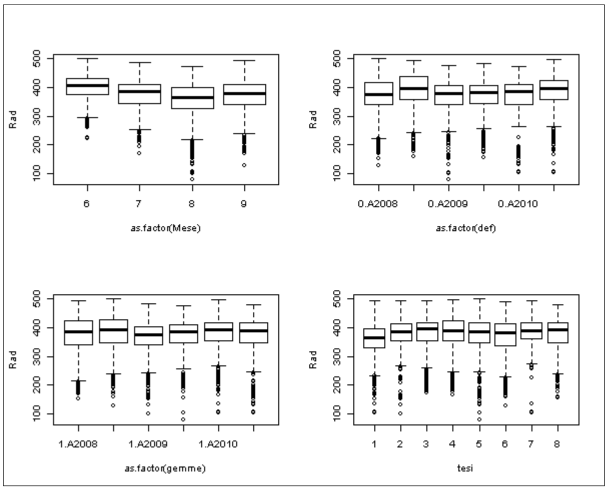
(Dispersion parameter for gaussian family taken to be 2756.577 )

- Null deviance: 22958851.6565 on 7199 degrees of freedom.
- Residual deviance: 19822545.0936 on 7191 degrees of freedom.

AIC: 77480

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 1




## Temperatura Aria Canopy Mattina

-

Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Morning"))

Deviance Residuals:

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -13.57 | -3.03 | -0.19 | 2.92 | 22.94 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 21.493853 | 0.144350 | 148.9006 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.131192 | 0.097315 | 1.3481 | 0.17766 | |
| as.factor(gemme)[T.3] | -0.128000 | 0.097315 | -1.3153 | 0.18844 | |
| as.factor(dirad)[T.1] | -0.136153 | 0.097315 | -1.3991 | 0.16183 | |
| AnnoF[T.A2009] | 0.301557 | 0.119452 | 2.5245 | 0.01161 | * |
| AnnoF[T.A2010] | -0.653319 | 0.119355 | -5.4738 | 4.551e-08 | *** |
| as.factor(Mese)[T.7] | 2.821590 | 0.131934 | 21.3863 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.801887 | 0.128941 | 29.4855 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.405965 | 0.155866 | 9.0203 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

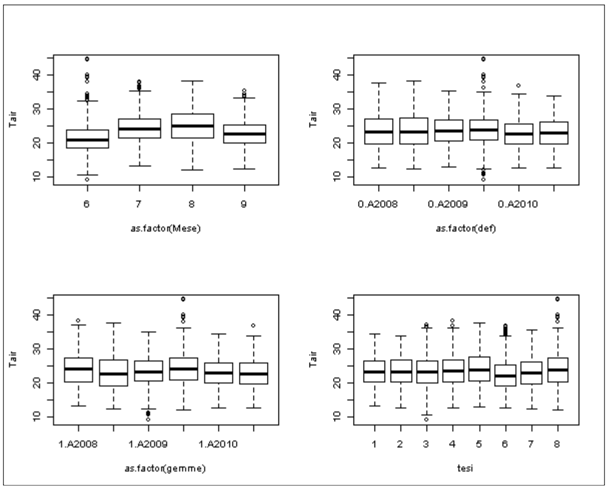
**(Dispersion parameter for gaussian family taken to be 17.46759 )**

- **Null deviance: 146814.4331 on 7377 degrees of freedom.**
- **Residual deviance: 128718.6742 on 7369 degrees of freedom.**

**AIC: 42052**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.913936040349835**




## Temperatura Aria Canopy Pieno giorno

-

**Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -15.06 | -2.01 | 0.25 | 2.26 | 11.02 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 30.0881289 | 0.0669976 | 449.0928 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.4730956 | 0.0455495 | 10.3864 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -0.0059771 | 0.0455495 | -0.1312 | 0.8956 | |
| as.factor(dirad)[T.1] | -0.2600321 | 0.0455496 | -5.7088 | 1.153e-08 | *** |
| AnnoF[T.A2009] | -0.5005442 | 0.0558953 | -8.9550 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.7120571 | 0.0558953 | -12.7391 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 4.1598420 | 0.0591740 | 70.2984 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 4.5082684 | 0.0608522 | 74.0855 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.6004850 | 0.0774825 | 20.6561 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

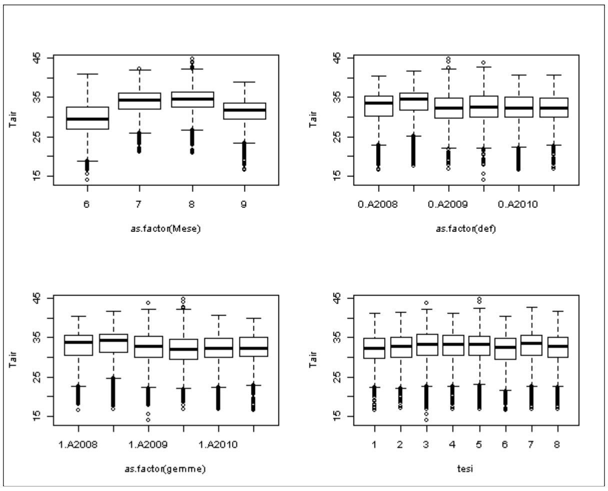
**(Dispersion parameter for gaussian family taken to be 11.02366 )**

- **Null deviance: 318077.6919 on 21252 degrees of freedom.**
- **Residual deviance: 234186.653 on 21244 degrees of freedom.**

**AIC: 111333**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.980692707510384**




## Temperatura Aria Crossing Canopy Pieno giorno

- 

**Call: glm(formula = Tair ~ as.factor(gemme) * as.factor(def) + as.factor(dirad) + as.factor(def) * Rad + as.factor(gemme) * Rad + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -15.22 | -1.95 | 0.25 | 2.24 | 10.40 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 31.6205819 | 0.6475219 | 48.8332 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | 3.0535945 | 0.7485964 | 4.0791 | 4.538e-05 | *** |
| as.factor(def)[T.1] | 2.2189962 | 0.7564686 | 2.9334 | 0.0033568 | ** |
| as.factor(dirad)[T.1] | -0.3037098 | 0.0463737 | -6.5492 | 5.921e-11 | *** |
| Rad | -0.0035349 | 0.0015106 | -2.3401 | 0.0192888 | * |
| AnnoF[T.A2009] | -0.4898840 | 0.0574580 | -8.5260 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.7071108 | 0.0574805 | -12.3017 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 4.0144915 | 0.0616828 | 65.0828 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 4.3019917 | 0.0638041 | 67.4250 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.4588154 | 0.0794480 | 18.3619 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3]:as.factor(def)[T.1] | -0.4123210 | 0.0937523 | -4.3980 | 1.098e-05 | *** |
| as.factor(def)[T.1]:Rad | -0.0035152 | 0.0017660 | -1.9905 | 0.0465524 | * |
| as.factor(gemme)[T.3]:Rad | -0.0068183 | 0.0017698 | -3.8526 | 0.0001172 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 10.92348 )**

- **Null deviance: 305905.0342 on 20636 degrees of freedom.**
- **Residual deviance: 225285.7966 on 20624 degrees of freedom.**

**AIC: 107922**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.97989036885585**

## Temperatura Aria Canopy Sera

- 

**Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Evening"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -13.634 | -2.208 | -0.054 | 2.207 | 21.907 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) |
|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| (Intercept) | 27.520728 | 0.114805 | 239.7176 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.278942 | 0.077321 | 3.6076 | 0.0003111 | *** |
| as.factor(gemme)[T.3] | -0.104992 | 0.077321 | -1.3579 | 0.1745445 | |
| as.factor(dirad)[T.1] | -0.378874 | 0.077321 | -4.9000 | 9.786e-07 | *** |
| AnnoF[T.A2009] | 0.640852 | 0.094883 | 6.7541 | 1.546e-11 | *** |
| AnnoF[T.A2010] | -0.159426 | 0.094883 | -1.6802 | 0.0929557 | . |
| as.factor(Mese)[T.7] | 3.157524 | 0.102703 | 30.7443 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.704740 | 0.104320 | 25.9274 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.922075 | 0.124968 | 7.3785 | 1.775e-13 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

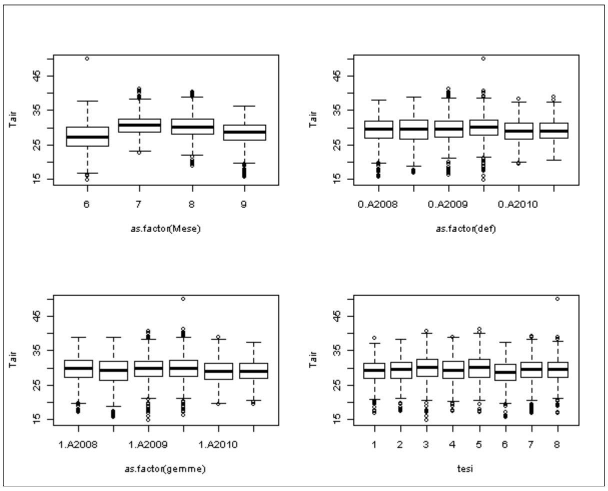
**(Dispersion parameter for gaussian family taken to be 11.07513 )**

- **Null deviance: 96333.786 on 7409 degrees of freedom.**
- **Residual deviance: 81967.0299 on 7401 degrees of freedom.**

**AIC: 38859**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.856130252553648**




## Temperatura Aria Canopy Notte

- 

**Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new, subset = ((jd > 153) & (jd < 260) & Code == "Notte"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -11.50 | -2.10 | -0.15 | 1.96 | 29.46 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 19.775703 | 0.060165 | 328.6930 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.022881 | 0.039642 | -0.5772 | 0.563825 | |
| as.factor(gemme)[T.3] | -0.048466 | 0.039642 | -1.2226 | 0.221497 | |
| as.factor(dirad)[T.1] | -0.332463 | 0.039643 | -8.3865 | < 2.2e-16 | *** |
| AnnoF[T.A2009] | 0.846661 | 0.048638 | 17.4075 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.133619 | 0.048650 | -2.7466 | 0.006027 | ** |
| as.factor(Mese)[T.7] | 2.665704 | 0.054979 | 48.4861 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.610793 | 0.053811 | 48.5182 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.654574 | 0.062918 | 26.2973 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

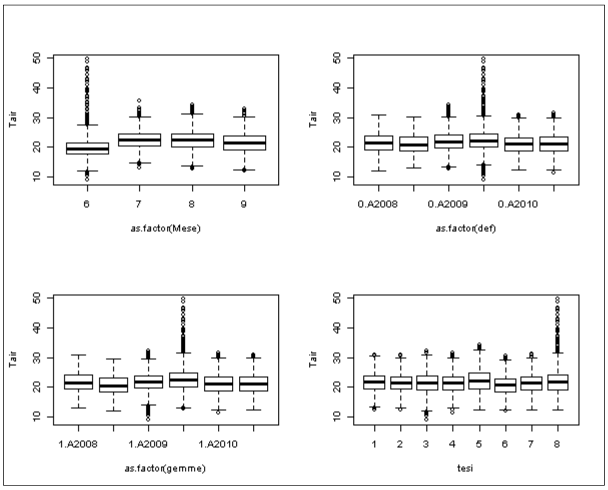
**(Dispersion parameter for gaussian family taken to be 9.658155 )**

- **Null deviance: 272080.8483 on 24582 degrees of freedom.**
- **Residual deviance: 237339.5068 on 24574 degrees of freedom.**

**AIC: 125524**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.756654929334545**




## Analisi indici giornalieri radiazione cortigliano

### radiazione media : avg_rad cortigliano

- 

**Call: glm(formula = avg_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -47.0802 | -7.1309 | -0.0061 | 7.2054 | 45.1565 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 276.53872 | 0.73225 | 377.6545 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 6.92675 | 0.49726 | 13.9298 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -0.99943 | 0.49726 | -2.0099 | 0.04455 | * |
| as.factor(dirad)[T.1] | 0.95901 | 0.49733 | 1.9283 | 0.05393 | . |
| AnnoF[T.A2009] | -5.78063 | 0.61566 | -9.3893 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -3.88595 | 0.61566 | -6.3118 | 3.263e-10 | *** |
| as.factor(Mese)[T.7] | -16.06743 | 0.66640 | -24.1107 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -37.46211 | 0.66258 | -56.5399 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -56.29396 | 0.80796 | -69.6739 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 151.0928 )**

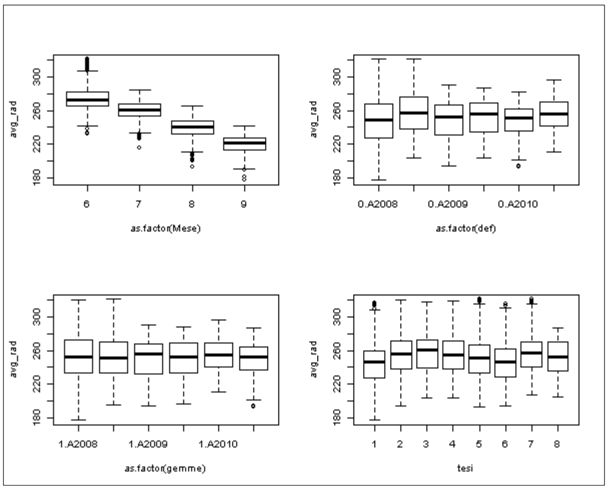
- **Null deviance: 1328137.068 on 2455 degrees of freedom.**

- **Residual deviance: 369724.0114 on 2447 degrees of freedom.**

**AIC: 19305**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## cumulata radiazione : sum_rad cortigliano

-

**Call: glm(formula = sum_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1129.92 | -171.14 | -0.15 | 172.93 | 1083.76 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 6636.929 | 17.574 | 377.6545 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 166.242 | 11.934 | 13.9298 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -23.986 | 11.934 | -2.0099 | 0.04455 | * |
| as.factor(dirad)[T.1] | 23.016 | 11.936 | 1.9283 | 0.05393 | . |
| AnnoF[T.A2009] | -138.735 | 14.776 | -9.3893 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -93.263 | 14.776 | -6.3118 | 3.263e-10 | *** |
| as.factor(Mese)[T.7] | -385.618 | 15.994 | -24.1107 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -899.091 | 15.902 | -56.5399 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -1351.055 | 19.391 | -69.6739 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

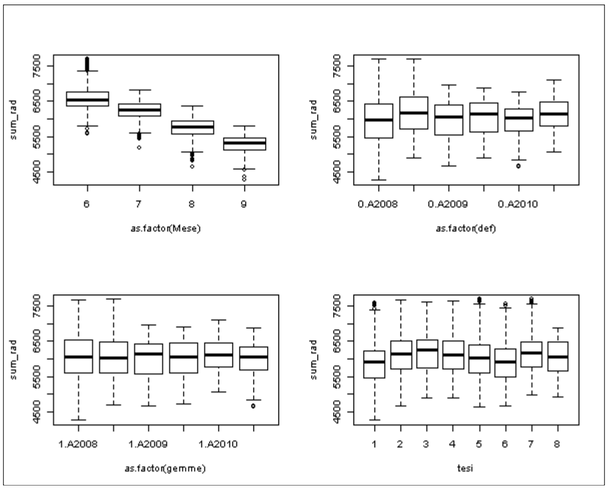
**(Dispersion parameter for gaussian family taken to be 87029.44 )**

- **Null deviance: 765006963.5982 on 2455 degrees of freedom.**
- **Residual deviance: 212961040.5077 on 2447 degrees of freedom.**

**AIC: 34915**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## escursione radiazione: et_rad cortigliano

- 

**Call: glm(formula = et_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -69.66 | -13.42 | -0.82 | 12.68 | 53.83 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 465.95946 | 1.20961 | 385.2138 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 13.50940 | 0.82143 | 16.4462 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -2.42002 | 0.82143 | -2.9461 | 0.003248 | ** |
| as.factor(dirad)[T.1] | 2.07841 | 0.82154 | 2.5299 | 0.011472 | * |
| AnnoF[T.A2009] | -19.43373 | 1.01701 | -19.1087 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -8.09608 | 1.01701 | -7.9607 | 2.594e-15 | *** |
| as.factor(Mese)[T.7] | -10.12535 | 1.10083 | -9.1979 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -11.10130 | 1.09452 | -10.1427 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -15.29566 | 1.33468 | -11.4602 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

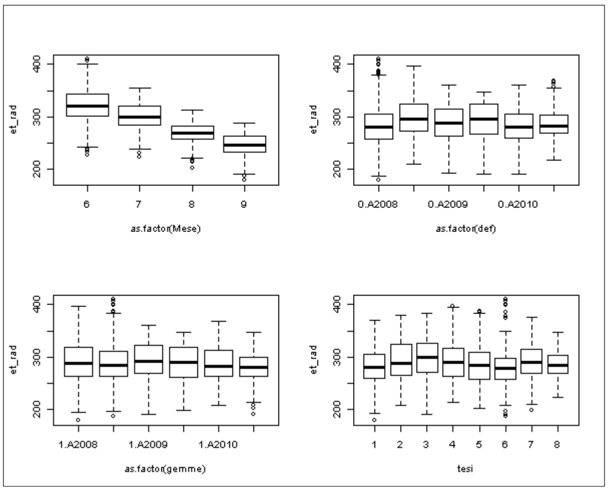
**(Dispersion parameter for gaussian family taken to be 412.3004 )**

- **Null deviance: 1336070.0148 on 2455 degrees of freedom.**
- **Residual deviance: 1008898.9997 on 2447 degrees of freedom.**

**AIC: 21770**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## media ore 3-10 radiazione: morning_03_10_index_rad cortigliano

- 

**Call: glm(formula = morning_03_10_index_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -93.31 | -14.81 | -0.44 | 15.20 | 88.39 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 325.98473 | 1.33816 | 243.6066 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 8.93190 | 0.90872 | 9.8291 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -4.28385 | 0.90872 | -4.7141 | 2.564e-06 | *** |
| as.factor(dirad)[T.1] | -0.20058 | 0.90884 | -0.2207 | 0.8253474 | |
| AnnoF[T.A2009] | -3.73454 | 1.12509 | -3.3193 | 0.0009156 | *** |
| AnnoF[T.A2010] | -9.19839 | 1.12509 | -8.1757 | 4.668e-16 | *** |
| as.factor(Mese)[T.7] | -22.55175 | 1.21782 | -18.5181 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -55.20841 | 1.21083 | -45.5954 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -77.33362 | 1.47652 | -52.3757 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

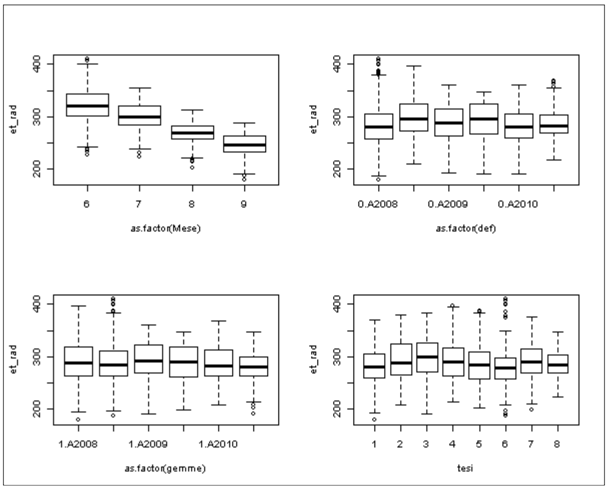
**(Dispersion parameter for gaussian family taken to be 504.5888 )**

- **Null deviance: 3162031.9233 on 2455 degrees of freedom.**
- **Residual deviance: 1234728.7013 on 2447 degrees of freedom.**

**AIC: 22266**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## media ore 11-18 radiazione: diurnal_11_18_index_rad cortigliano

- 

**Call: glm(formula = diurnal_11_18_index_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -69.05 | -10.40 | -0.77 | 10.28 | 69.48 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 431.67992 | 1.05832 | 407.8928 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 11.41458 | 0.71869 | 15.8826 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | 0.65294 | 0.71869 | 0.9085 | 0.3637 | |
| as.factor(dirad)[T.1] | 2.99451 | 0.71878 | 4.1661 | 3.206e-05 | *** |
| AnnoF[T.A2009] | -9.60881 | 0.88981 | -10.7988 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -4.04714 | 0.88981 | -4.5483 | 5.671e-06 | *** |
| as.factor(Mese)[T.7] | -14.90913 | 0.96314 | -15.4797 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -22.45284 | 0.95762 | -23.4466 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -31.79182 | 1.16774 | -27.2251 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

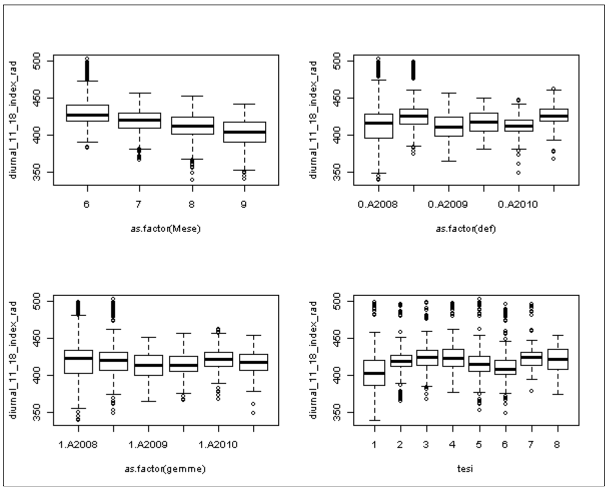
**(Dispersion parameter for gaussian family taken to be 315.6115 )**

- **Null deviance: 1165540.435 on 2455 degrees of freedom.**
- **Residual deviance: 772301.3354 on 2447 degrees of freedom.**

**AIC: 21114**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## media ore 19-02 radiazione: night_19_02_index_rad cortigliano

-

**Call: glm(formula = night_19_02_index_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -45.50 | -11.11 | -0.83 | 10.62 | 40.13 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 71.951496 | 0.877534 | 81.9928 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.433784 | 0.595919 | 0.7279 | 0.46673 | |
| as.factor(gemme)[T.3] | 0.632607 | 0.595919 | 1.0616 | 0.28854 | |
| as.factor(dirad)[T.1] | 0.083103 | 0.595997 | 0.1394 | 0.88912 | |
| AnnoF[T.A2009] | -3.998525 | 0.737809 | -5.4195 | 6.563e-08 | *** |
| AnnoF[T.A2010] | 1.587679 | 0.737809 | 2.1519 | 0.03150 | * |
| as.factor(Mese)[T.7] | -10.741434 | 0.798617 | -13.4500 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -34.725087 | 0.794035 | -43.7324 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -59.756431 | 0.968265 | -61.7150 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

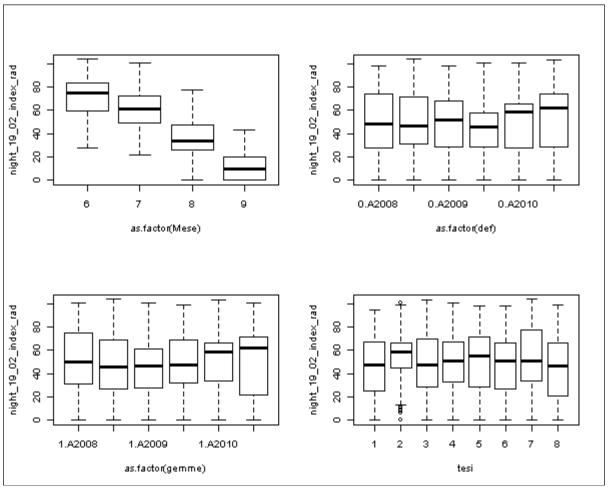
**(Dispersion parameter for gaussian family taken to be 216.9948 )**

- **Null deviance: 1579507.3709 on 2455 degrees of freedom.**
- **Residual deviance: 530986.3946 on 2447 degrees of freedom.**

**AIC: 20194**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## errore standard mattutino tra le ore 5-10 radiazione: dmorn_stderr_5_10_rad cortigliano

- 

**Call: glm(formula = dmorn_stderr_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -31.4 | -6.5 | -1.1 | 6.8 | 53.6 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 16.09430 | 0.64252 | 25.0486 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.98544 | 0.43633 | -2.2585 | 0.0240 | * |
| as.factor(gemme)[T.3] | -0.56155 | 0.43633 | -1.2870 | 0.1982 | |
| as.factor(dirad)[T.1] | 0.96252 | 0.43638 | 2.2057 | 0.0275 | * |
| AnnoF[T.A2009] | 2.17115 | 0.54022 | 4.0190 | 6.020e-05 | *** |
| AnnoF[T.A2010] | 2.29558 | 0.54022 | 4.2494 | 2.224e-05 | *** |
| as.factor(Mese)[T.7] | 3.44062 | 0.58474 | 5.8840 | 4.552e-09 | *** |
| as.factor(Mese)[T.8] | 22.96334 | 0.58138 | 39.4977 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 39.96945 | 0.70895 | 56.3780 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

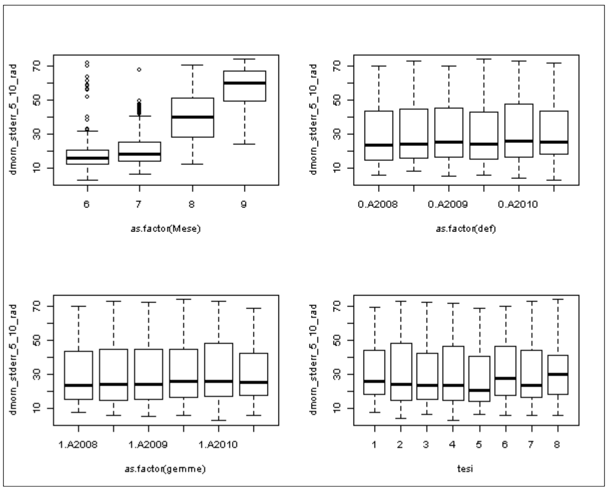
**(Dispersion parameter for gaussian family taken to be 116.3315 )**

- **Null deviance: 794376.5915 on 2455 degrees of freedom.**
- **Residual deviance: 284663.2722 on 2447 degrees of freedom.**

**AIC: 18663**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## varianza mattutina tra le ore 5-10 radiazione: dmorn_var_5_10_rad cortigliano

- 

**Call: glm(formula = dmorn_var_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -16285 | -2069 | -698 | 1942 | 28563 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1836.52 | 311.72 | 5.8916 | 4.35e-09 | *** |
| as.factor(def)[T.1] | -545.12 | 211.68 | -2.5752 | 0.0100764 | * |
| as.factor(gemme)[T.3] | -407.41 | 211.68 | -1.9246 | 0.0543926 | . |
| as.factor(dirad)[T.1] | 402.97 | 211.71 | 1.9034 | 0.0571028 | . |
| AnnoF[T.A2009] | 925.91 | 262.08 | 3.5329 | 0.0004186 | *** |
| AnnoF[T.A2010] | 847.00 | 262.08 | 3.2318 | 0.0012465 | ** |
| as.factor(Mese)[T.7] | 833.33 | 283.68 | 2.9376 | 0.0033390 | ** |
| as.factor(Mese)[T.8] | 8779.00 | 282.06 | 31.1251 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 18330.51 | 343.94 | 53.2949 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

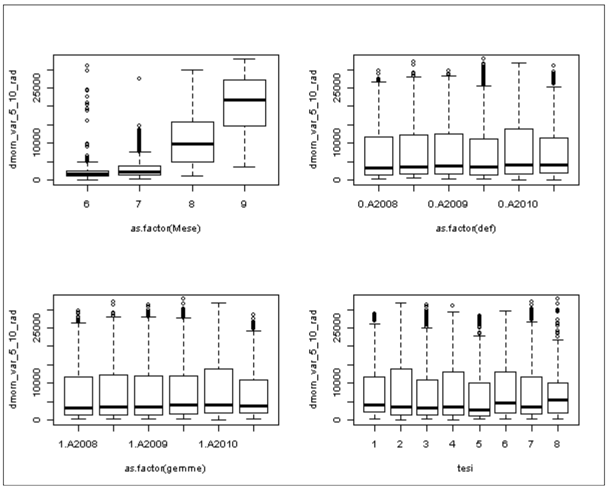
**(Dispersion parameter for gaussian family taken to be 27380335 )**

- **Null deviance: 169583420913.985 on 2455 degrees of freedom.**
- **Residual deviance: 66999679064.906 on 2447 degrees of freedom.**

**AIC: 49041**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## errore standard serale tra le ore 15-20 radiazione: dtwi_stderr_15_20_rad cortigliano

- 

**Call: glm(formula = dtwi_stderr_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -37.04 | -8.90 | 0.42 | 8.80 | 36.82 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 38.05593 | 0.70332 | 54.1090 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 3.05277 | 0.47761 | 6.3917 | 1.957e-10 | *** |
| as.factor(gemme)[T.3] | -0.36846 | 0.47761 | -0.7715 | 0.4405 | |
| as.factor(dirad)[T.1] | 0.68191 | 0.47768 | 1.4276 | 0.1535 | |
| AnnoF[T.A2009] | -0.40869 | 0.59133 | -0.6911 | 0.4895 | |
| AnnoF[T.A2010] | -3.23421 | 0.59133 | -5.4694 | 4.975e-08 | *** |
| as.factor(Mese)[T.7] | 6.37468 | 0.64007 | 9.9594 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 25.12184 | 0.63640 | 39.4751 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 37.41707 | 0.77604 | 48.2155 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

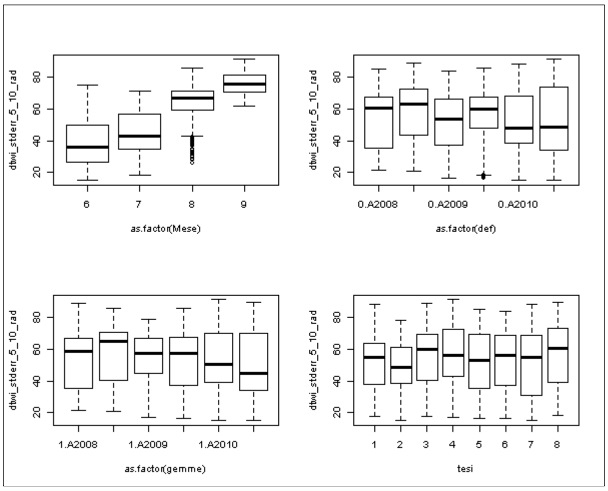
**(Dispersion parameter for gaussian family taken to be 139.3883 )**

- **Null deviance: 811036.8017 on 2455 degrees of freedom.**
- **Residual deviance: 341083.2743 on 2447 degrees of freedom.**

**AIC: 19107**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**



## varianza serale tra le ore 15-20 radiazione: dtwi_var_15_20_rad cortigliano

- 

**Call: glm(formula = dtwi_var_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -21308 | -5495 | -228 | 5324 | 23981 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 9436.28 | 416.04 | 22.6813 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 2273.28 | 282.52 | 8.0463 | 1.317e-15 | *** |
| as.factor(gemme)[T.3] | 188.78 | 282.52 | 0.6682 | 0.5041 | |
| as.factor(dirad)[T.1] | 318.50 | 282.56 | 1.1272 | 0.2598 | |
| AnnoF[T.A2009] | -542.53 | 349.79 | -1.5510 | 0.1210 | |
| AnnoF[T.A2010] | -1861.73 | 349.79 | -5.3224 | 1.117e-07 | *** |
| as.factor(Mese)[T.7] | 3162.77 | 378.62 | 8.3533 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 15031.40 | 376.45 | 39.9292 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 24854.37 | 459.05 | 54.1427 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

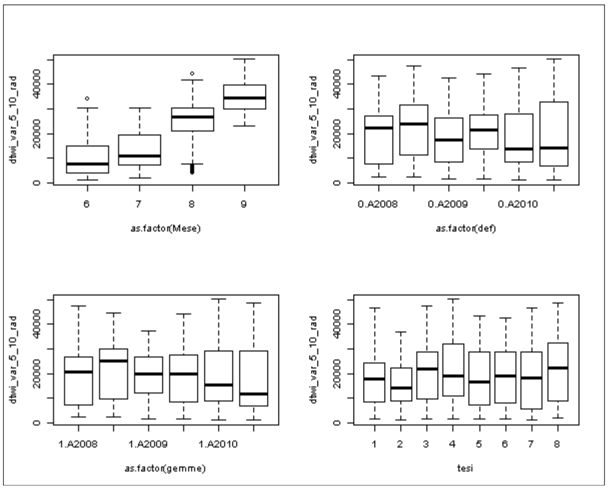
**(Dispersion parameter for gaussian family taken to be 48773820 )**

- **Null deviance: 319814726149.115 on 2455 degrees of freedom.**
- **Residual deviance: 119349536732.279 on 2447 degrees of freedom.**

**AIC: 50459**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Analisi indici giornalieri temperatura grappolo cortigliano

### temperatura media: avg_tgrap cortigliano

- 

**Call: glm(formula = avg_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -6.964 | -1.154 | 0.052 | 1.256 | 6.283 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 24.0687220 | 0.1158534 | 207.7515 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.3559555 | 0.0778570 | 4.5719 | 5.067e-06 | *** |
| as.factor(gemme)[T.3] | -0.1600430 | 0.0778570 | -2.0556 | 0.03992 | * |
| as.factor(dirad)[T.1] | -0.0021214 | 0.0778570 | -0.0272 | 0.97826 | |
| AnnoF[T.A2009] | -0.0086430 | 0.0955407 | -0.0905 | 0.92793 | |
| AnnoF[T.A2010] | -0.9327639 | 0.0955407 | -9.7630 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 3.2567641 | 0.1038905 | 31.3481 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.7968266 | 0.1038905 | 36.5464 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.6277012 | 0.1275983 | 12.7564 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

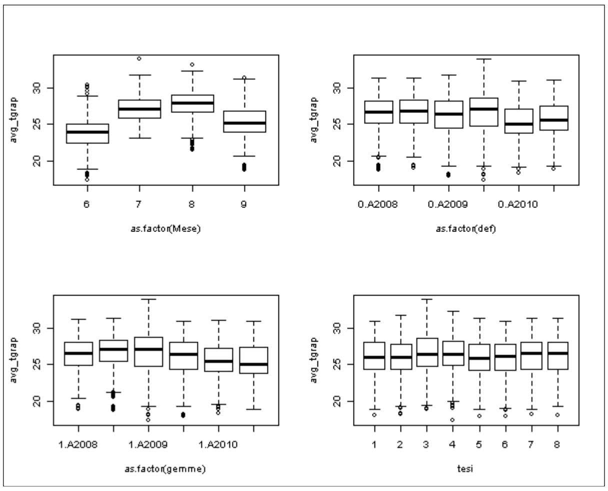
**(Dispersion parameter for gaussian family taken to be 3.827949 )**

- **Null deviance: 16339.1495 on 2525 degrees of freedom.**
- **Residual deviance: 9634.9474 on 2517 degrees of freedom.**

**AIC: 10570**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.931081126848165**




### cumulata temperatura grappolo: sum_tgrap cortigliano

•

**Call: glm(formula = sum_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -167.1 | -27.7 | 1.2 | 30.1 | 150.8 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 577.64930 | 2.78048 | 207.7515 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 8.54295 | 1.86857 | 4.5719 | 5.066e-06 | *** |
| as.factor(gemme)[T.3] | -3.84099 | 1.86857 | -2.0556 | 0.03993 | * |
| as.factor(dirad)[T.1] | -0.05095 | 1.86857 | -0.0273 | 0.97825 | |
| AnnoF[T.A2009] | -0.20741 | 2.29298 | -0.0905 | 0.92793 | |
| AnnoF[T.A2010] | -22.38627 | 2.29298 | -9.7630 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 78.16240 | 2.49337 | 31.3481 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 91.12382 | 2.49337 | 36.5464 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 39.06484 | 3.06236 | 12.7565 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

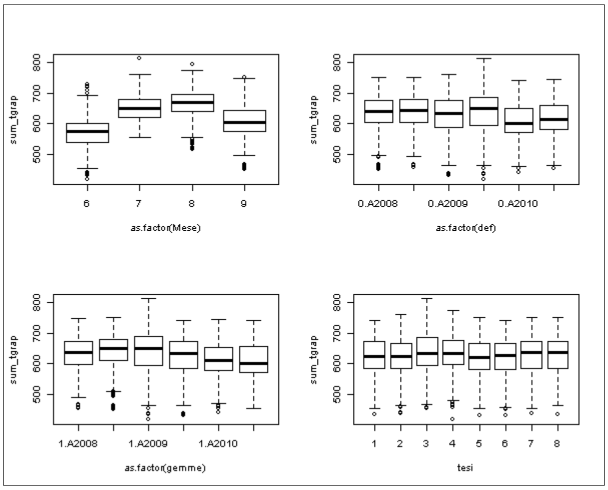
**(Dispersion parameter for gaussian family taken to be 2204.897 )**

- **Null deviance: 9411345.4881 on 2525 degrees of freedom.**
- **Residual deviance: 5549725.39 on 2517 degrees of freedom.**

**AIC: 26626**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## escursione termica grappolo: et_tgrap cortigliano

•

**Call: glm(formula = et_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -13.40 | -2.51 | -0.32 | 2.70 | 11.26 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 14.30777 | 0.21717 | 65.8841 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.24286 | 0.14594 | 1.6641 | 0.09622 | . |
| as.factor(gemme)[T.3] | -0.18870 | 0.14594 | -1.2930 | 0.19614 | |
| as.factor(dirad)[T.1] | 0.75343 | 0.14594 | 5.1625 | 2.627e-07 | *** |
| AnnoF[T.A2009] | -2.52838 | 0.17909 | -14.1179 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -2.10921 | 0.17909 | -11.7774 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 2.07230 | 0.19474 | 10.6413 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 4.16934 | 0.19474 | 21.4096 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.54463 | 0.23918 | 6.4580 | 1.269e-10 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

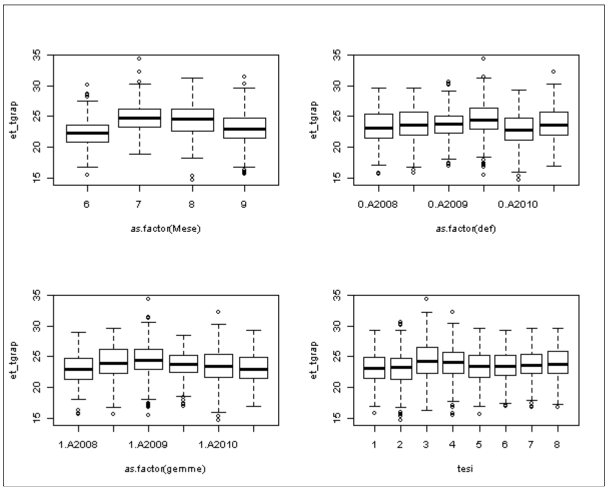
**(Dispersion parameter for gaussian family taken to be 13.45027 )**

- **Null deviance: 43741.9279 on 2525 degrees of freedom.**
- **Residual deviance: 33854.3383 on 2517 degrees of freedom.**

**AIC: 13745**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.980046052946158**




## media ore 3-10 temp. grappolo: morning_03_10_index_tgrap cortigliano

- 

**Call: glm(formula = morning_03_10_index_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -9.013 | -1.573 | -0.035 | 1.558 | 8.815 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 21.899473 | 0.136100 | 160.9073 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.684169 | 0.091463 | 7.4803 | 1.019e-13 | *** |
| as.factor(gemme)[T.3] | -0.041729 | 0.091463 | -0.4562 | 0.64826 | |
| as.factor(dirad)[T.1] | -0.077916 | 0.091463 | -0.8519 | 0.39436 | |
| AnnoF[T.A2009] | 0.485671 | 0.112237 | 4.3272 | 1.569e-05 | *** |
| AnnoF[T.A2010] | -0.232808 | 0.112237 | -2.0742 | 0.03816 | * |
| as.factor(Mese)[T.7] | 2.443075 | 0.122046 | 20.0176 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.109082 | 0.122046 | 17.2810 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.916378 | 0.149897 | 6.1134 | 1.127e-09 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

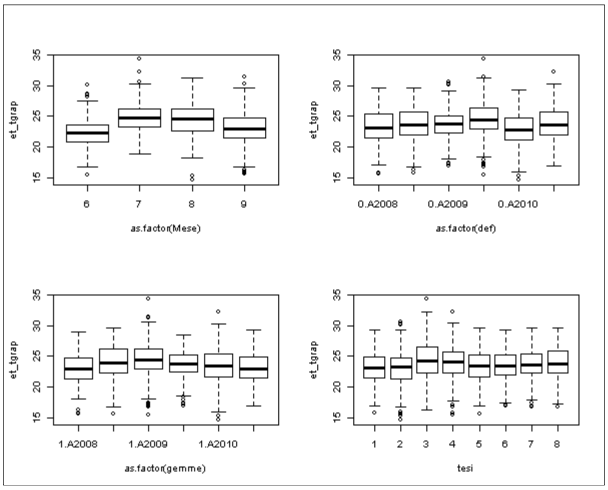
**(Dispersion parameter for gaussian family taken to be 5.282801 )**

- **Null deviance: 16402.1619 on 2525 degrees of freedom.**
- **Residual deviance: 13296.8099 on 2517 degrees of freedom.**

**AIC: 11384**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.980046052946158**




## media ore 11-18 temp. grappolo: diurnal_11_18_index_tgrap cortigliano

- 

**Call: glm(formula = diurnal_11_18_index_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -11.17 | -1.79 | 0.25 | 1.98 | 6.71 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 29.36462 | 0.17022 | 172.5105 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.35730 | 0.11439 | 3.1235 | 0.001808 | ** |
| as.factor(gemme)[T.3] | -0.15246 | 0.11439 | -1.3328 | 0.182714 | |
| as.factor(dirad)[T.1] | 0.33765 | 0.11439 | 2.9517 | 0.003190 | ** |
| AnnoF[T.A2009] | -0.94086 | 0.14037 | -6.7025 | 2.519e-11 | *** |
| AnnoF[T.A2010] | -1.89734 | 0.14037 | -13.5163 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 4.28864 | 0.15264 | 28.0960 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 5.76003 | 0.15264 | 37.7354 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.33899 | 0.18748 | 12.4762 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

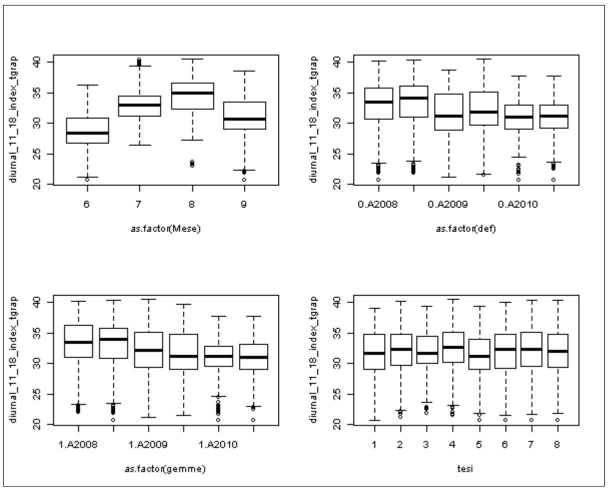
**(Dispersion parameter for gaussian family taken to be 8.263536 )**

- **Null deviance: 35535.1321 on 2525 degrees of freedom.**
- **Residual deviance: 20799.319 on 2517 degrees of freedom.**

**AIC: 12514**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.997073417535997**




## media ore 19-02 temp. grappolo: night_19_02_index_tgrap cortigliano

- 

**Call: glm(formula = night_19_02_index_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -7.328 | -1.212 | 0.039 | 1.166 | 6.399 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 20.942069 | 0.112987 | 185.3502 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.026399 | 0.075930 | 0.3477 | 0.7281184 | |
| as.factor(gemme)[T.3] | -0.285930 | 0.075930 | -3.7657 | 0.0001699 | *** |
| as.factor(dirad)[T.1] | -0.266104 | 0.075930 | -3.5046 | 0.0004653 | *** |
| AnnoF[T.A2009] | 0.429266 | 0.093176 | 4.6070 | 4.288e-06 | *** |
| AnnoF[T.A2010] | -0.668135 | 0.093176 | -7.1707 | 9.769e-13 | *** |
| as.factor(Mese)[T.7] | 3.038583 | 0.101320 | 29.9901 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.521370 | 0.101320 | 34.7551 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.627738 | 0.124441 | 13.0804 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

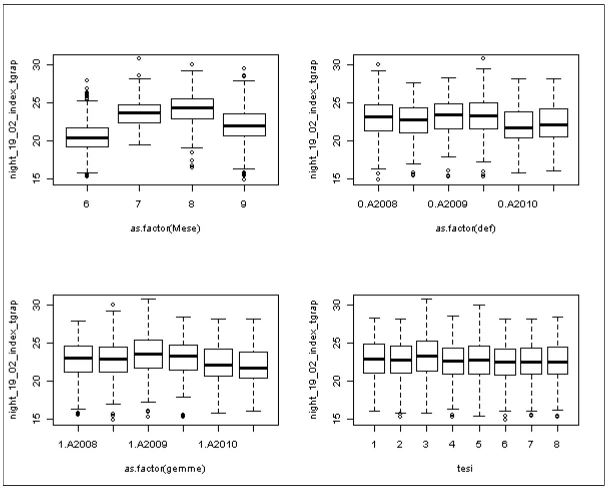
**(Dispersion parameter for gaussian family taken to be 3.640839 )**

- **Null deviance: 15003.9971 on 2525 degrees of freedom.**
- **Residual deviance: 9163.9906 on 2517 degrees of freedom.**

**AIC: 10444**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.903310892616456**




## errore standard mattutino tra le ore 5-10 temp. grappolo: dmorn_stderr_5_10_tgrap cortigliano

- 

**Call: glm(formula = dmorn_stderr_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1.9322 | -0.3965 | -0.0083 | 0.4086 | 1.7802 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.5584899 | 0.0347237 | 44.8825 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.0967527 | 0.0233354 | 4.1462 | 3.493e-05 | *** |
| as.factor(gemme)[T.3] | 0.1338559 | 0.0233354 | 5.7362 | 1.084e-08 | *** |
| as.factor(dirad)[T.1] | 0.0179924 | 0.0233354 | 0.7710 | 0.4408 | |
| AnnoF[T.A2009] | 0.0044696 | 0.0286356 | 0.1561 | 0.8760 | |
| AnnoF[T.A2010] | -0.1188234 | 0.0286356 | -4.1495 | 3.443e-05 | *** |
| as.factor(Mese)[T.7] | 0.2533081 | 0.0311382 | 8.1350 | 6.401e-16 | *** |
| as.factor(Mese)[T.8] | 0.3901844 | 0.0311382 | 12.5307 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.0200703 | 0.0382439 | 0.5248 | 0.5998 | |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

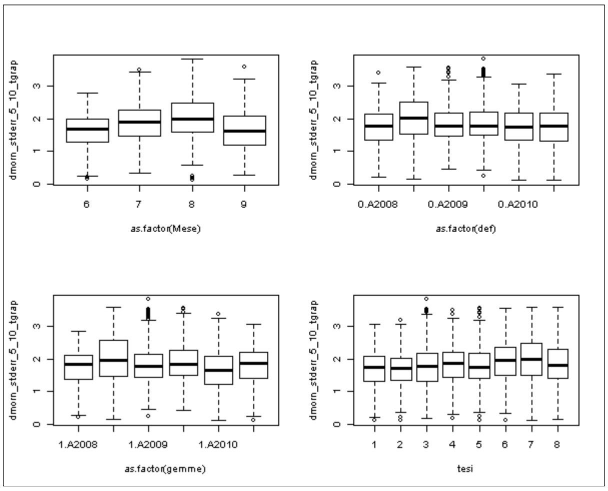
**(Dispersion parameter for gaussian family taken to be 0.3438756 )**

- **Null deviance: 959.076 on 2525 degrees of freedom.**
- **Residual deviance: 865.5349 on 2517 degrees of freedom.**

**AIC: 4483**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.115073310878342**




## varianza mattutina tra le ore 5-10 temp. grappolo: dmorn_var_5_10_tgrap cortigliano

- 

**Call: glm(formula = dmorn_var_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -28.3 | -9.8 | -2.2 | 7.8 | 59.9 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 15.650285 | 0.795004 | 19.6858 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 2.588503 | 0.534266 | 4.8450 | 1.343e-06 | *** |
| as.factor(gemme)[T.3] | 3.213257 | 0.534266 | 6.0143 | 2.069e-09 | *** |
| as.factor(dirad)[T.1] | 0.283853 | 0.534266 | 0.5313 | 0.5953 | |
| AnnoF[T.A2009] | 0.044663 | 0.655615 | 0.0681 | 0.9457 | |
| AnnoF[T.A2010] | -2.825810 | 0.655615 | -4.3102 | 1.694e-05 | *** |
| as.factor(Mese)[T.7] | 5.880968 | 0.712912 | 8.2492 | 2.538e-16 | *** |
| as.factor(Mese)[T.8] | 9.710814 | 0.712912 | 13.6213 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.184408 | 0.875599 | 1.3527 | 0.1763 | |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

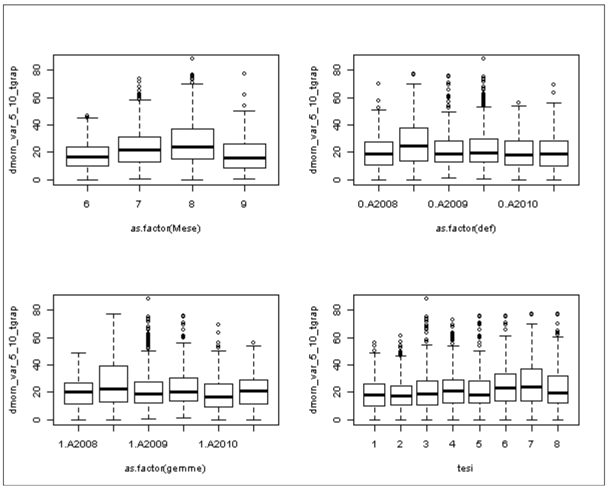
**(Dispersion parameter for gaussian family taken to be 180.2547 )**

- **Null deviance: 508319.8317 on 2525 degrees of freedom.**
- **Residual deviance: 453701.1136 on 2517 degrees of freedom.**

**AIC: 20300**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.999999999593164**




## errore standard serale tra le ore 15-20 temp. grappolo: dtwi_stderr_15_20_tgrap cortigliano

•

**Call: glm(formula = dtwi_stderr_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1.711 | -0.268 | 0.015 | 0.280 | 1.732 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.3428631 | 0.0267304 | 50.2373 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.0792523 | 0.0179636 | 4.4118 | 1.068e-05 | *** |
| as.factor(gemme)[T.3] | -0.0019986 | 0.0179636 | -0.1113 | 0.9114 | |
| as.factor(dirad)[T.1] | 0.1672089 | 0.0179636 | 9.3082 | < 2.2e-16 | *** |
| AnnoF[T.A2009] | -0.4799711 | 0.0220437 | -21.7736 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.3153575 | 0.0220437 | -14.3060 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 0.1893912 | 0.0239702 | 7.9011 | 4.095e-15 | *** |
| as.factor(Mese)[T.8] | 0.5205803 | 0.0239702 | 21.7178 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.3892207 | 0.0294403 | 13.2207 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

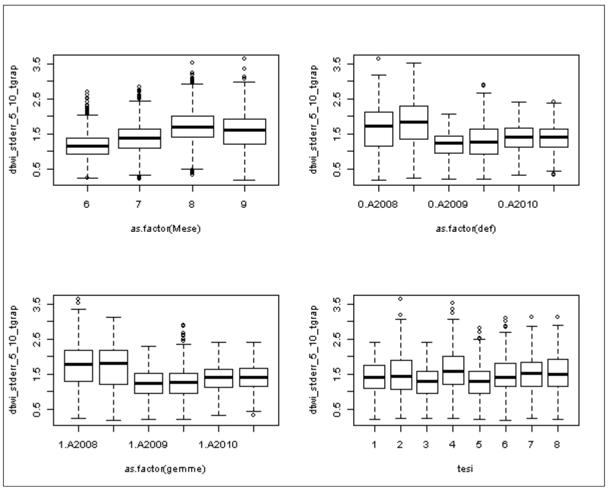
**(Dispersion parameter for gaussian family taken to be 0.2037791 )**

- **Null deviance: 742.7095 on 2525 degrees of freedom.**
- **Residual deviance: 512.912 on 2517 degrees of freedom.**

**AIC: 3161.3**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.341354202871621**




## varianza serale tra le ore 15-20 temp. grappolo: dtwi_var_15_20_tgrap cortigliano

•

**Call: glm(formula = dtwi_var_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -24.67 | -5.27 | -0.66 | 4.25 | 55.01 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 13.136739 | 0.511356 | 25.6900 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 1.544231 | 0.343647 | 4.4937 | 7.317e-06 | *** |
| as.factor(gemme)[T.3] | -0.083497 | 0.343647 | -0.2430 | 0.808 | |
| as.factor(dirad)[T.1] | 3.614587 | 0.343647 | 10.5183 | < 2.2e-16 | *** |
| AnnoF[T.A2009] | -10.017343 | 0.421699 | -23.7547 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -7.548996 | 0.421699 | -17.9014 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 3.150687 | 0.458554 | 6.8709 | 8.011e-12 | *** |
| as.factor(Mese)[T.8] | 9.665918 | 0.458554 | 21.0791 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 7.358975 | 0.563196 | 13.0665 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

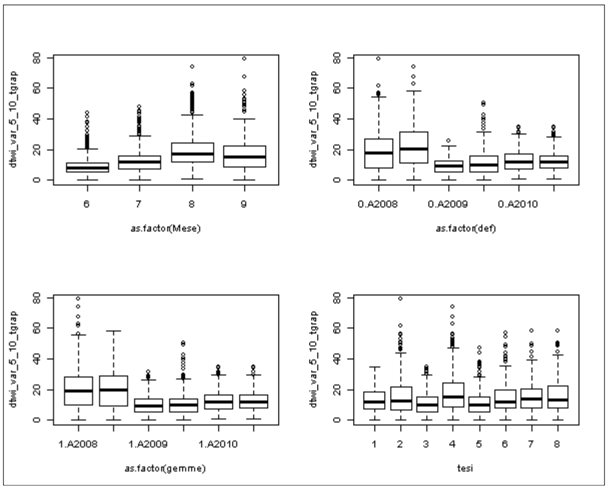
**(Dispersion parameter for gaussian family taken to be 74.57537 )**

- **Null deviance: 281675.4626 on 2525 degrees of freedom.**
- **Residual deviance: 187706.1964 on 2517 degrees of freedom.**

**AIC: 18071**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Analisi indici giornalieri taria canopy cortigliano

### temperatura canopy media: avg_tair cortigliano

-

**Call: glm(formula = avg_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -7.9363 | -1.3759 | -0.0065 | 1.4523 | 6.5402 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 24.910589 | 0.125566 | 198.3858 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.208852 | 0.084384 | 2.4750 | 0.0133886 | * |
| as.factor(gemme)[T.3] | -0.047960 | 0.084384 | -0.5684 | 0.5698432 | |
| as.factor(dirad)[T.1] | -0.286381 | 0.084384 | -3.3938 | 0.0007001 | *** |
| AnnoF[T.A2009] | 0.287660 | 0.103551 | 2.7780 | 0.0055106 | ** |
| AnnoF[T.A2010] | -0.397390 | 0.103551 | -3.8376 | 0.0001273 | *** |
| as.factor(Mese)[T.7] | 3.146463 | 0.112600 | 27.9436 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.784295 | 0.112600 | 24.7272 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.598979 | 0.138296 | 4.3311 | 1.541e-05 | *** |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

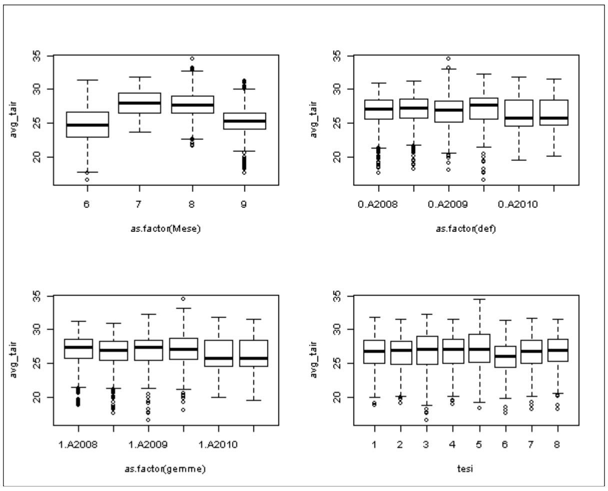
(Dispersion parameter for gaussian family taken to be 4.496713 )

- Null deviance: 16383.4877 on 2525 degrees of freedom.
- Residual deviance: 11318.2269 on 2517 degrees of freedom.

AIC: 10977

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 0.866694796943022




## cumulata temperatura canopy: sum_tair cortigliano

-

Call: glm(formula = sum_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))

Deviance Residuals:

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -190.47 | -33.02 | -0.16 | 34.85 | 156.97 |

Coefficients:

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 597.8541 | 3.0136 | 198.3858 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 5.0125 | 2.0252 | 2.4750 | 0.0133881 | * |
| as.factor(gemme)[T.3] | -1.1510 | 2.0252 | -0.5683 | 0.5698498 | |
| as.factor(dirad)[T.1] | -6.8732 | 2.0252 | -3.3938 | 0.0007000 | *** |
| AnnoF[T.A2009] | 6.9039 | 2.4852 | 2.7780 | 0.0055105 | ** |
| AnnoF[T.A2010] | -9.5374 | 2.4852 | -3.8377 | 0.0001273 | *** |
| as.factor(Mese)[T.7] | 75.5151 | 2.7024 | 27.9436 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 66.8231 | 2.7024 | 24.7272 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 14.3755 | 3.3191 | 4.3312 | 1.541e-05 | *** |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

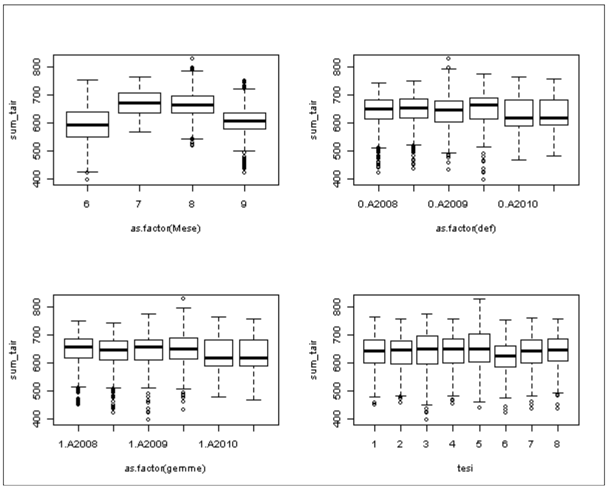
(Dispersion parameter for gaussian family taken to be 2590.107 )

- Null deviance: 9436890.6316 on 2525 degrees of freedom.
- Residual deviance: 6519299.4914 on 2517 degrees of freedom.

AIC: 27032

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 1




## escursione termica canopy: et_tair cortigliano

•

**Call: glm(formula = et_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -12.229 | -2.328 | -0.017 | 2.496 | 21.241 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 14.56015 | 0.20947 | 69.5080 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.65617 | 0.14077 | 4.6612 | 3.308e-06 | *** |
| as.factor(gemme)[T.3] | 0.19170 | 0.14077 | 1.3618 | 0.1733903 | |
| as.factor(dirad)[T.1] | 0.26223 | 0.14077 | 1.8628 | 0.0626063 | . |
| AnnoF[T.A2009] | -0.88327 | 0.17275 | -5.1131 | 3.407e-07 | *** |
| AnnoF[T.A2010] | -0.42634 | 0.17275 | -2.4680 | 0.0136537 | * |
| as.factor(Mese)[T.7] | 1.24342 | 0.18784 | 6.6194 | 4.392e-11 | *** |
| as.factor(Mese)[T.8] | 1.30384 | 0.18784 | 6.9411 | 4.932e-12 | *** |
| as.factor(Mese)[T.9] | -0.82781 | 0.23071 | -3.5881 | 0.0003394 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

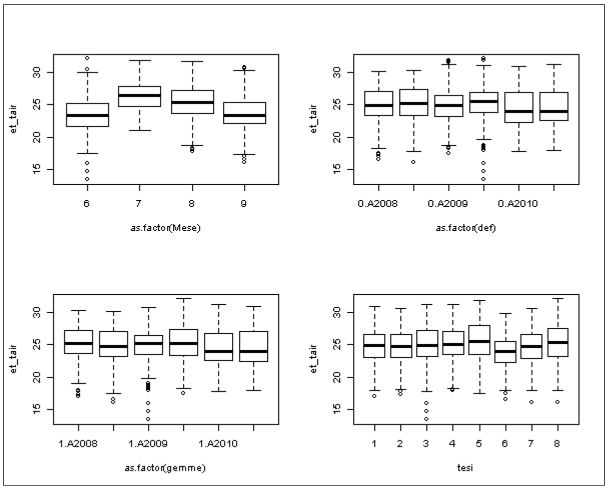
**(Dispersion parameter for gaussian family taken to be 12.51442 )**

- **Null deviance: 33826.5338 on 2525 degrees of freedom.**
- **Residual deviance: 31498.7892 on 2517 degrees of freedom.**

**AIC: 13562**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.60208481425923**




## media ore 03-10 temp. canopy: morning_03_10_index_tair cortigliano

•

**Call: glm(formula = morning_03_10_index_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -9.40 | -1.58 | -0.11 | 1.70 | 8.43 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 23.776486 | 0.138124 | 172.1387 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.180118 | 0.092823 | 1.9404 | 0.052438 | . |
| as.factor(gemme)[T.3] | -0.030528 | 0.092823 | -0.3289 | 0.742272 | |
| as.factor(dirad)[T.1] | -0.288184 | 0.092823 | -3.1047 | 0.001926 | ** |
| AnnoF[T.A2009] | 0.082040 | 0.113907 | 0.7202 | 0.471443 | |
| AnnoF[T.A2010] | -0.585952 | 0.113907 | -5.1441 | 2.894e-07 | *** |
| as.factor(Mese)[T.7] | 2.750385 | 0.123861 | 22.2053 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 1.907194 | 0.123861 | 15.3978 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.164312 | 0.152127 | 1.0801 | 0.280201 | |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

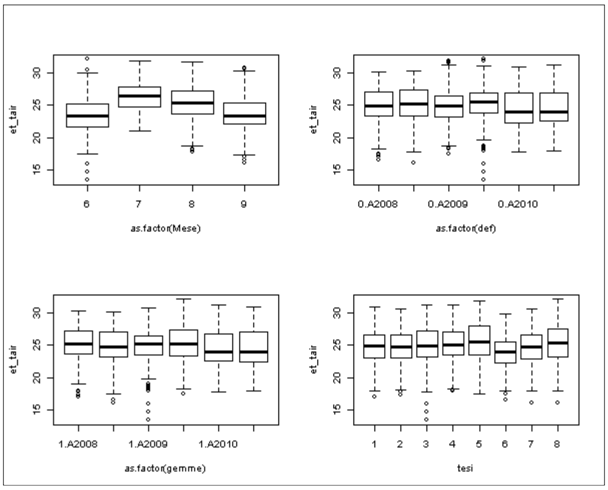
**(Dispersion parameter for gaussian family taken to be 5.441099 )**

- **Null deviance: 17427.286 on 2525 degrees of freedom.**
- **Residual deviance: 13695.2466 on 2517 degrees of freedom.**

**AIC: 11458**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.60208481425923**




## media ore 11-18 temp. canopy: diurnal_11_18_index_tair cortigliano

- 

**Call: glm(formula = diurnal_11_18_index_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -10.70 | -1.85 | 0.22 | 2.00 | 7.62 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 29.984145 | 0.174132 | 172.1922 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.450602 | 0.117022 | 3.8506 | 0.0001208 | *** |
| as.factor(gemme)[T.3] | -0.065047 | 0.117022 | -0.5558 | 0.5783628 | |
| as.factor(dirad)[T.1] | -0.194329 | 0.117022 | -1.6606 | 0.0969145 | . |
| AnnoF[T.A2009] | -0.032607 | 0.143601 | -0.2271 | 0.8203921 | |
| AnnoF[T.A2010] | -0.519002 | 0.143601 | -3.6142 | 0.0003072 | *** |
| as.factor(Mese)[T.7] | 3.934178 | 0.156151 | 25.1947 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.832687 | 0.156151 | 24.5447 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.657876 | 0.191785 | 3.4303 | 0.0006127 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

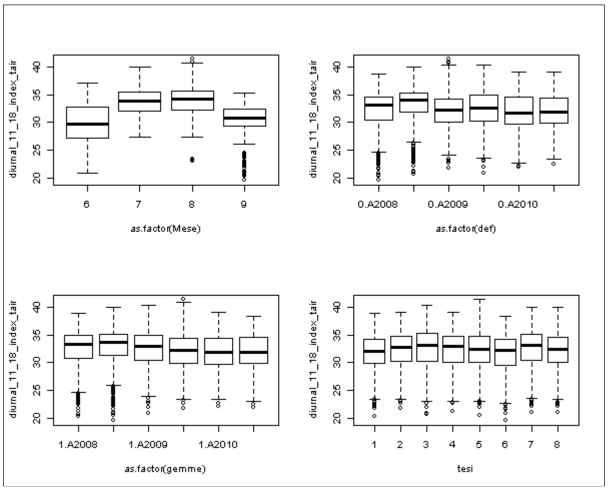
**(Dispersion parameter for gaussian family taken to be 8.647778 )**

- **Null deviance: 30352.3564 on 2525 degrees of freedom.**
- **Residual deviance: 21766.4583 on 2517 degrees of freedom.**

**AIC: 12629**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.966599504746068**




## media ore 19-02 temp. canopy: night_19_02_index_tair cortigliano

-

**Call: glm(formula = night_19_02_index_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -7.606 | -1.433 | -0.082 | 1.342 | 13.227 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 20.9711301 | 0.1258968 | 166.5739 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -0.0041586 | 0.0846064 | -0.0492 | 0.9608 | |
| as.factor(gemme)[T.3] | -0.0483040 | 0.0846064 | -0.5709 | 0.5681 | |
| as.factor(dirad)[T.1] | -0.3766320 | 0.0846064 | -4.4516 | 8.896e-06 | *** |
| AnnoF[T.A2009] | 0.8135486 | 0.1038231 | 7.8359 | 6.810e-15 | *** |
| AnnoF[T.A2010] | -0.0872222 | 0.1038231 | -0.8401 | 0.4009 | |
| as.factor(Mese)[T.7] | 2.7548259 | 0.1128968 | 24.4013 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.6130059 | 0.1128968 | 23.1451 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.9747596 | 0.1386599 | 7.0299 | 2.652e-12 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

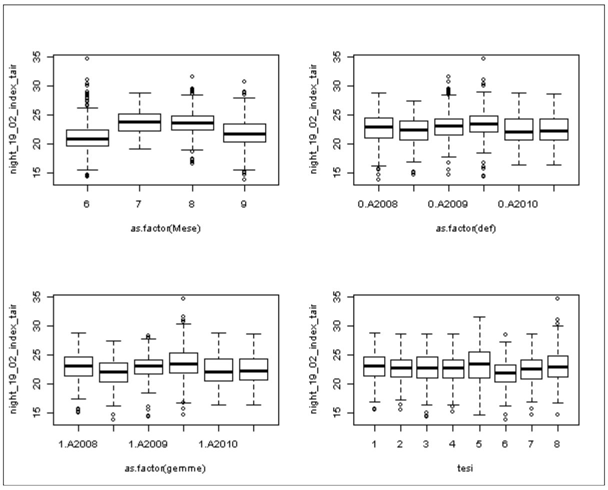
**(Dispersion parameter for gaussian family taken to be 4.52041 )**

- **Null deviance: 15465.9843 on 2525 degrees of freedom.**
- **Residual deviance: 11377.8724 on 2517 degrees of freedom.**

**AIC: 10990**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.803548805794079**



## errore standard mattutino tra le ore 5-10 temp. canopy: dmorn_stderr_5_10_tair cortigliano

- 

**Call: glm(formula = dmorn_stderr_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -2.3498 | -0.4639 | 0.0021 | 0.5044 | 2.0110 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 2.156731 | 0.040877 | 52.7616 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.092356 | 0.027471 | 3.3620 | 0.0007854 | *** |
| as.factor(gemme)[T.3] | 0.076043 | 0.027471 | 2.7682 | 0.0056788 | ** |
| as.factor(dirad)[T.1] | -0.041727 | 0.027471 | -1.5190 | 0.1288970 | |
| AnnoF[T.A2009] | -0.361318 | 0.033710 | -10.7185 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.188624 | 0.033710 | -5.5955 | 2.438e-08 | *** |
| as.factor(Mese)[T.7] | 0.294319 | 0.036656 | 8.0292 | 1.491e-15 | *** |
| as.factor(Mese)[T.8] | 0.383265 | 0.036656 | 10.4557 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -0.122115 | 0.045021 | -2.7124 | 0.0067251 | ** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

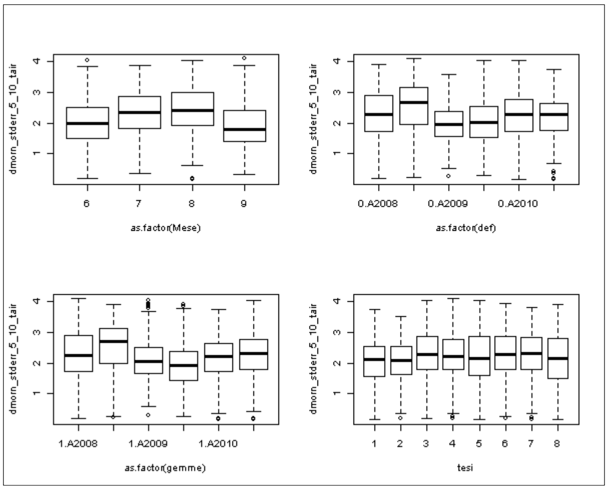
**(Dispersion parameter for gaussian family taken to be 0.4765459 )**

- **Null deviance: 1360.8494 on 2525 degrees of freedom.**
- **Residual deviance: 1199.4661 on 2517 degrees of freedom.**

**AIC: 5307.2**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.148591894194682**



## varianza mattutina tra le ore 5-10 temp. canopy: dmorn_var_5_10_tair cortigliano

- 

**Call: glm(formula = dmorn_var_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -41.3 | -13.5 | -2.6 | 12.3 | 70.4 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 31.38319 | 1.08807 | 28.8429 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 2.71610 | 0.73122 | 3.7145 | 0.0002080 | *** |
| as.factor(gemme)[T.3] | 2.66760 | 0.73122 | 3.6482 | 0.0002695 | *** |
| as.factor(dirad)[T.1] | -1.41456 | 0.73122 | -1.9345 | 0.0531600 | . |
| AnnoF[T.A2009] | -10.61508 | 0.89730 | -11.8300 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -6.16620 | 0.89730 | -6.8720 | 7.954e-12 | *** |
| as.factor(Mese)[T.7] | 7.58416 | 0.97572 | 7.7729 | 1.109e-14 | *** |
| as.factor(Mese)[T.8] | 10.58837 | 0.97572 | 10.8519 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -2.43985 | 1.19838 | -2.0360 | 0.0418584 | * |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

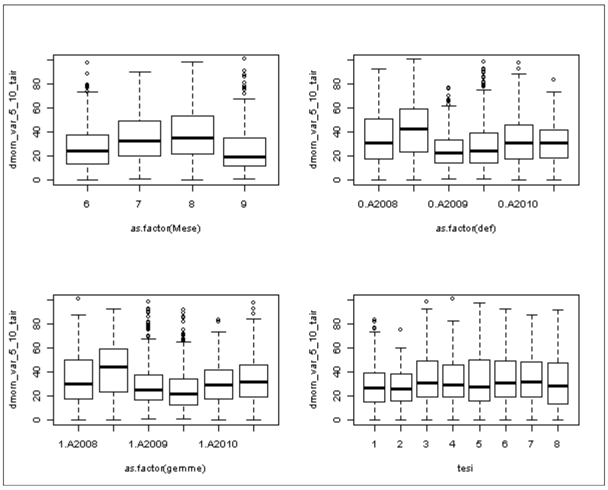
**(Dispersion parameter for gaussian family taken to be 337.6473 )**

- **Null deviance: 973981.6638 on 2525 degrees of freedom.**
- **Residual deviance: 849858.3522 on 2517 degrees of freedom.**

**AIC: 21886**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## errore standard serale tra le ore 15-20 temp. canopy: dtwi_stderr_15_20_tair cortigliano

- 

**Call: glm(formula = dtwi_stderr_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1.347 | -0.245 | 0.017 | 0.264 | 4.051 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.2340739 | 0.0254798 | 48.4334 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.0846034 | 0.0171232 | 4.9409 | 8.288e-07 | *** |
| as.factor(gemme)[T.3] | 0.0013797 | 0.0171232 | 0.0806 | 0.9357875 | |
| as.factor(dirad)[T.1] | 0.0699700 | 0.0171232 | 4.0863 | 4.521e-05 | *** |
| AnnoF[T.A2009] | -0.0676371 | 0.0210124 | -3.2189 | 0.0013031 | ** |
| AnnoF[T.A2010] | -0.0230402 | 0.0210124 | -1.0965 | 0.2729630 | |
| as.factor(Mese)[T.7] | 0.0864248 | 0.0228488 | 3.7825 | 0.0001589 | *** |
| as.factor(Mese)[T.8] | 0.2415172 | 0.0228488 | 10.5702 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.1753006 | 0.0280629 | 6.2467 | 4.906e-10 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

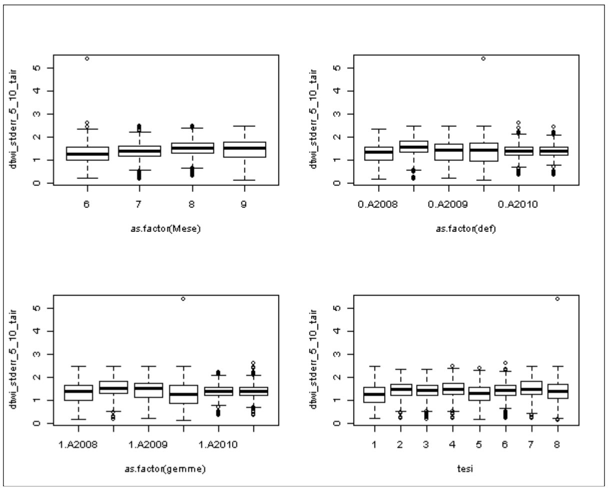
**(Dispersion parameter for gaussian family taken to be 0.1851576 )**

- **Null deviance: 498.4616 on 2525 degrees of freedom.**
- **Residual deviance: 466.0417 on 2517 degrees of freedom.**

**AIC: 2919.2**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.0712101520640617**




## varianza serale tra le ore 15-20 temp. canopy: dtwi_var_15_20_taircortigliano

- 

**Call: glm(formula = dtwi_var_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = cortigliano_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -15.84 | -4.79 | -0.69 | 3.63 | 160.97 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 10.40082 | 0.45394 | 22.9125 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 1.57076 | 0.30506 | 5.1490 | 2.821e-07 | *** |
| as.factor(gemme)[T.3] | 0.19344 | 0.30506 | 0.6341 | 0.5260792 | |
| as.factor(dirad)[T.1] | 1.08229 | 0.30506 | 3.5478 | 0.0003956 | *** |
| AnnoF[T.A2009] | -0.96377 | 0.37435 | -2.5745 | 0.0100944 | * |
| AnnoF[T.A2010] | -1.06082 | 0.37435 | -2.8338 | 0.0046367 | ** |
| as.factor(Mese)[T.7] | 1.06490 | 0.40706 | 2.6160 | 0.0089486 | ** |
| as.factor(Mese)[T.8] | 3.74218 | 0.40706 | 9.1931 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 3.06724 | 0.49996 | 6.1350 | 9.859e-10 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

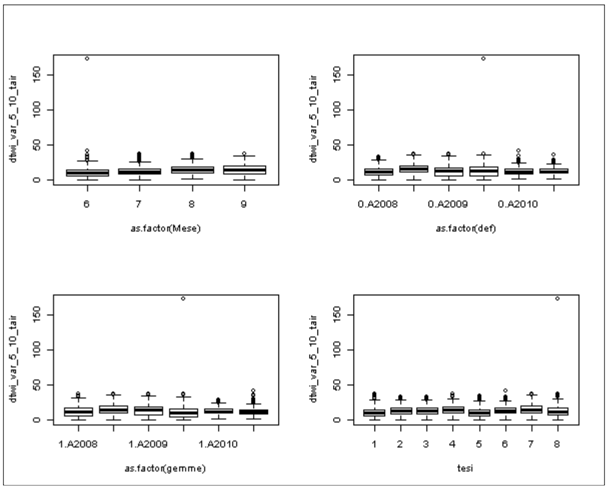
**(Dispersion parameter for gaussian family taken to be 58.76775 )**

- **Null deviance: 156836.1211 on 2525 degrees of freedom.**
- **Residual deviance: 147918.4238 on 2517 degrees of freedom.**

**AIC: 17469**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.970705723925557**




## Analisi statistica campione Tuscania donna olimpia

## IBIMET CNR, Istituto di Biometeorologia di Firenze -CNR

*Matese.A.,Genesio L.,Crisci A.*

## Temperatura Grappolo donna

### Temperatura Grappolo Mattina

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new, subset = ((jd > 153) & (jd < 260) & Code == "Morning"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -14.169 | -2.759 | 0.014 | 2.803 | 12.235 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 21.026513 | 0.130760 | 160.8029 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.594926 | 0.089103 | 6.6768 | 2.617e-11 | *** |
| as.factor(gemme)[T.3] | -0.311818 | 0.089103 | -3.4995 | 0.0004688 | *** |
| as.factor(dirad)[T.1] | -0.030383 | 0.089103 | -0.3410 | 0.7331222 | |
| AnnoF[T.A2009] | -0.601297 | 0.109109 | -5.5110 | 3.687e-08 | *** |
| AnnoF[T.A2010] | -0.513167 | 0.109109 | -4.7033 | 2.606e-06 | *** |
| as.factor(Mese)[T.7] | 1.893705 | 0.120116 | 15.7656 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.194905 | 0.117962 | 27.0841 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.038117 | 0.142906 | 7.2643 | 4.128e-13 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

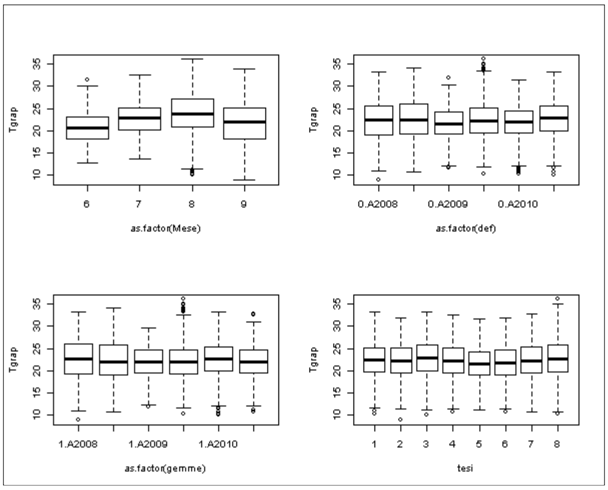
**(Dispersion parameter for gaussian family taken to be 14.83076 )**

- **Null deviance: 123460.3505 on 7471 degrees of freedom.**
- **Residual deviance: 110681.9801 on 7463 degrees of freedom.**

**AIC: 41365**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.81916452510368**




## Temperatura Grappolo Pieno giorno

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -18.24 | -1.86 | 0.17 | 2.18 | 12.11 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 28.987795 | 0.064284 | 450.9310 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.350235 | 0.044414 | 7.8858 | 3.273e-15 | *** |
| as.factor(gemme)[T.3] | -0.680913 | 0.044414 | -15.3312 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -0.321498 | 0.044414 | -7.2387 | 4.680e-13 | *** |
| AnnoF[T.A2009] | -0.558459 | 0.054405 | -10.2649 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.660580 | 0.054389 | -12.1456 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | 3.886892 | 0.057160 | 67.9998 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 5.012977 | 0.059112 | 84.8050 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.978880 | 0.075649 | 39.3777 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

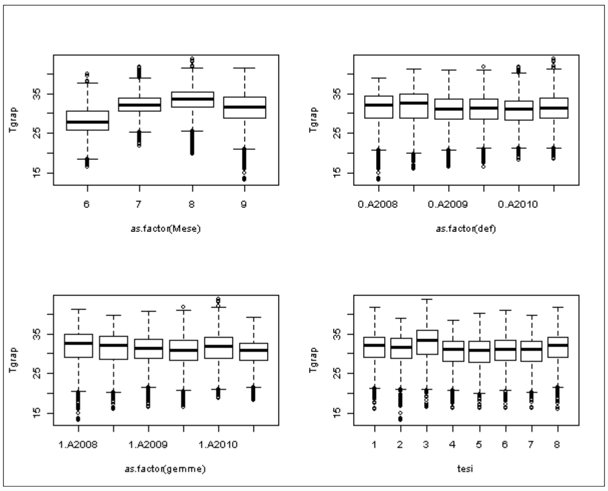
**(Dispersion parameter for gaussian family taken to be 10.74214 )**

- **Null deviance: 325954.5239 on 21782 degrees of freedom.**
- **Residual deviance: 233899.296 on 21774 degrees of freedom.**

**AIC: 113545**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.985389776960965**




## Temperatura Cross Grappolo Pieno giorno

- 

**Call: glm(formula = Tgrap ~ as.factor(gemme) * as.factor(def) + as.factor(def) * Rad + as.factor(gemme) * Rad + AnnoF + as.factor(Mese), family = gaussian(identity),**

data = donna_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -16.33 | -1.95 | 0.11 | 2.17 | 11.69 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 17.9537205 | 0.5715371 | 31.4130 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -5.6122583 | 0.5964435 | -9.4095 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 4.6595999 | 0.6003531 | 7.7614 | 8.766e-15 | *** |
| Rad | 0.0244415 | 0.0012952 | 18.8707 | < 2.2e-16 | *** |
| AnnoF[T.A2009] | -0.3707577 | 0.0544325 | -6.8113 | 9.922e-12 | *** |
| AnnoF[T.A2010] | -0.3854465 | 0.0542385 | -7.1065 | 1.227e-12 | *** |
| as.factor(Mese)[T.7] | 4.3161945 | 0.0570352 | 75.6760 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 5.4209652 | 0.0587758 | 92.2312 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 3.1366446 | 0.0738936 | 42.4481 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3]:as.factor(def)[T.1] | 0.0124371 | 0.0875265 | 0.1421 | 0.887 | |
| as.factor(def)[T.1]:Rad | -0.0105456 | 0.0013793 | -7.6455 | 2.168e-14 | *** |
| as.factor(gemme)[T.3]:Rad | 0.0116854 | 0.0013885 | 8.4158 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 10.16377 )**

- **Null deviance: 325954.5239 on 21782 degrees of freedom.**
- **Residual deviance: 221275.4993 on 21771 degrees of freedom.**

**AIC: 112343**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.991816014323555**

## Temperatura Grappolo Sera

- 

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new, subset = ((jd > 153) & (jd < 260) & Code == "Evening"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -14.473 | -1.707 | 0.006 | 1.775 | 10.107 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 25.606647 | 0.098227 | 260.6884 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.318370 | 0.066190 | 4.8100 | 1.541e-06 | *** |
| as.factor(gemme)[T.3] | -0.406735 | 0.066190 | -6.1450 | 8.429e-10 | *** |
| as.factor(dirad)[T.1] | 0.088493 | 0.066190 | 1.3370 | 0.1813 | |
| AnnoF[T.A2009] | 0.666159 | 0.081024 | 8.2217 | 2.364e-16 | *** |
| AnnoF[T.A2010] | 0.476028 | 0.081101 | 5.8696 | 4.566e-09 | *** |
| as.factor(Mese)[T.7] | 3.243552 | 0.089531 | 36.2282 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.319921 | 0.088973 | 37.3137 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.104747 | 0.106561 | 19.7516 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

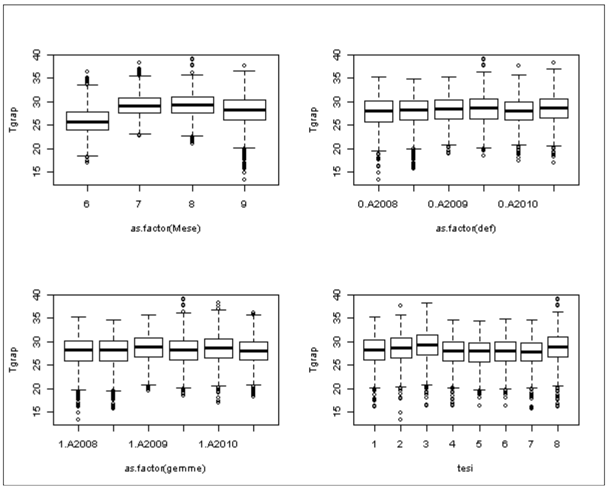
**(Dispersion parameter for gaussian family taken to be 7.799427 )**

- **Null deviance: 70369.1947 on 7120 degrees of freedom.**
- **Residual deviance: 55469.5278 on 7112 degrees of freedom.**

**AIC: 34846**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.876648713773008**




## Temperatura Grappolo Notte

-

**Call: glm(formula = Tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new, subset = ((jd > 153) & (jd < 260) & Code == "Notte"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -11.11 | -2.24 | -0.13 | 2.22 | 21.54 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 19.108181 | 0.059954 | 318.7164 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.079249 | 0.039933 | 1.9846 | 0.04721 | * |
| as.factor(gemme)[T.3] | -0.162655 | 0.039933 | -4.0732 | 4.651e-05 | *** |
| as.factor(dirad)[T.1] | 0.037212 | 0.039933 | 0.9319 | 0.35142 | |
| AnnoF[T.A2009] | 0.598508 | 0.048919 | 12.2346 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | 0.050070 | 0.048919 | 1.0235 | 0.30606 | |
| as.factor(Mese)[T.7] | 2.169602 | 0.055152 | 39.3385 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.351346 | 0.054047 | 43.5053 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.992623 | 0.063229 | 15.6989 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

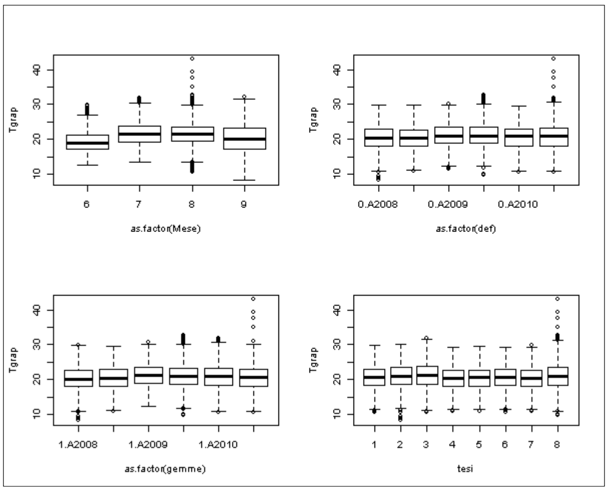
**(Dispersion parameter for gaussian family taken to be 9.83878 )**

- **Null deviance: 268107.5989 on 24679 degrees of freedom.**
- **Residual deviance: 242732.5513 on 24671 degrees of freedom.**

**AIC: 126476**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.642348692002927**




## Radiazione Grappolo Mattina

-

**Call: glm(formula = Rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new, subset =**

((jd > 153) & (jd < 260) & Code == "Morning"))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -364 | -23 | 11 | 33 | 125 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 394.75881 | 1.85958 | 212.2835 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 5.09358 | 1.26717 | 4.0196 | 5.886e-05 | *** |
| as.factor(gemme)[T.3] | -7.58132 | 1.26717 | -5.9829 | 2.294e-09 | *** |
| as.factor(dirad)[T.1] | 3.39850 | 1.26717 | 2.6820 | 0.007335 | ** |
| AnnoF[T.A2009] | -11.79006 | 1.55168 | -7.5983 | 3.366e-14 | *** |
| AnnoF[T.A2010] | -0.38156 | 1.55168 | -0.2459 | 0.805767 | |
| as.factor(Mese)[T.7] | -25.06310 | 1.70822 | -14.6720 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -9.21480 | 1.67759 | -5.4929 | 4.085e-08 | *** |
| as.factor(Mese)[T.9] | -24.12180 | 2.03232 | -11.8691 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

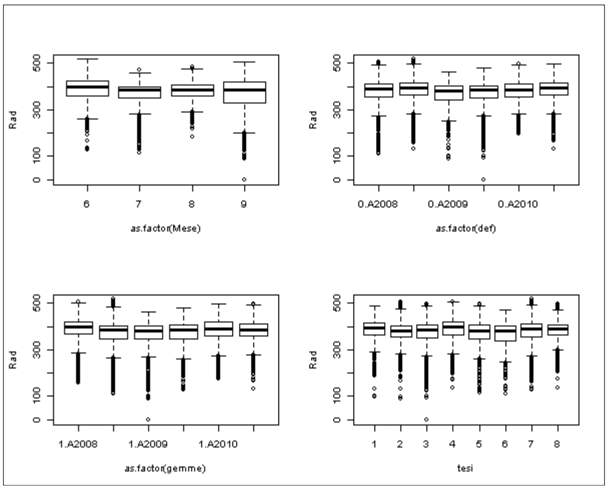
**(Dispersion parameter for gaussian family taken to be 2999.493 )**

- **Null deviance: 23606926.7771 on 7471 degrees of freedom.**
- **Residual deviance: 22385213.1013 on 7463 degrees of freedom.**

**AIC: 81038**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Radiazione Grappolo Pieno giorno

**Call: glm(formula = Rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -198.1 | -20.2 | -1.7 | 19.4 | 89.0 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 446.21779 | 0.59936 | 744.493 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 9.61202 | 0.41409 | 23.212 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -4.91513 | 0.41409 | -11.870 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | 4.76884 | 0.41409 | 11.516 | < 2.2e-16 | *** |
| AnnoF[T.A2009] | -12.17322 | 0.50725 | -23.999 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -14.33696 | 0.50709 | -28.273 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -17.08924 | 0.53294 | -32.066 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -15.54265 | 0.55113 | -28.201 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -5.35685 | 0.70532 | -7.595 | 3.203e-14 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

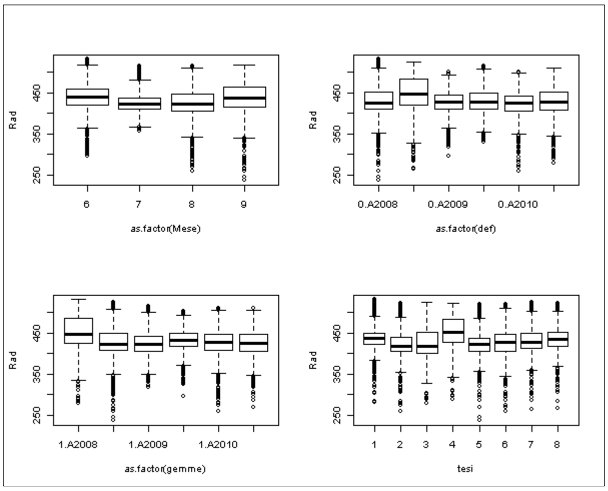
**(Dispersion parameter for gaussian family taken to be 933.7987 )**

- **Null deviance: 23184757.7917 on 21782 degrees of freedom.**
- **Residual deviance: 20332532.9836 on 21774 degrees of freedom.**

**AIC: 210808**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Radiazione Cross Grappolo Pieno giorno

- 

**Call: glm(formula = Rad ~ as.factor(gemme) * as.factor(def) + as.factor(def) * Tgrap + as.factor(gemme) * Tgrap + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new, subset = ((jd > 153) & (jd < 260) & Code == "Full_day"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -176.7 | -19.8 | -1.3 | 18.8 | 94.2 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 402.705914 | 3.037802 | 132.5649 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -25.278496 | 3.319162 | -7.6159 | 2.725e-14 | *** |
| as.factor(def)[T.1] | 2.735210 | 3.374409 | 0.8106 | 0.41762 | |
| Tgrap | 1.623561 | 0.098145 | 16.5425 | < 2.2e-16 | *** |
| AnnoF[T.A2009] | -11.028191 | 0.496725 | -22.2018 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -12.876637 | 0.497352 | -25.8904 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -25.200158 | 0.573137 | -43.9688 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -25.923747 | 0.621026 | -41.7434 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -11.397654 | 0.713920 | -15.9649 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3]:as.factor(def)[T.1] | -1.010894 | 0.813032 | -1.2434 | 0.21375 | |
| as.factor(def)[T.1]:Tgrap | 0.212239 | 0.105460 | 2.0125 | 0.04418 | * |
| as.factor(gemme)[T.3]:Tgrap | 0.714032 | 0.105349 | 6.7778 | 1.251e-11 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

**(Dispersion parameter for gaussian family taken to be 891.0879 )**

- **Null deviance: 23184757.7917 on 21782 degrees of freedom.**
- **Residual deviance: 19399874.2973 on 21771 degrees of freedom.**

**AIC: 209791**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**

## Radiazione Grappolo Sera

- 

**Call: glm(formula = Rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new, subset = ((jd > 153) & (jd < 260) & Code == "Evening"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -302.6 | -20.5 | 9.6 | 27.4 | 140.9 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 388.33810 | 1.59271 | 243.8219 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 9.85150 | 1.07324 | 9.1792 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -7.17768 | 1.07324 | -6.6879 | 2.437e-11 | *** |
| as.factor(dirad)[T.1] | 2.90559 | 1.07324 | 2.7073 | 0.0068 | ** |
| AnnoF[T.A2009] | -6.79975 | 1.31377 | -5.1757 | 2.332e-07 | *** |
| AnnoF[T.A2010] | 0.55466 | 1.31502 | 0.4218 | 0.6732 | |
| as.factor(Mese)[T.7] | -13.84207 | 1.45171 | -9.5350 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -39.86784 | 1.44267 | -27.6348 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -25.57781 | 1.72784 | -14.8033 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

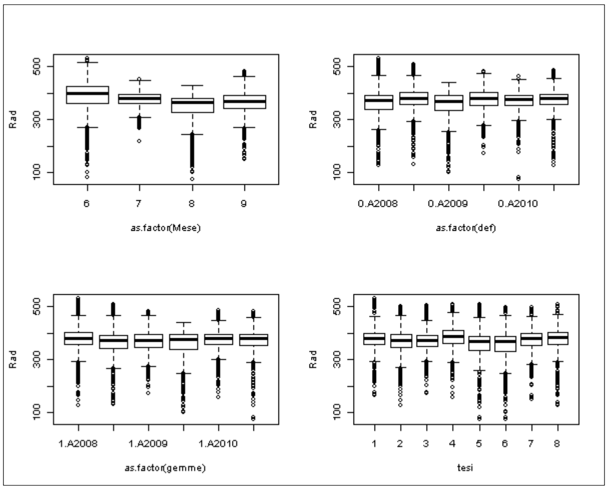
**(Dispersion parameter for gaussian family taken to be 2050.573 )**

- **Null deviance: 16628955.5237 on 7120 degrees of freedom.**
- **Residual deviance: 14583678.2562 on 7112 degrees of freedom.**

**AIC: 74523**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Temperatura Aria Canopy Mattina

- 

**Call: glm(formula = Tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new, subset = ((jd > 153) & (jd < 260) & Code == "Morning"))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -13.470 | -2.735 | 0.083 | 2.846 | 10.898 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 20.9805214 | 0.1270538 | 165.1310 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.1415977 | 0.0865780 | 1.6355 | 0.1020 | |
| as.factor(gemme)[T.3] | -0.0095119 | 0.0865780 | -0.1099 | 0.9125 | |
| as.factor(dirad)[T.1] | 0.0931147 | 0.0865780 | 1.0755 | 0.2822 | |
| AnnoF[T.A2009] | -0.5125185 | 0.1060164 | -4.8343 | 1.363e-06 | *** |
| AnnoF[T.A2010] | -0.7752821 | 0.1060164 | -7.3129 | 2.887e-13 | *** |
| as.factor(Mese)[T.7] | 2.3161735 | 0.1167122 | 19.8452 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.2515477 | 0.1146194 | 28.3682 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.9553649 | 0.1388561 | 6.8803 | 6.459e-12 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

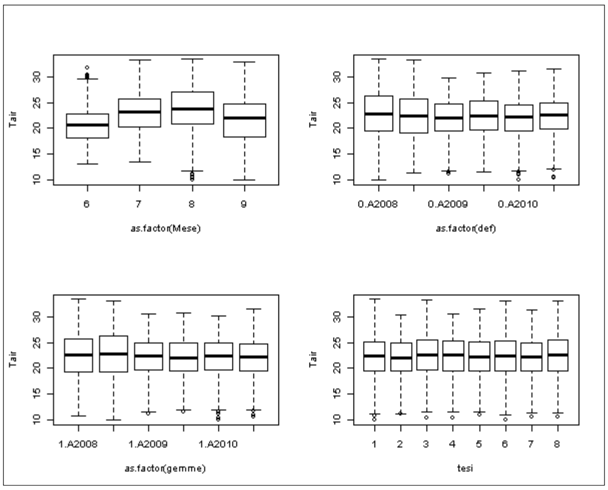
**(Dispersion parameter for gaussian family taken to be 14.00206 )**

- **Null deviance: 117966.257 on 7471 degrees of freedom.**
- **Residual deviance: 104497.359 on 7463 degrees of freedom.**

**AIC: 40936**

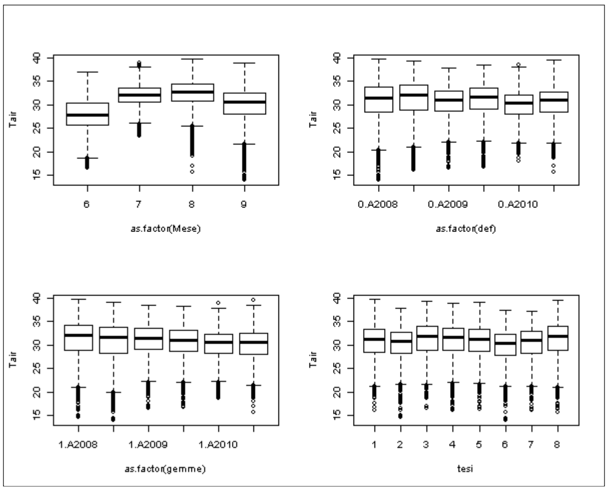
**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.835127595998237**



## Temperatura Aria Canopy Pieno giorno

**Pseudo Rsquared: 0.835127595998237**

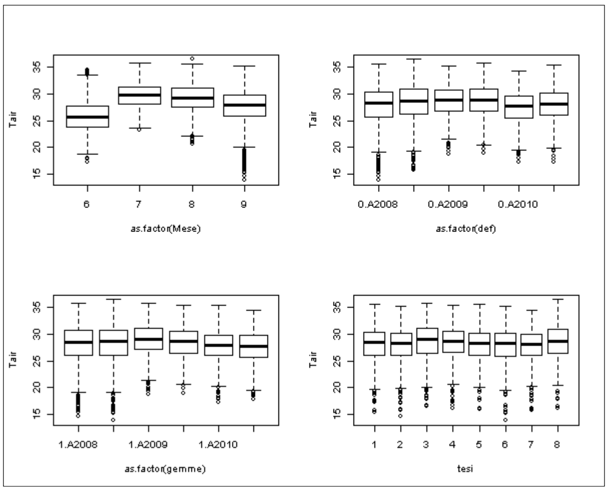


## Temperatura Aria Crossing Canopy Pieno giorno

**Pseudo Rsquared: 0.835127595998237**

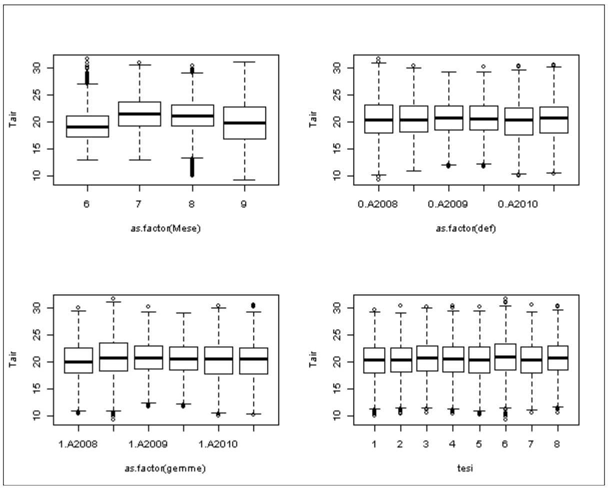
## Temperatura Aria Canopy Sera

**Pseudo Rsquared: 0.835127595998237**



## Temperatura Aria Canopy Notte

**Pseudo Rsquared: 0.835127595998237**




## Analisi indici giornalieri radiazione donna

### radiazione media : avg_rad donna

- 

**Call: glm(formula = avg_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -59.30 | -9.16 | 0.42 | 8.76 | 57.74 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 278.63229 | 0.87563 | 318.2080 | < 2e-16 | *** |
| as.factor(def)[T.1] | 8.70314 | 0.59527 | 14.6205 | < 2e-16 | *** |
| as.factor(gemme)[T.3] | -1.18245 | 0.59527 | -1.9864 | 0.04709 | * |
| as.factor(dirad)[T.1] | 5.76451 | 0.59527 | 9.6839 | < 2e-16 | *** |
| AnnoF[T.A2009] | -7.59936 | 0.72905 | -10.4236 | < 2e-16 | *** |
| AnnoF[T.A2010] | -7.61921 | 0.72905 | -10.4509 | < 2e-16 | *** |
| as.factor(Mese)[T.7] | -17.82173 | 0.79165 | -22.5122 | < 2e-16 | *** |
| as.factor(Mese)[T.8] | -37.99721 | 0.79165 | -47.9977 | < 2e-16 | *** |
| as.factor(Mese)[T.9] | -53.16444 | 0.97458 | -54.5512 | < 2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

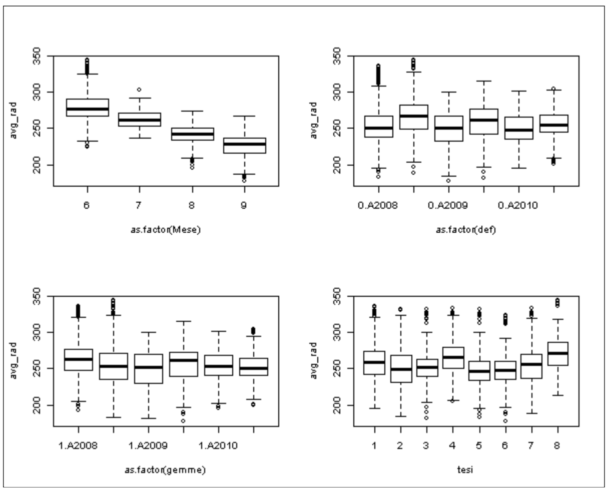
**(Dispersion parameter for gaussian family taken to be 225.3627 )**

- **Null deviance: 1555430.1555 on 2543 degrees of freedom.**
- **Residual deviance: 571294.3359 on 2535 degrees of freedom.**

**AIC: 21013**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




### cumulata radiazione : sum_rad donna

•

**Call: glm(formula = sum_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1423 | -220 | 10 | 210 | 1386 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 6687.175 | 21.015 | 318.2080 | < 2e-16 | *** |
| as.factor(def)[T.1] | 208.875 | 14.286 | 14.6205 | < 2e-16 | *** |
| as.factor(gemme)[T.3] | -28.379 | 14.286 | -1.9864 | 0.04709 | * |
| as.factor(dirad)[T.1] | 138.348 | 14.286 | 9.6839 | < 2e-16 | *** |
| AnnoF[T.A2009] | -182.385 | 17.497 | -10.4236 | < 2e-16 | *** |
| AnnoF[T.A2010] | -182.861 | 17.497 | -10.4509 | < 2e-16 | *** |
| as.factor(Mese)[T.7] | -427.721 | 19.000 | -22.5122 | < 2e-16 | *** |
| as.factor(Mese)[T.8] | -911.933 | 19.000 | -47.9977 | < 2e-16 | *** |
| as.factor(Mese)[T.9] | -1275.946 | 23.390 | -54.5512 | < 2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

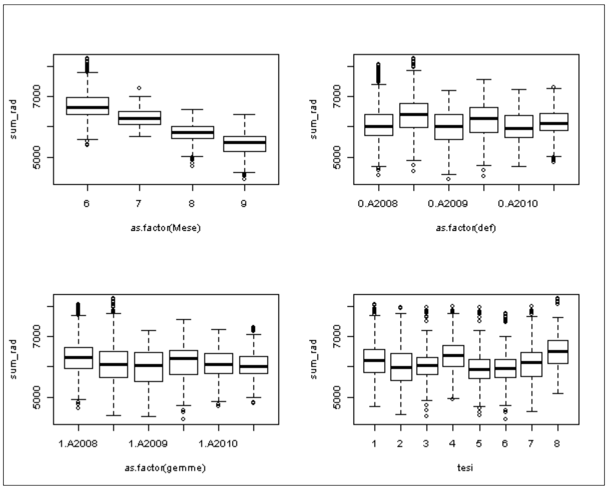
**(Dispersion parameter for gaussian family taken to be 129808.9 )**

- **Null deviance: 895927795.7837 on 2543 degrees of freedom.**
- **Residual deviance: 329065573.781 on 2535 degrees of freedom.**

**AIC: 37183**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## escursione radiazione: et_rad donna

•

**Call: glm(formula = et_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -106.288 | -19.072 | -0.035 | 21.680 | 69.075 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 472.5587 | 1.6729 | 282.4707 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 6.5162 | 1.1373 | 5.7295 | 1.126e-08 | *** |
| as.factor(gemme)[T.3] | -11.7551 | 1.1373 | -10.3359 | < 2.2e-16 | *** |
| as.factor(dirad)[T.1] | -1.5700 | 1.1373 | -1.3805 | 0.16757 | |
| AnnoF[T.A2009] | -22.1487 | 1.3929 | -15.9012 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -11.9192 | 1.3929 | -8.5571 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -10.6313 | 1.5125 | -7.0290 | 2.664e-12 | *** |
| as.factor(Mese)[T.8] | -3.3086 | 1.5125 | -2.1875 | 0.02879 | * |
| as.factor(Mese)[T.9] | 2.1386 | 1.8620 | 1.1486 | 0.25084 | |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

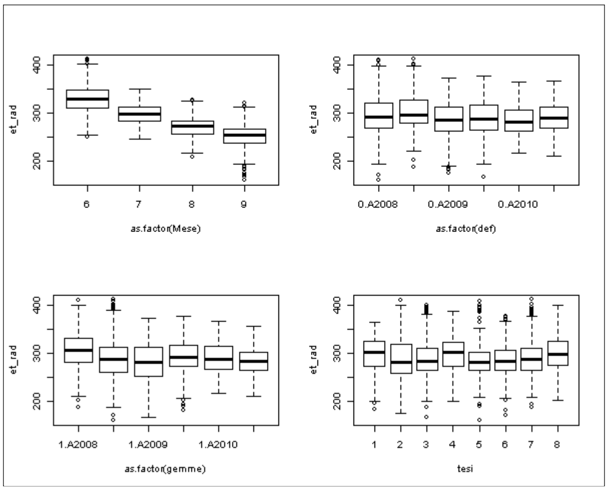
(Dispersion parameter for gaussian family taken to be 822.6329 )

- Null deviance: 2467878.041 on 2543 degrees of freedom.
- Residual deviance: 2085374.4168 on 2535 degrees of freedom.

AIC: 24307

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 1




## media ore 3-10 radiazione: morning_03_10_index_rad donna

-

Call: glm(formula = morning_03_10_index_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))

Deviance Residuals:

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -92.03 | -15.28 | 0.74 | 15.96 | 79.43 |

Coefficients:

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 332.63407 | 1.37502 | 241.9113 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 6.05050 | 0.93477 | 6.4727 | 1.151e-10 | *** |
| as.factor(gemme)[T.3] | -3.47409 | 0.93477 | -3.7165 | 0.0002063 | *** |
| as.factor(dirad)[T.1] | 4.45966 | 0.93477 | 4.7709 | 1.938e-06 | *** |
| AnnoF[T.A2009] | -11.18713 | 1.14485 | -9.7717 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -8.98296 | 1.14485 | -7.8464 | 6.259e-15 | *** |
| as.factor(Mese)[T.7] | -31.13859 | 1.24314 | -25.0483 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -59.55601 | 1.24314 | -47.9076 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -76.39411 | 1.53041 | -49.9175 | < 2.2e-16 | *** |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

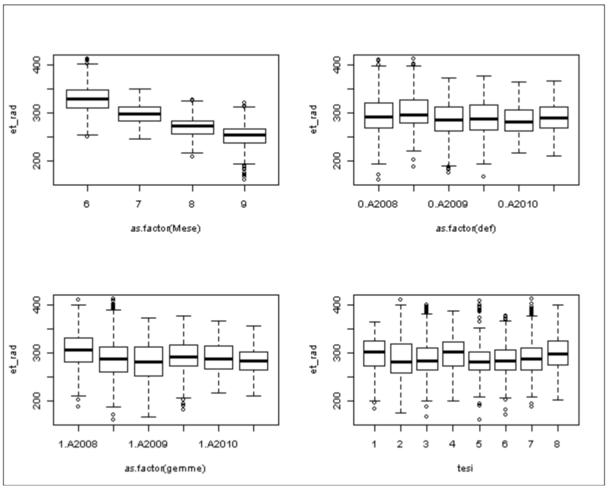
(Dispersion parameter for gaussian family taken to be 555.7283 )

- Null deviance: 3427248.7841 on 2543 degrees of freedom.
- Residual deviance: 1408771.1828 on 2535 degrees of freedom.

AIC: 23309

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 1




## media ore 11-18 radiazione: diurnal_11_18_index_rad donna

- 

**Call: glm(formula = diurnal_11_18_index_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -106.75 | -12.57 | -0.32 | 12.81 | 89.74 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 435.67313 | 1.28940 | 337.8882 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 10.43144 | 0.87656 | 11.9005 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | -4.02870 | 0.87656 | -4.5961 | 4.517e-06 | *** |
| as.factor(dirad)[T.1] | 5.35221 | 0.87656 | 6.1059 | 1.179e-09 | *** |
| AnnoF[T.A2009] | -8.22079 | 1.07356 | -7.6575 | 2.677e-14 | *** |
| AnnoF[T.A2010] | -9.69158 | 1.07356 | -9.0275 | < 2.2e-16 | *** |
| as.factor(Mese)[T.7] | -18.67175 | 1.16573 | -16.0172 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | -24.16817 | 1.16573 | -20.7322 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -26.73022 | 1.43511 | -18.6259 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

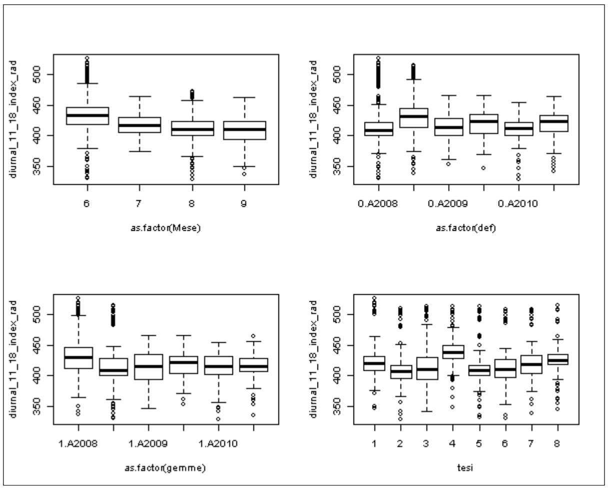
**(Dispersion parameter for gaussian family taken to be 488.6713 )**

- **Null deviance: 1657122.9504 on 2543 degrees of freedom.**
- **Residual deviance: 1238781.8536 on 2535 degrees of freedom.**

**AIC: 22982**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## media ore 19-02 radiazione: night_19_02_index_rad donna

- 

**Call: glm(formula = night_19_02_index_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

donna_new_indici, subset = ((jd > 153) & (jd < 260)))

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -63.21 | -12.99 | 0.36 | 11.58 | 75.76 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 67.58967 | 1.07238 | 63.0275 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 9.62747 | 0.72903 | 13.2060 | < 2.2e-16 | *** |
| as.factor(gemme)[T.3] | 3.95544 | 0.72903 | 5.4257 | 6.321e-08 | *** |
| as.factor(dirad)[T.1] | 7.48165 | 0.72903 | 10.2625 | < 2.2e-16 | *** |
| AnnoF[T.A2009] | -3.39018 | 0.89287 | -3.7969 | 0.0001499 | *** |
| AnnoF[T.A2010] | -4.18311 | 0.89287 | -4.6850 | 2.947e-06 | *** |
| as.factor(Mese)[T.7] | -3.65485 | 0.96953 | -3.7697 | 0.0001672 | *** |
| as.factor(Mese)[T.8] | -30.26746 | 0.96953 | -31.2187 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -56.36898 | 1.19357 | -47.2273 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

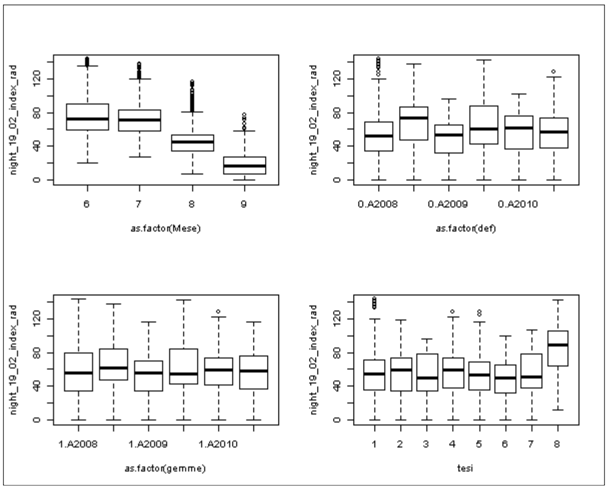
**(Dispersion parameter for gaussian family taken to be 338.0199 )**

- **Null deviance: 1990283.1496 on 2543 degrees of freedom.**
- **Residual deviance: 856880.5397 on 2535 degrees of freedom.**

**AIC: 22045**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## errore standard mattutino tra le ore 5-10 radiazione: dmorn_stderr_5_10_rad donna

- 

**Call: glm(formula = dmorn_stderr_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -33.1 | -7.8 | -0.6 | 6.9 | 41.1 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 18.80994 | 0.66348 | 28.3506 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.48240 | 0.45104 | 1.0695 | 0.284939 | |
| as.factor(gemme)[T.3] | -1.10910 | 0.45104 | -2.4590 | 0.014000 | * |
| as.factor(dirad)[T.1] | -0.96213 | 0.45104 | -2.1331 | 0.033010 | * |
| AnnoF[T.A2009] | -1.81811 | 0.55241 | -3.2912 | 0.001011 | ** |
| AnnoF[T.A2010] | -1.41587 | 0.55241 | -2.5631 | 0.010432 | * |
| as.factor(Mese)[T.7] | 6.66034 | 0.59984 | 11.1035 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 29.60060 | 0.59984 | 49.3474 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 47.74272 | 0.73845 | 64.6524 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

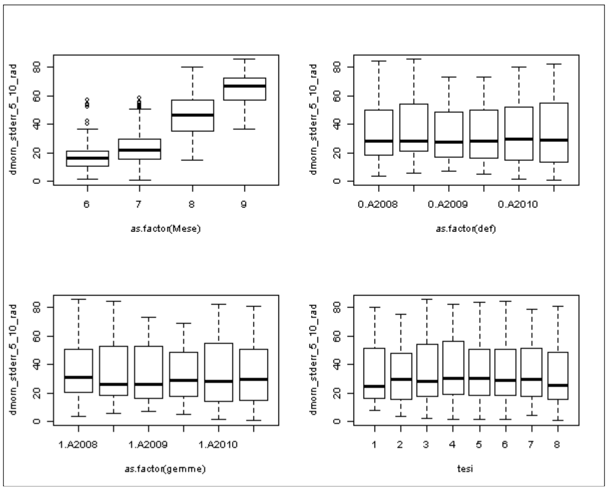
**(Dispersion parameter for gaussian family taken to be 129.3875 )**

- **Null deviance: 1069786.3657 on 2543 degrees of freedom.**
- **Residual deviance: 327997.3816 on 2535 degrees of freedom.**

**AIC: 19602**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## varianza mattutina tra le ore 5-10 radiazione: dmorn_var_5_10_rad donna

-

**Call: glm(formula = dmorn_var_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -17961 | -2814 | -581 | 2300 | 23310 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 2775.59 | 343.45 | 8.0815 | 9.800e-16 | *** |
| as.factor(def)[T.1] | 455.15 | 233.48 | 1.9494 | 0.0513577 | . |
| as.factor(gemme)[T.3] | -779.69 | 233.48 | -3.3394 | 0.0008518 | *** |
| as.factor(dirad)[T.1] | -433.40 | 233.48 | -1.8562 | 0.0635371 | . |
| AnnoF[T.A2009] | -981.35 | 285.96 | -3.4318 | 0.0006092 | *** |
| AnnoF[T.A2010] | 162.39 | 285.96 | 0.5679 | 0.5701729 | |
| as.factor(Mese)[T.7] | 1891.69 | 310.51 | 6.0922 | 1.283e-09 | *** |
| as.factor(Mese)[T.8] | 12207.72 | 310.51 | 39.3151 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 23561.92 | 382.26 | 61.6381 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

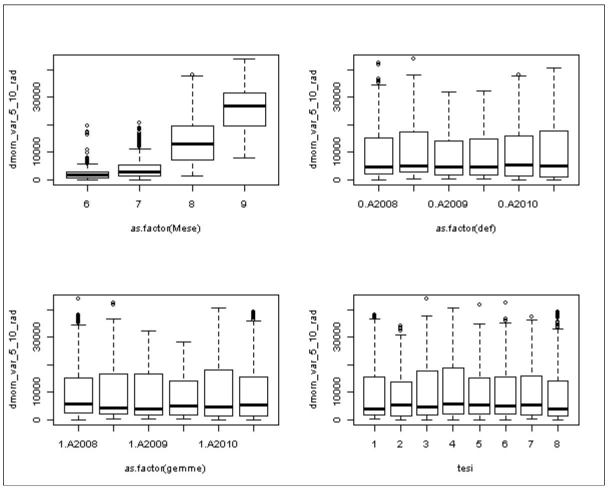
**(Dispersion parameter for gaussian family taken to be 34671349 )**

- **Null deviance: 261089488499.476 on 2543 degrees of freedom.**
- **Residual deviance: 87891869651.8161 on 2535 degrees of freedom.**

**AIC: 51398**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**



## errore standard serale tra le ore 15-20 radiazione: dtwi_stderr_15_20_rad donna

- **Call: glm(formula = dtwi_stderr_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -34.72 | -9.53 | -0.25 | 9.56 | 33.06 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 38.56773 | 0.72852 | 52.9396 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -1.25382 | 0.49526 | -2.5316 | 0.0114133 | * |
| as.factor(gemme)[T.3] | 0.27170 | 0.49526 | 0.5486 | 0.5833347 | |
| as.factor(dirad)[T.1] | -0.61250 | 0.49526 | -1.2367 | 0.2163075 | |
| AnnoF[T.A2009] | 2.15998 | 0.60657 | 3.5610 | 0.0003763 | *** |
| AnnoF[T.A2010] | -1.29482 | 0.60657 | -2.1347 | 0.0328842 | * |
| as.factor(Mese)[T.7] | -4.43448 | 0.65865 | -6.7327 | 2.053e-11 | *** |
| as.factor(Mese)[T.8] | 17.83623 | 0.65865 | 27.0800 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 32.39355 | 0.81085 | 39.9501 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

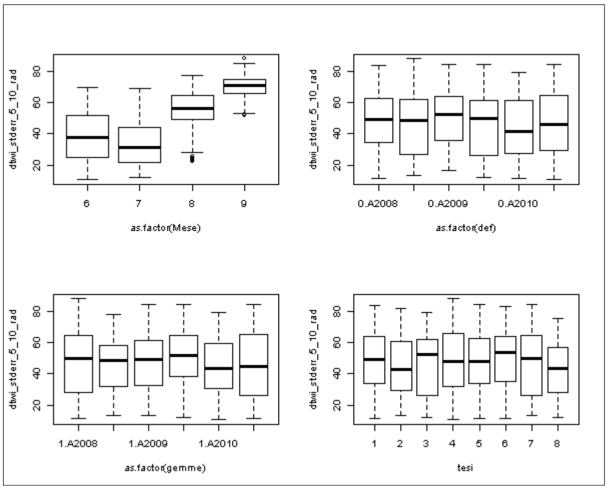
**(Dispersion parameter for gaussian family taken to be 156.0016 )**

- **Null deviance: 847049.0487 on 2543 degrees of freedom.**
- **Residual deviance: 395463.9474 on 2535 degrees of freedom.**

**AIC: 20077**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**



## varianza serale tra le ore 15-20 radiazione: dtwi_var_15_20_rad donna

- **Call: glm(formula = dtwi_var_5_10_rad ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -17032 | -5172 | -1102 | 4815 | 19681 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 10280.990 | 384.385 | 26.7466 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | -377.136 | 261.312 | -1.4432 | 0.1490757 | |
| as.factor(gemme)[T.3] | 97.707 | 261.312 | 0.3739 | 0.7085024 | |
| as.factor(dirad)[T.1] | -408.589 | 261.312 | -1.5636 | 0.1180341 | |
| AnnoF[T.A2009] | 1146.414 | 320.040 | 3.5821 | 0.0003473 | *** |
| AnnoF[T.A2010] | -533.163 | 320.040 | -1.6659 | 0.0958516 | . |
| as.factor(Mese)[T.7] | -2257.677 | 347.518 | -6.4966 | 9.856e-11 | *** |
| as.factor(Mese)[T.8] | 9263.169 | 347.518 | 26.6552 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 19898.307 | 427.822 | 46.5107 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

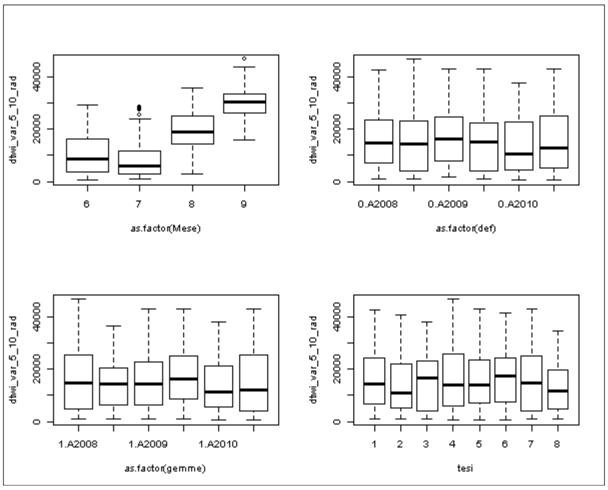
**(Dispersion parameter for gaussian family taken to be 43428443 )**

- **Null deviance: 261513112236.451 on 2543 degrees of freedom.**
- **Residual deviance: 110091104107.977 on 2535 degrees of freedom.**

**AIC: 51971**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## Analisi indici giornalieri temperatura grappolo donna

### temperatura media: avg_tgrap donna

- 

**Call: glm(formula = avg_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -9.45 | -1.34 | -0.16 | 1.36 | 6.57 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 23.958749 | 0.119296 | 200.8348 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.266977 | 0.081099 | 3.2920 | 0.001009 | ** |
| as.factor(gemme)[T.3] | -0.394331 | 0.081099 | -4.8623 | 1.231e-06 | *** |
| as.factor(dirad)[T.1] | -0.093111 | 0.081099 | -1.1481 | 0.251030 | |
| AnnoF[T.A2009] | 0.059571 | 0.099326 | 0.5998 | 0.548724 | |
| AnnoF[T.A2010] | -0.208540 | 0.099326 | -2.0996 | 0.035867 | * |
| as.factor(Mese)[T.7] | 2.743011 | 0.107854 | 25.4326 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.925041 | 0.107854 | 27.1204 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.841721 | 0.132777 | 6.3394 | 2.722e-10 | *** |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

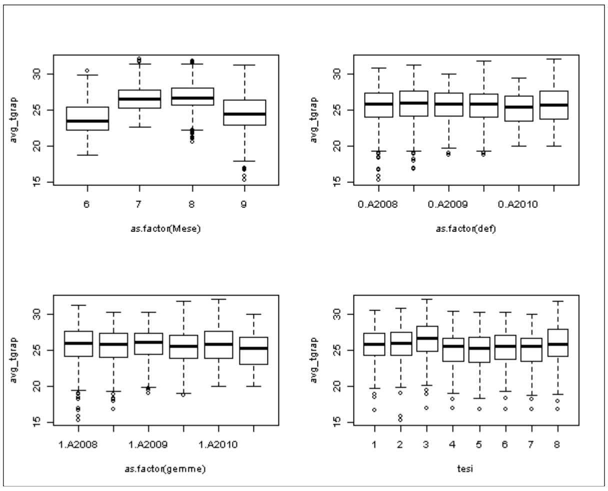
(Dispersion parameter for gaussian family taken to be 4.183037 )

- Null deviance: 14974.9198 on 2543 degrees of freedom.
- Residual deviance: 10603.9996 on 2535 degrees of freedom.

AIC: 10871

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 0.822883692460685




## cumulata temperatura grappolo: sum_tgrap donna

-

Call: glm(formula = sum_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))

Deviance Residuals:

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -226.9 | -32.1 | -3.8 | 32.6 | 157.6 |

Coefficients:

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 575.0100 | 2.8631 | 200.8348 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 6.4074 | 1.9464 | 3.2919 | 0.001009 | ** |
| as.factor(gemme)[T.3] | -9.4639 | 1.9464 | -4.8623 | 1.231e-06 | *** |
| as.factor(dirad)[T.1] | -2.2347 | 1.9464 | -1.1481 | 0.251028 | |
| AnnoF[T.A2009] | 1.4297 | 2.3838 | 0.5998 | 0.548714 | |
| AnnoF[T.A2010] | -5.0050 | 2.3838 | -2.0996 | 0.035866 | * |
| as.factor(Mese)[T.7] | 65.8323 | 2.5885 | 25.4326 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 70.2010 | 2.5885 | 27.1204 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 20.2013 | 3.1866 | 6.3394 | 2.722e-10 | *** |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

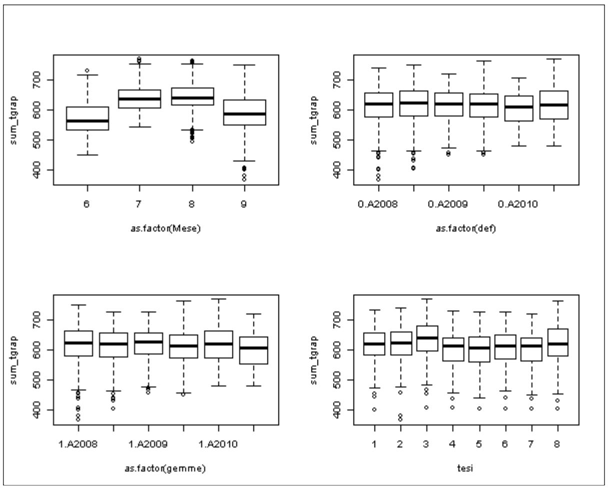
(Dispersion parameter for gaussian family taken to be 2409.429 )

- Null deviance: 8625552.896 on 2543 degrees of freedom.
- Residual deviance: 6107902.6363 on 2535 degrees of freedom.

AIC: 27041

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 1




## escursione termica grappolo: et_tgrap donna

- 

**Call: glm(formula = et_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -12.998 | -2.082 | -0.013 | 2.208 | 12.652 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 14.01107 | 0.19292 | 72.6262 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.15273 | 0.13115 | 1.1646 | 0.2443063 | |
| as.factor(gemme)[T.3] | -0.50277 | 0.13115 | -3.8335 | 0.0001294 | *** |
| as.factor(dirad)[T.1] | -0.35981 | 0.13115 | -2.7435 | 0.0061223 | ** |
| AnnoF[T.A2009] | -1.04933 | 0.16063 | -6.5327 | 7.777e-11 | *** |
| AnnoF[T.A2010] | -0.75932 | 0.16063 | -4.7273 | 2.400e-06 | *** |
| as.factor(Mese)[T.7] | 2.05972 | 0.17442 | 11.8092 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.09477 | 0.17442 | 17.7435 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 3.01286 | 0.21472 | 14.0315 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

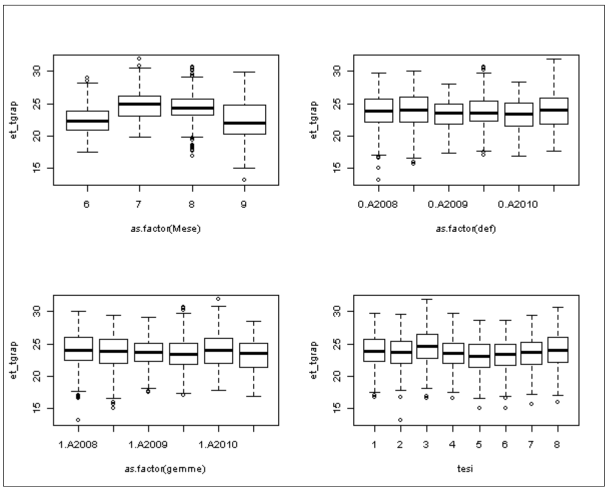
**(Dispersion parameter for gaussian family taken to be 10.93950 )**

- **Null deviance: 32524.0983 on 2543 degrees of freedom.**
- **Residual deviance: 27731.6407 on 2535 degrees of freedom.**

**AIC: 13317**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.847995222690575**




## media ore 3-10 temp. grappolo: morning_03_10_index_tgrap donna

- 

**Call: glm(formula = morning_03_10_index_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -6.99 | -1.59 | -0.12 | 1.46 | 7.30 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 22.841391 | 0.130019 | 175.6772 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.426493 | 0.088389 | 4.8252 | 1.482e-06 | *** |
| as.factor(gemme)[T.3] | -0.447051 | 0.088389 | -5.0578 | 4.545e-07 | *** |
| as.factor(dirad)[T.1] | -0.141149 | 0.088389 | -1.5969 | 0.110411 | |
| AnnoF[T.A2009] | -0.352077 | 0.108254 | -3.2523 | 0.001160 | ** |
| AnnoF[T.A2010] | -0.423098 | 0.108254 | -3.9084 | 9.535e-05 | *** |
| as.factor(Mese)[T.7] | 2.156945 | 0.117549 | 18.3494 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 1.939254 | 0.117549 | 16.4975 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.083782 | 0.144712 | 0.5790 | 0.562669 | |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

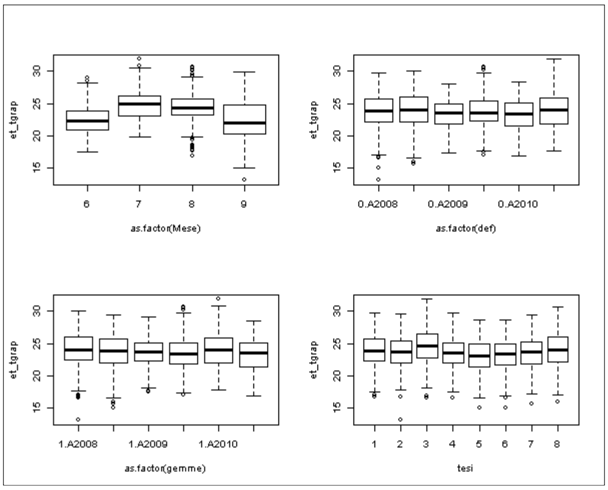
**(Dispersion parameter for gaussian family taken to be 4.968846 )**

- **Null deviance: 15476.9955 on 2543 degrees of freedom.**
- **Residual deviance: 12596.0235 on 2535 degrees of freedom.**

**AIC: 11309**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.847995222690575**




## media ore 11-18 temp. grappolo: diurnal_11_18_index_tgrap donna

- 

**Call: glm(formula = diurnal_11_18_index_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -15.64 | -1.46 | 0.22 | 1.77 | 9.39 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 28.811916 | 0.163942 | 175.7442 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.258663 | 0.111451 | 2.3209 | 0.020373 | * |
| as.factor(gemme)[T.3] | -0.553980 | 0.111451 | -4.9706 | 7.119e-07 | *** |
| as.factor(dirad)[T.1] | -0.188919 | 0.111451 | -1.6951 | 0.090181 | . |
| AnnoF[T.A2009] | -0.074471 | 0.136499 | -0.5456 | 0.585404 | |
| AnnoF[T.A2010] | -0.374809 | 0.136499 | -2.7459 | 0.006078 | ** |
| as.factor(Mese)[T.7] | 3.794799 | 0.148218 | 25.6028 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 4.344729 | 0.148218 | 29.3130 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.975353 | 0.182468 | 10.8257 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

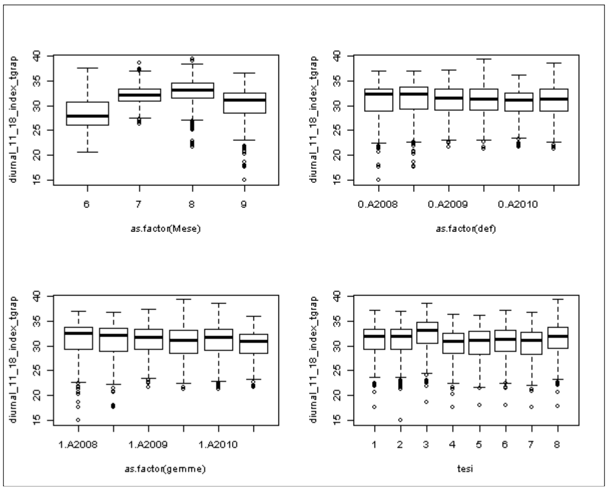
**(Dispersion parameter for gaussian family taken to be 7.899937 )**

- **Null deviance: 28516.7189 on 2543 degrees of freedom.**
- **Residual deviance: 20026.3398 on 2535 degrees of freedom.**

**AIC: 12489**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.96448431956953**




## media ore 19-02 temp. grappolo: night_19_02_index_tgrap donna

- 

**Call: glm(formula = night_19_02_index_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -7.618 | -1.406 | -0.069 | 1.286 | 8.792 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 20.222943 | 0.121347 | 166.6533 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.115769 | 0.082494 | 1.4034 | 0.1606322 | |
| as.factor(gemme)[T.3] | -0.181958 | 0.082494 | -2.2057 | 0.0274933 | * |
| as.factor(dirad)[T.1] | 0.050734 | 0.082494 | 0.6150 | 0.5386095 | |
| AnnoF[T.A2009] | 0.605265 | 0.101034 | 5.9907 | 2.386e-09 | *** |
| AnnoF[T.A2010] | 0.172280 | 0.101034 | 1.7052 | 0.0882857 | . |
| as.factor(Mese)[T.7] | 2.277288 | 0.109709 | 20.7576 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.491138 | 0.109709 | 22.7068 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.466029 | 0.135060 | 3.4505 | 0.0005686 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

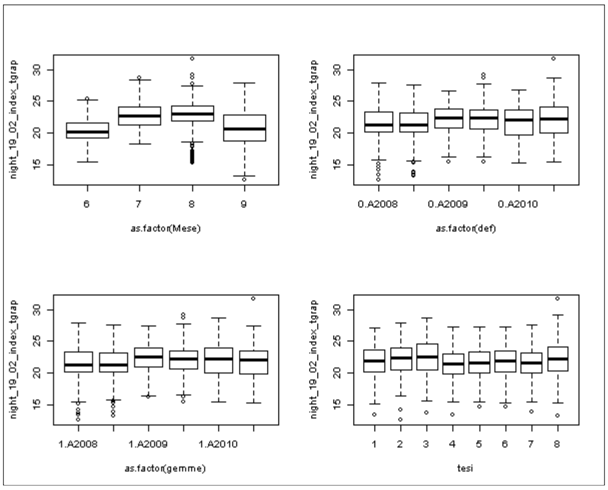
**(Dispersion parameter for gaussian family taken to be 4.32815 )**

- **Null deviance: 14295.2972 on 2543 degrees of freedom.**
- **Residual deviance: 10971.86 on 2535 degrees of freedom.**

**AIC: 10958**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.731856905387191**




## errore standard mattutino tra le ore 5-10 temp. grappolo: dmorn_stderr_5_10_tgrap donna

•

**Call: glm(formula = dmorn_stderr_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -2.08 | -0.39 | 0.03 | 0.44 | 2.85 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.878287 | 0.038863 | 48.3306 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.084896 | 0.026420 | 3.2133 | 0.0013285 | ** |
| as.factor(gemme)[T.3] | -0.135730 | 0.026420 | -5.1374 | 2.998e-07 | *** |
| as.factor(dirad)[T.1] | -0.092860 | 0.026420 | -3.5148 | 0.0004478 | *** |
| AnnoF[T.A2009] | -0.229451 | 0.032358 | -7.0911 | 1.719e-12 | *** |
| AnnoF[T.A2010] | -0.165578 | 0.032358 | -5.1171 | 3.335e-07 | *** |
| as.factor(Mese)[T.7] | 0.443965 | 0.035136 | 12.6357 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 0.705027 | 0.035136 | 20.0657 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.445855 | 0.043255 | 10.3076 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

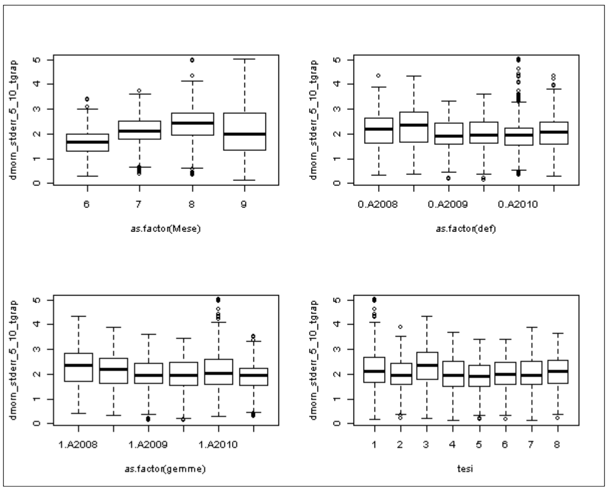
**(Dispersion parameter for gaussian family taken to be 0.4439364 )**

- **Null deviance: 1353.7239 on 2543 degrees of freedom.**
- **Residual deviance: 1125.3788 on 2535 degrees of freedom.**

**AIC: 5164.6**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.208043531647799**




## varianza mattutina tra le ore 5-10 temp. grappolo: dmorn_var_5_10_tgrap donna

•

**Call: glm(formula = dmorn_var_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -39.9 | -11.2 | -1.4 | 9.5 | 116.3 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 24.75352 | 1.00691 | 24.5837 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 2.38083 | 0.68451 | 3.4781 | 0.0005134 | *** |
| as.factor(gemme)[T.3] | -4.24428 | 0.68451 | -6.2004 | 6.554e-10 | *** |
| as.factor(dirad)[T.1] | -3.02452 | 0.68451 | -4.4185 | 1.036e-05 | *** |
| AnnoF[T.A2009] | -6.74432 | 0.83835 | -8.0447 | 1.314e-15 | *** |
| AnnoF[T.A2010] | -4.34107 | 0.83835 | -5.1781 | 2.418e-07 | *** |
| as.factor(Mese)[T.7] | 10.29948 | 0.91033 | 11.3140 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 18.42373 | 0.91033 | 20.2384 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 14.02104 | 1.12069 | 12.5110 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

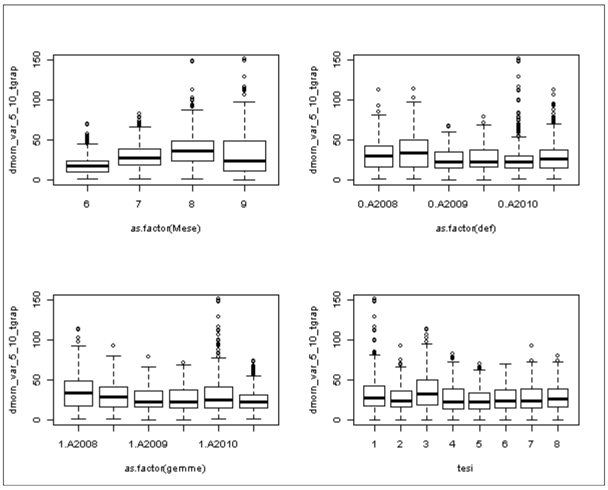
**(Dispersion parameter for gaussian family taken to be 298.0037 )**

- **Null deviance: 924041.4298 on 2543 degrees of freedom.**
- **Residual deviance: 755439.3629 on 2535 degrees of freedom.**

**AIC: 21724**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## errore standard serale tra le ore 15-20 temp. grappolo: dtwi_stderr_15_20_tgrap donna

- 

**Call: glm(formula = dtwi_stderr_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1.3547 | -0.1884 | -0.0017 | 0.2016 | 1.5859 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.0849701 | 0.0198093 | 54.7708 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.0062848 | 0.0134667 | 0.4667 | 0.6407590 | |
| as.factor(gemme)[T.3] | -0.0658818 | 0.0134667 | -4.8922 | 1.060e-06 | *** |
| as.factor(dirad)[T.1] | -0.0348439 | 0.0134667 | -2.5874 | 0.0097251 | ** |
| AnnoF[T.A2009] | -0.1450086 | 0.0164933 | -8.7920 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.0616959 | 0.0164933 | -3.7407 | 0.0001876 | *** |
| as.factor(Mese)[T.7] | 0.1430833 | 0.0179094 | 7.9893 | 2.040e-15 | *** |
| as.factor(Mese)[T.8] | 0.2942594 | 0.0179094 | 16.4305 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.4229819 | 0.0220478 | 19.1847 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

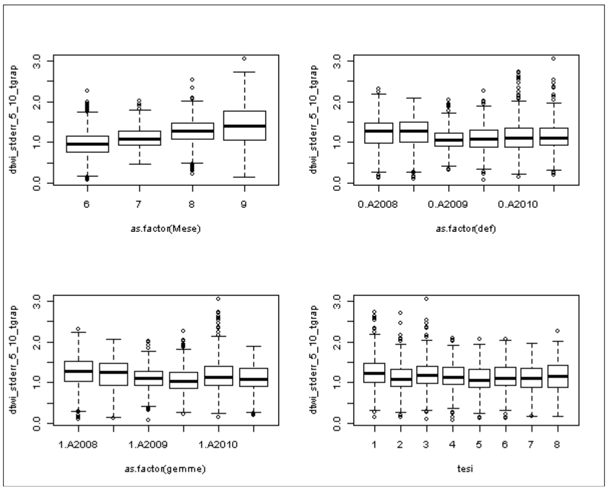
**(Dispersion parameter for gaussian family taken to be 0.1153399 )**

- **Null deviance: 359.3048 on 2543 degrees of freedom.**
- **Residual deviance: 292.3866 on 2535 degrees of freedom.**

**AIC: 1735.8**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.197101733199746**




## varianza serale tra le ore 15-20 temp. grappolo: dtwi_var_15_20_tgrap donna

-

**Call: glm(formula = dtwi_var_5_10_tgrap ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -15.00 | -2.98 | -0.62 | 2.38 | 41.14 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 8.232221 | 0.293105 | 28.0862 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.013347 | 0.199258 | 0.0670 | 0.9465985 | |
| as.factor(gemme)[T.3] | -1.035627 | 0.199258 | -5.1974 | 2.182e-07 | *** |
| as.factor(dirad)[T.1] | -0.579479 | 0.199258 | -2.9082 | 0.0036670 | ** |
| AnnoF[T.A2009] | -2.441045 | 0.244040 | -10.0026 | < 2.2e-16 | *** |
| AnnoF[T.A2010] | -0.903156 | 0.244040 | -3.7008 | 0.0002195 | *** |
| as.factor(Mese)[T.7] | 1.473721 | 0.264993 | 5.5614 | 2.957e-08 | *** |
| as.factor(Mese)[T.8] | 3.929161 | 0.264993 | 14.8274 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 6.905158 | 0.326227 | 21.1667 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

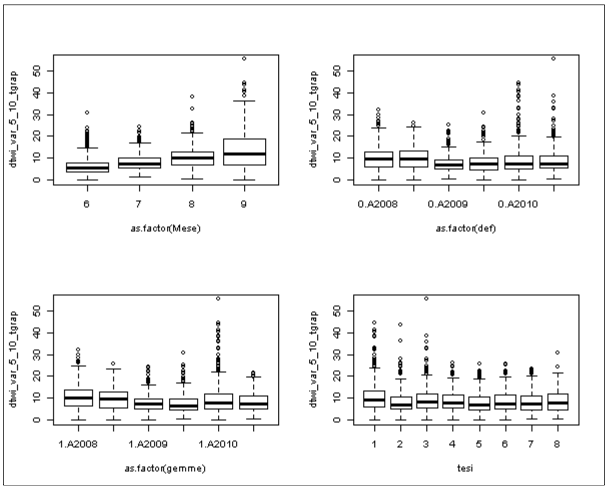
**(Dispersion parameter for gaussian family taken to be 25.25158 )**

- **Null deviance: 81122.8453 on 2543 degrees of freedom.**
- **Residual deviance: 64012.7576 on 2535 degrees of freedom.**

**AIC: 15445**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.998800275566707**




## Analisi indici giornalieri taria canopy donna

### temperatura canopy media: avg_tair donna

-

**Call: glm(formula = avg_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -8.344 | -1.340 | -0.042 | 1.319 | 6.599 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 23.870252 | 0.115987 | 205.8004 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.273861 | 0.078850 | 3.4732 | 0.000523 | *** |
| as.factor(gemme)[T.3] | -0.061554 | 0.078850 | -0.7807 | 0.435081 | |
| as.factor(dirad)[T.1] | 0.010450 | 0.078850 | 0.1325 | 0.894572 | |
| AnnoF[T.A2009] | -0.020999 | 0.096571 | -0.2174 | 0.827875 | |
| AnnoF[T.A2010] | -0.640962 | 0.096571 | -6.6372 | 3.896e-11 | *** |
| as.factor(Mese)[T.7] | 2.802603 | 0.104863 | 26.7264 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.464267 | 0.104863 | 23.4999 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.327314 | 0.129094 | 2.5355 | 0.011290 | * |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

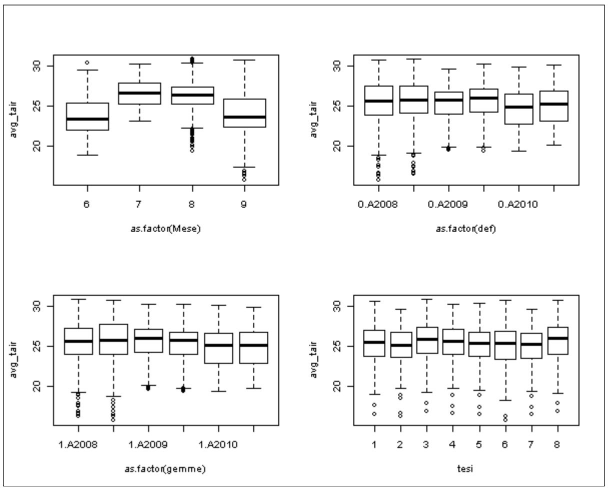
**(Dispersion parameter for gaussian family taken to be 3.954238 )**

- **Null deviance: 14295.2271 on 2543 degrees of freedom.**
- **Residual deviance: 10023.994 on 2535 degrees of freedom.**

**AIC: 10728**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.816390586291943**




### cumulata temperatura canopy: sum_tair donna

-

**Call: glm(formula = sum_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -200.2 | -32.2 | -1.0 | 31.6 | 158.4 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 572.88609 | 2.78370 | 205.8004 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 6.57265 | 1.89241 | 3.4732 | 0.000523 | *** |
| as.factor(gemme)[T.3] | -1.47735 | 1.89241 | -0.7807 | 0.435067 | |
| as.factor(dirad)[T.1] | 0.25077 | 1.89241 | 0.1325 | 0.894588 | |
| AnnoF[T.A2009] | -0.50399 | 2.31771 | -0.2175 | 0.827874 | |
| AnnoF[T.A2010] | -15.38310 | 2.31771 | -6.6372 | 3.896e-11 | *** |
| as.factor(Mese)[T.7] | 67.26249 | 2.51671 | 26.7264 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 59.14242 | 2.51671 | 23.4999 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 7.85554 | 3.09827 | 2.5355 | 0.011290 | * |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

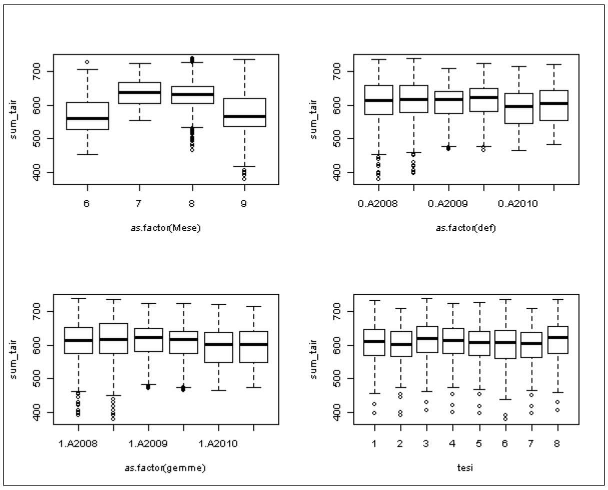
**(Dispersion parameter for gaussian family taken to be 2277.642 )**

- **Null deviance: 8234053.8983 on 2543 degrees of freedom.**
- **Residual deviance: 5773821.8782 on 2535 degrees of freedom.**

**AIC: 26898**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 1**




## escursione termica canopy: et_tair donna

-

**Call: glm(formula = et_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -11.52 | -1.94 | 0.11 | 2.03 | 9.08 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 13.19497 | 0.17623 | 74.8736 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.48091 | 0.11980 | 4.0141 | 6.139e-05 | *** |
| as.factor(gemme)[T.3] | -0.34170 | 0.11980 | -2.8521 | 0.0043778 | ** |
| as.factor(dirad)[T.1] | -0.42347 | 0.11980 | -3.5347 | 0.0004155 | *** |
| AnnoF[T.A2009] | -0.26501 | 0.14673 | -1.8061 | 0.0710232 | . |
| AnnoF[T.A2010] | -0.67649 | 0.14673 | -4.6104 | 4.218e-06 | *** |
| as.factor(Mese)[T.7] | 2.01079 | 0.15933 | 12.6205 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 2.45829 | 0.15933 | 15.4292 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 2.10827 | 0.19614 | 10.7485 | < 2.2e-16 | *** |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

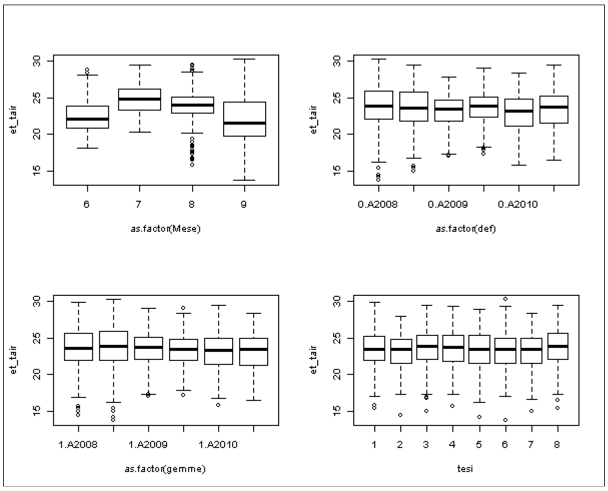
(Dispersion parameter for gaussian family taken to be 9.128522 )

- Null deviance: 26221.5817 on 2543 degrees of freedom.
- Residual deviance: 23140.8042 on 2535 degrees of freedom.

AIC: 12856

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 0.702123450575838




## media ore 03-10 temp. canopy: morning_03_10_index_tair donna

-

**Call: glm(formula = morning_03_10_index_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -7.803 | -1.469 | -0.088 | 1.409 | 7.851 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 22.667601 | 0.126665 | 178.9569 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.216201 | 0.086109 | 2.5108 | 0.012108 | * |
| as.factor(gemme)[T.3] | -0.061334 | 0.086109 | -0.7123 | 0.476357 | |
| as.factor(dirad)[T.1] | 0.033924 | 0.086109 | 0.3940 | 0.693636 | |
| AnnoF[T.A2009] | -0.309148 | 0.105462 | -2.9314 | 0.003405 | ** |
| AnnoF[T.A2010] | -0.661480 | 0.105462 | -6.2722 | 4.171e-10 | *** |
| as.factor(Mese)[T.7] | 2.283779 | 0.114516 | 19.9428 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 1.631566 | 0.114516 | 14.2474 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | -0.213806 | 0.140979 | -1.5166 | 0.129496 | |

--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

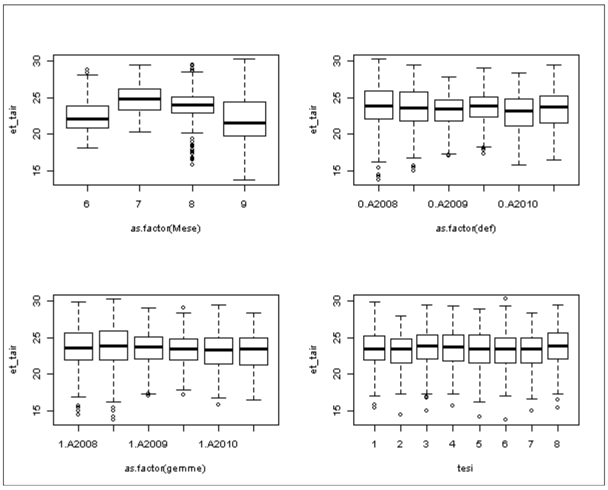
(Dispersion parameter for gaussian family taken to be 4.7158 )

- Null deviance: 14889.0051 on 2543 degrees of freedom.
- Residual deviance: 11954.5526 on 2535 degrees of freedom.

AIC: 11176

Number of Fisher Scoring iterations: 2

Pseudo Rsquared: 0.702123450575838



## media ore 11-18 temp. canopy: diurnal_11_18_index_tair donna

- 

**Call: glm(formula = diurnal_11_18_index_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -13.68 | -1.39 | 0.26 | 1.58 | 7.17 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 28.48287 | 0.15691 | 181.5221 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.50123 | 0.10667 | 4.6989 | 2.756e-06 | *** |
| as.factor(gemme)[T.3] | -0.26189 | 0.10667 | -2.4551 | 0.01415 | * |
| as.factor(dirad)[T.1] | -0.19728 | 0.10667 | -1.8495 | 0.06451 | . |
| AnnoF[T.A2009] | 0.22535 | 0.13064 | 1.7249 | 0.08466 | . |
| AnnoF[T.A2010] | -0.82314 | 0.13064 | -6.3006 | 3.485e-10 | *** |
| as.factor(Mese)[T.7] | 3.88183 | 0.14186 | 27.3635 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 3.78781 | 0.14186 | 26.7008 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 1.18108 | 0.17464 | 6.7629 | 1.674e-11 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

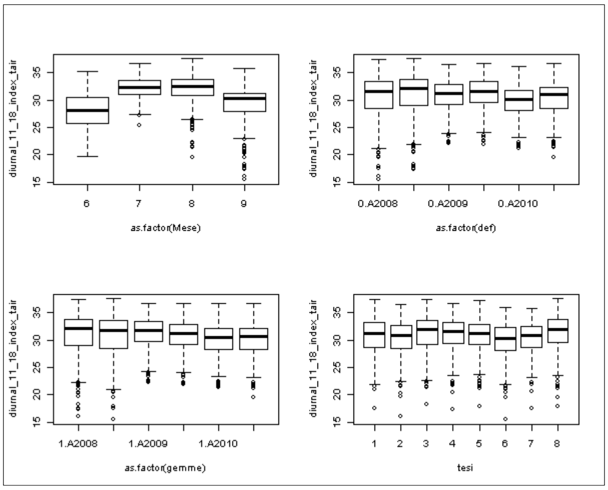
**(Dispersion parameter for gaussian family taken to be 7.236851 )**

- **Null deviance: 26700.4131 on 2543 degrees of freedom.**
- **Residual deviance: 18345.4167 on 2535 degrees of freedom.**

**AIC: 12266**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.962555953352373**



## media ore 19-02 temp. canopy: night_19_02_index_tair donna

- 

**Call: glm(formula = night_19_02_index_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -8.107 | -1.399 | 0.047 | 1.264 | 8.109 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 20.460295 | 0.121236 | 168.7638 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.104147 | 0.082418 | 1.2636 | 0.20648 | |
| as.factor(gemme)[T.3] | 0.138560 | 0.082418 | 1.6812 | 0.09285 | . |
| as.factor(dirad)[T.1] | 0.194706 | 0.082418 | 2.3624 | 0.01823 | * |
| AnnoF[T.A2009] | 0.020798 | 0.100942 | 0.2060 | 0.83677 | |
| AnnoF[T.A2010] | -0.438267 | 0.100942 | -4.3418 | 1.469e-05 | *** |
| as.factor(Mese)[T.7] | 2.242205 | 0.109608 | 20.4565 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 1.973420 | 0.109608 | 18.0043 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.014662 | 0.134936 | 0.1087 | 0.91348 | |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

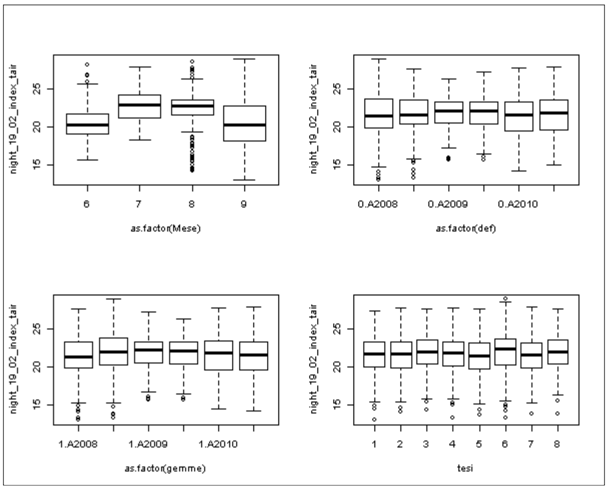
**(Dispersion parameter for gaussian family taken to be 4.320225 )**

- **Null deviance: 13867.0899 on 2543 degrees of freedom.**
- **Residual deviance: 10951.7697 on 2535 degrees of freedom.**

**AIC: 10953**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.685021587778185**




## errore standard mattutino tra le ore 5-10 temp. canopy: dmorn_stderr_5_10_tair donna

-

**Call: glm(formula = dmorn_stderr_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1.861 | -0.348 | 0.042 | 0.410 | 1.942 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 1.753548 | 0.035835 | 48.9342 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.076941 | 0.024361 | 3.1584 | 0.0016053 | ** |
| as.factor(gemme)[T.3] | -0.062029 | 0.024361 | -2.5462 | 0.0109484 | * |
| as.factor(dirad)[T.1] | -0.058735 | 0.024361 | -2.4110 | 0.0159795 | * |
| AnnoF[T.A2009] | -0.080773 | 0.029836 | -2.7072 | 0.0068306 | ** |
| AnnoF[T.A2010] | -0.099154 | 0.029836 | -3.3233 | 0.0009023 | *** |
| as.factor(Mese)[T.7] | 0.384887 | 0.032398 | 11.8800 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 0.536522 | 0.032398 | 16.5604 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.288079 | 0.039884 | 7.2229 | 6.7e-13 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

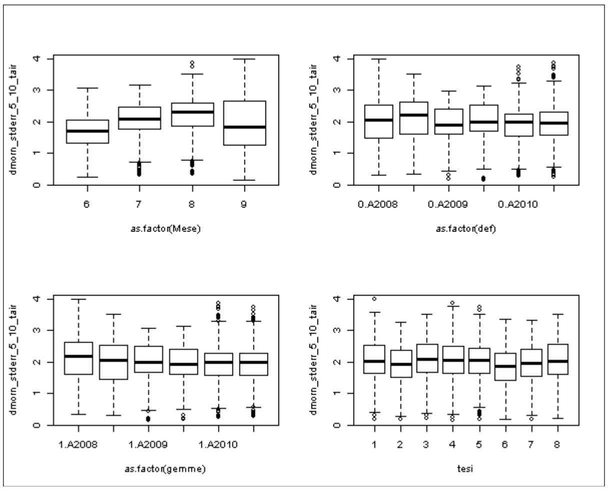
**(Dispersion parameter for gaussian family taken to be 0.3774427 )**

- **Null deviance: 1079.3491 on 2543 degrees of freedom.**
- **Residual deviance: 956.8171 on 2535 degrees of freedom.**

**AIC: 4751.8**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.136002768382631**




## varianza mattutina tra le ore 5-10 temp. canopy: dmorn_var_5_10_tair donna

- 

**Call: glm(formula = dmorn_var_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -32.1 | -9.8 | -1.0 | 8.6 | 65.3 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 20.91597 | 0.83271 | 25.1180 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 1.93936 | 0.56609 | 3.4259 | 0.0006225 | *** |
| as.factor(gemme)[T.3] | -1.49636 | 0.56609 | -2.6433 | 0.0082600 | ** |
| as.factor(dirad)[T.1] | -1.46194 | 0.56609 | -2.5825 | 0.0098634 | ** |
| AnnoF[T.A2009] | -2.67488 | 0.69332 | -3.8581 | 0.0001171 | *** |
| AnnoF[T.A2010] | -2.92817 | 0.69332 | -4.2234 | 2.491e-05 | *** |
| as.factor(Mese)[T.7] | 8.60289 | 0.75284 | 11.4272 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 12.94242 | 0.75284 | 17.1914 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 8.99789 | 0.92681 | 9.7085 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

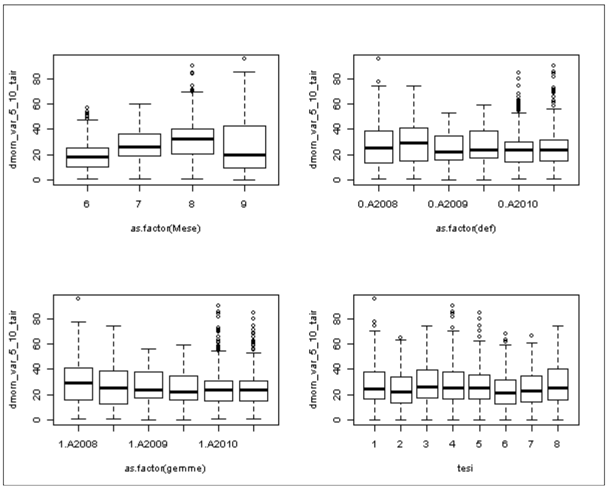
**(Dispersion parameter for gaussian family taken to be 203.8108 )**

- **Null deviance: 589185.85 on 2543 degrees of freedom.**
- **Residual deviance: 516660.2814 on 2535 degrees of freedom.**

**AIC: 20757**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.999999999999584**




## errore standard serale tra le ore 15-20 temp. canopy: dtwi_stderr_15_20_tair donna

- 

**Call: glm(formula = dtwi_stderr_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data = donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -1.2308 | -0.1914 | -0.0032 | 0.2016 | 1.0857 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 0.972435 | 0.019277 | 50.4443 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 0.083845 | 0.013105 | 6.3979 | 1.870e-10 | *** |
| as.factor(gemme)[T.3] | -0.066961 | 0.013105 | -5.1095 | 3.470e-07 | *** |
| as.factor(dirad)[T.1] | -0.063659 | 0.013105 | -4.8576 | 1.261e-06 | *** |
| AnnoF[T.A2009] | 0.027840 | 0.016050 | 1.7346 | 0.08294 | . |
| AnnoF[T.A2010] | -0.066308 | 0.016050 | -4.1313 | 3.725e-05 | *** |
| as.factor(Mese)[T.7] | 0.171509 | 0.017428 | 9.8407 | < 2.2e-16 | *** |
| as.factor(Mese)[T.8] | 0.306910 | 0.017428 | 17.6097 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 0.368312 | 0.021456 | 17.1661 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

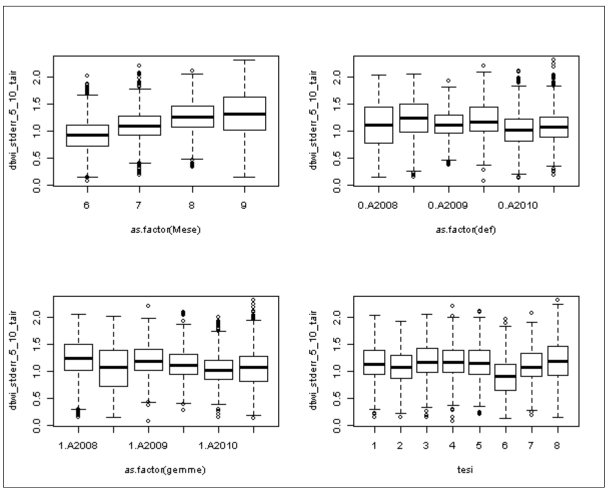
**(Dispersion parameter for gaussian family taken to be 0.1092291 )**

- **Null deviance: 337.7482 on 2543 degrees of freedom.**
- **Residual deviance: 276.8958 on 2535 degrees of freedom.**

**AIC: 1597.3**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.190112581910978**




## varianza serale tra le ore 15-20 temp. canopy: dtwi_var_15_20_tairdonna

- 

**Call: glm(formula = dtwi_var_5_10_tair ~ as.factor(def) + as.factor(gemme) + as.factor(dirad) + AnnoF + as.factor(Mese), family = gaussian(identity), data =**

**donna_new_indici, subset = ((jd > 153) & (jd < 260)))**

**Deviance Residuals:**

| Min | 1Q | Median | 3Q | Max |
|---|---|---|---|---|
| -12.91 | -2.94 | -0.59 | 2.38 | 21.60 |

**Coefficients:**

| | Estimate | Std. Error | t value | Pr(>\|t\|) | |
|---|---|---|---|---|---|
| (Intercept) | 6.56624 | 0.26722 | 24.5726 | < 2.2e-16 | *** |
| as.factor(def)[T.1] | 1.12816 | 0.18166 | 6.2103 | 6.161e-10 | *** |
| as.factor(gemme)[T.3] | -0.76437 | 0.18166 | -4.2077 | 2.670e-05 | *** |
| as.factor(dirad)[T.1] | -0.71778 | 0.18166 | -3.9513 | 7.986e-05 | *** |
| AnnoF[T.A2009] | -0.12790 | 0.22249 | -0.5748 | 0.5654 | |
| AnnoF[T.A2010] | -1.23873 | 0.22249 | -5.5677 | 2.853e-08 | *** |
| as.factor(Mese)[T.7] | 1.95668 | 0.24159 | 8.0992 | 8.500e-16 | *** |
| as.factor(Mese)[T.8] | 3.96088 | 0.24159 | 16.3952 | < 2.2e-16 | *** |
| as.factor(Mese)[T.9] | 5.44208 | 0.29741 | 18.2980 | < 2.2e-16 | *** |

**--- Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1**

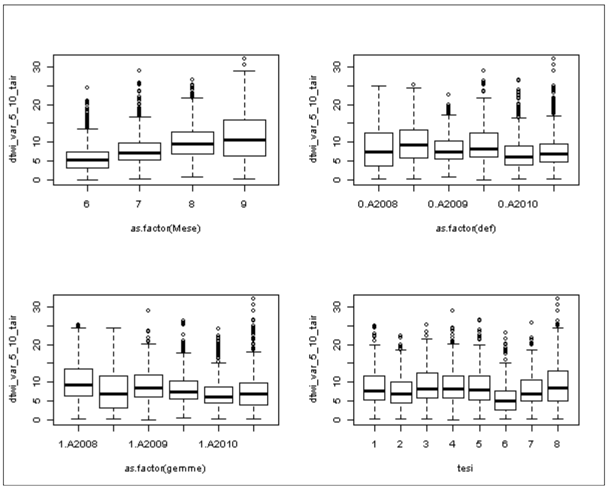
**(Dispersion parameter for gaussian family taken to be 20.98797 )**

- **Null deviance: 64773.9222 on 2543 degrees of freedom.**
- **Residual deviance: 53204.4966 on 2535 degrees of freedom.**

**AIC: 14974**

**Number of Fisher Scoring iterations: 2**

**Pseudo Rsquared: 0.989408782676975**



# Allegato 2.1 – Anova Multiscala Sangiovese

# ANOVA PER VIGNETI SANGIOVESE (BROLIO E CORTIGLIANO) NEGLI ANNI 2008-2009-2010

▼General Linear Model

## IBIMET 1 2009-2010

Data for the following results were selected according to
SELECT (VARIETA$ = 'Sangiovese') AND (ANNO <> 2008)

Effects coding used for categorical variables in model.
The categorical values encountered during processing are

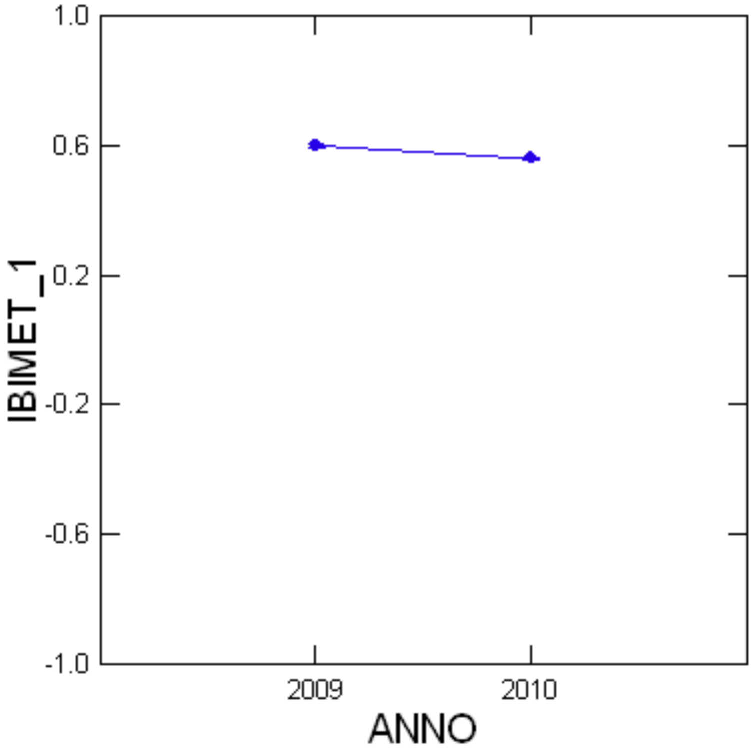
| Variables | Levels | | | |
|---|---|---|---|---|
| ANNO (2 levels) | 2,009.000 | 2,010.000 | | |
| LOCALITA$ (2 levels) | Br | Co | | |
| BLOCCO (4 levels) | 1.000 | 2.000 | 3.000 | 4.000 |
| N_GEMME$ (2 levels) | C0 | C1 | | |
| DEFOGL$ (2 levels) | A0 | A1 | | |
| DIRAD$ (2 levels) | D0 | D1 | | |

| | |
|---|---|
| Dependent Variable | IBIMET_1 |
| N | 128 |
| Multiple R | 0.989 |
| Squared Multiple R | 0.978 |

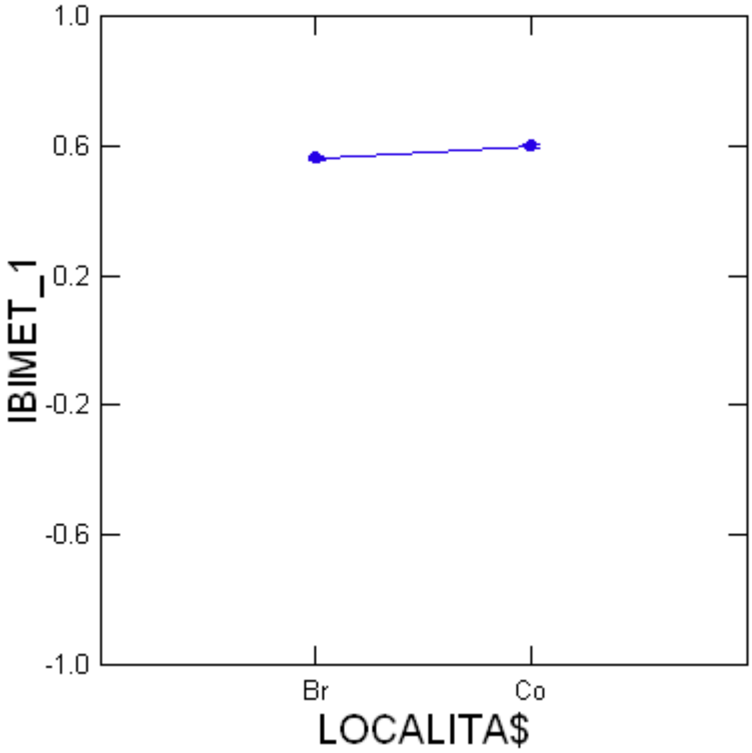
**Analysis of Variance**

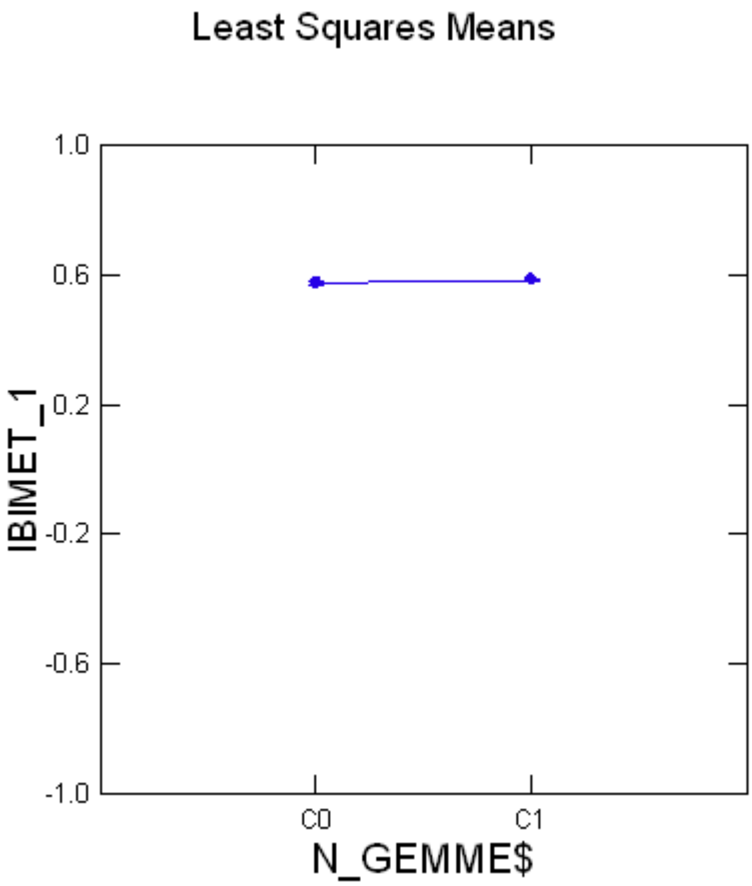
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.030 | 1 | 0.030 | 81.565 | 0.000 |
| LOCALITA$ | 0.025 | 1 | 0.025 | 68.392 | 0.000 |
| N_GEMME$ | 0.002 | 1 | 0.002 | 5.288 | 0.024 |
| DEFOGL$ | 0.035 | 1 | 0.035 | 95.441 | 0.000 |
| DIRAD$ | 0.000 | 1 | 0.000 | 0.890 | 0.348 |
| LOCALITA$*ANNO | 0.683 | 1 | 0.683 | 1,836.044 | 0.000 |
| N_GEMME$*ANNO | 0.000 | 1 | 0.000 | 0.005 | 0.943 |
| DEFOGL$*ANNO | 0.008 | 1 | 0.008 | 20.333 | 0.000 |
| DIRAD$*ANNO | 0.000 | 1 | 0.000 | 0.403 | 0.527 |
| N_GEMME$*LOCALITA$ | 0.002 | 1 | 0.002 | 4.764 | 0.031 |
| DEFOGL$*LOCALITA$ | 0.001 | 1 | 0.001 | 1.457 | 0.230 |
| DIRAD$*LOCALITA$ | 0.000 | 1 | 0.000 | 1.159 | 0.284 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.129 | 0.720 |
| DIRAD$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.925 | 0.338 |
| DIRAD$*DEFOGL$ | 0.003 | 1 | 0.003 | 9.057 | 0.003 |
| BLOCCO(LOCALITA$) | 0.299 | 6 | 0.050 | 133.988 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.011 | 6 | 0.002 | 4.771 | 0.000 |
| Error | 0.037 | 100 | 0.000 | | |

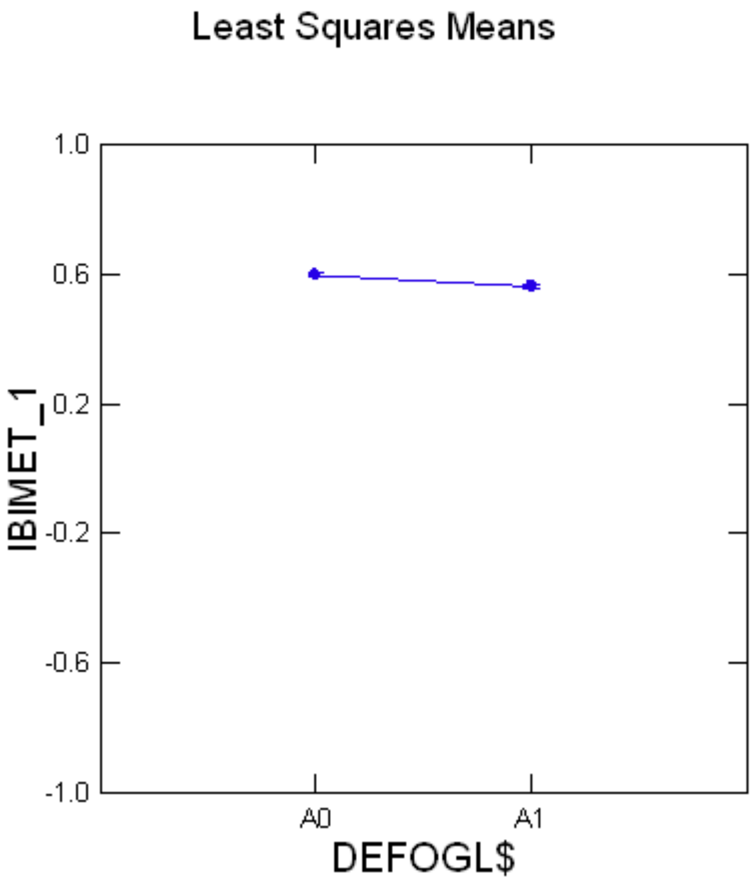
Least Squares Means



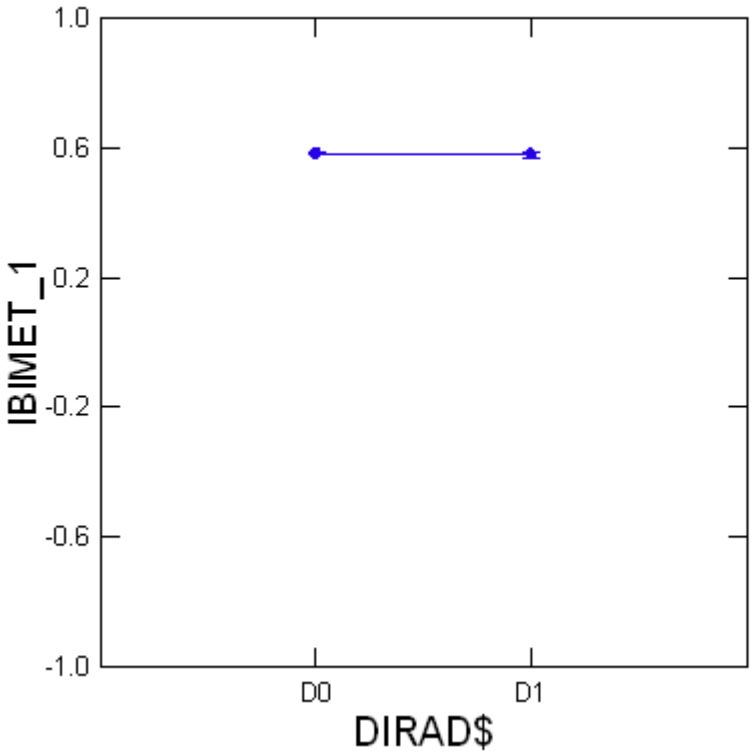

Least Squares Means



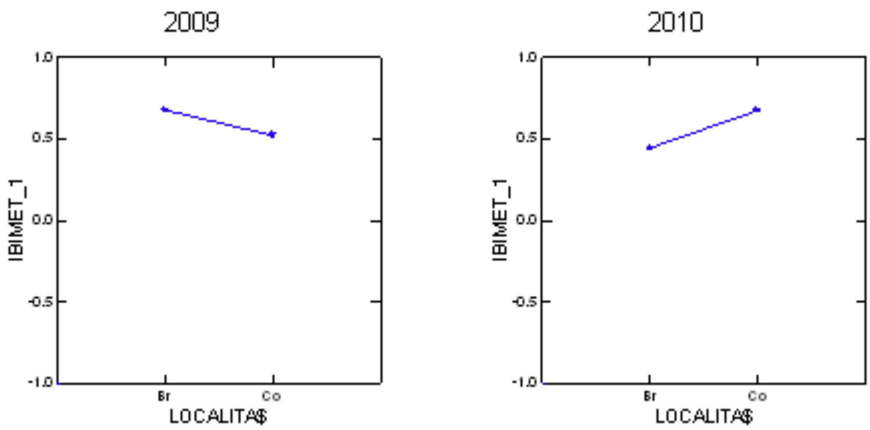

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_1
C0
C1
N_GEMME$

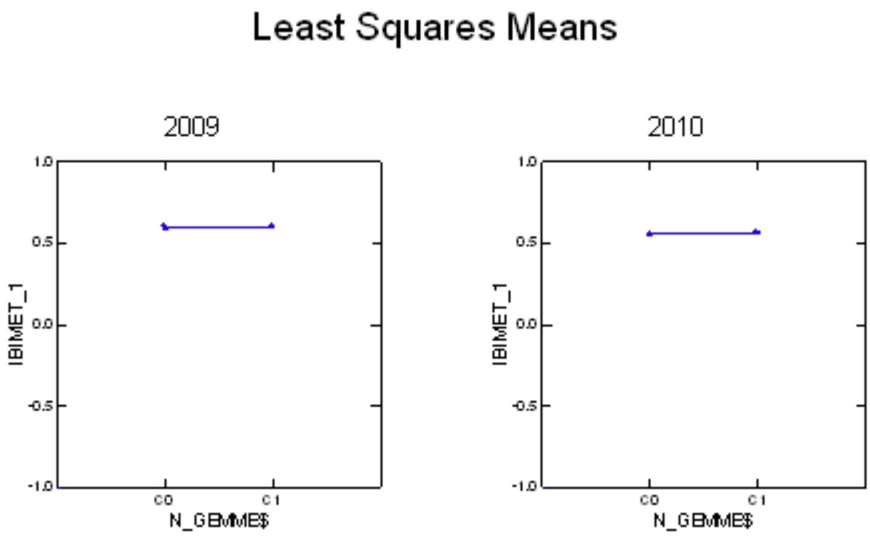

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_1
A0
A1
DEFOGL$

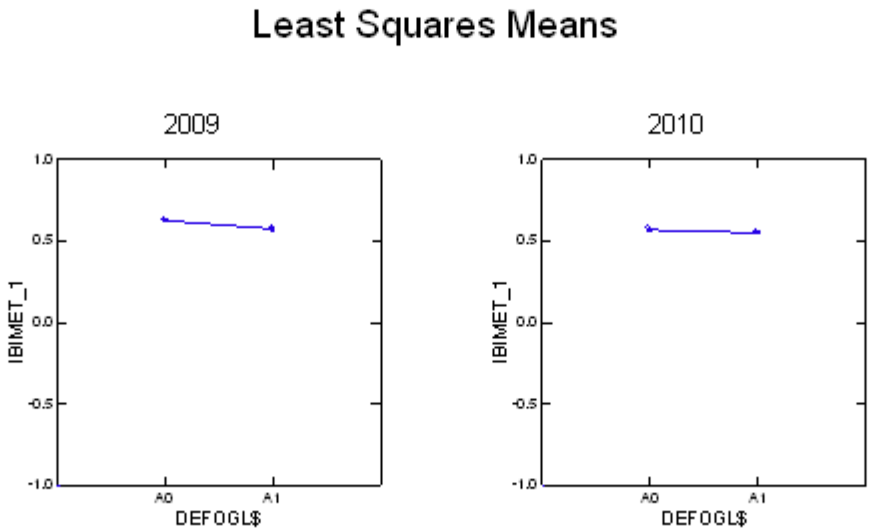
## Least Squares Means

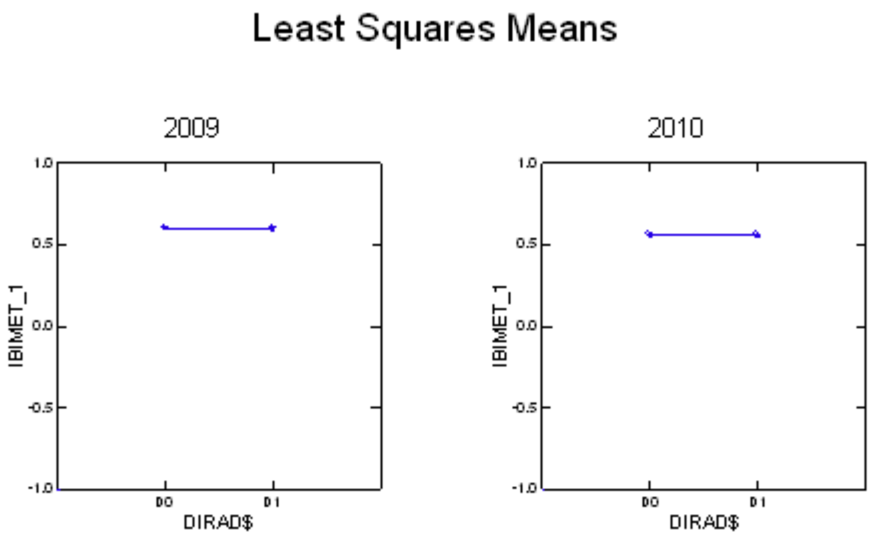



## Least Squares Means

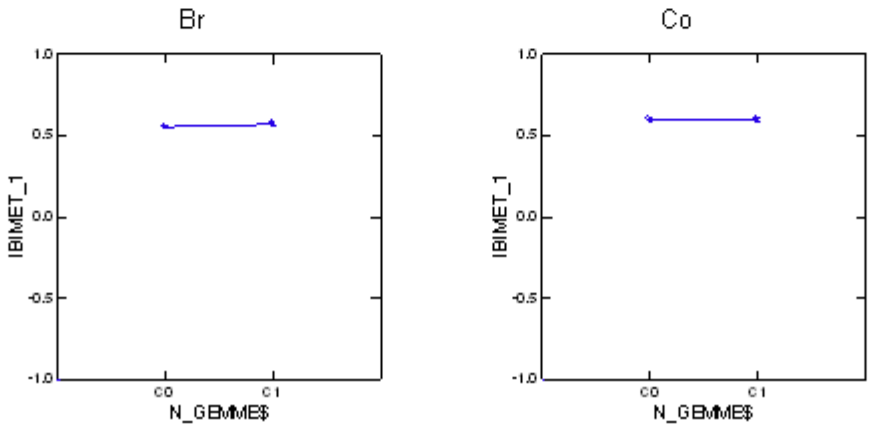



Least Squares Means
2009
2010
1.0
0.5
0.0
-0.5
-1.0
IBIMET_1
C0
C1
N_GEMME$

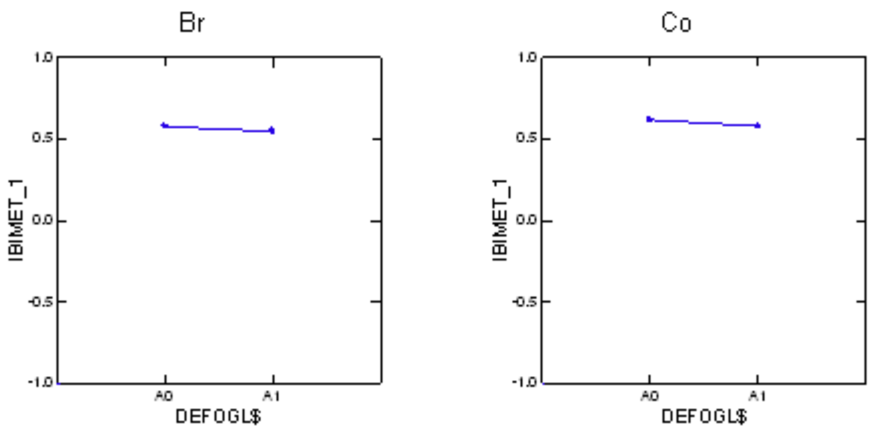

Least Squares Means
2009
2010
1.0
0.5
0.0
-0.5
-1.0
IBIMET_1
A0
A1
DEFOGL$


Least Squares Means
2009
2010
1.0
0.5
0.0
-0.5
-1.0
IBIMET_1
D0
D1
DIRAD$

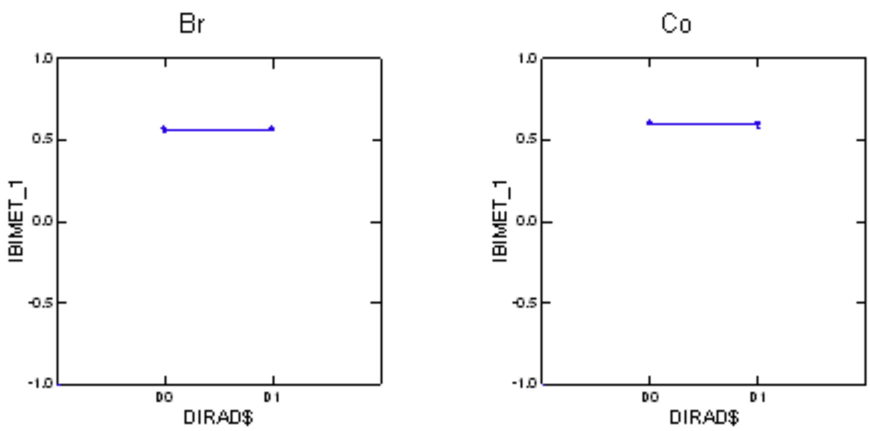
## Least Squares Means



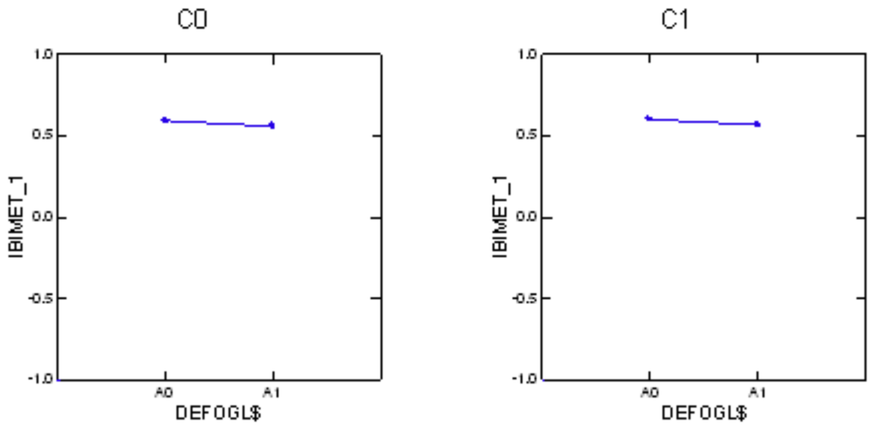

## Least Squares Means



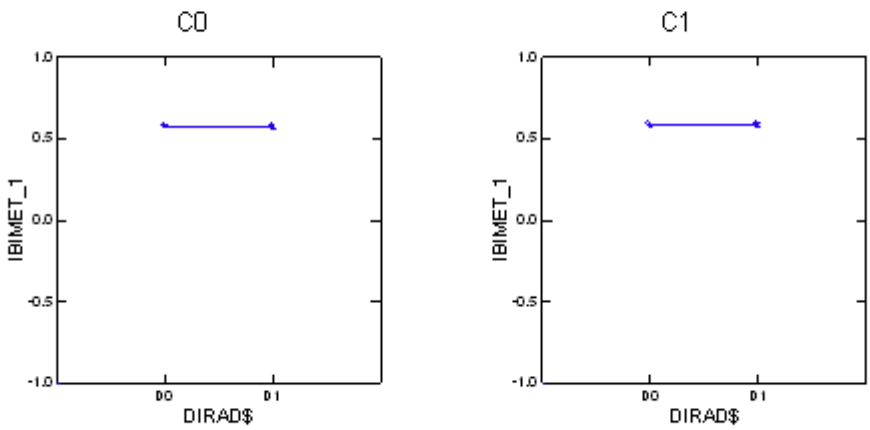

## Least Squares Means



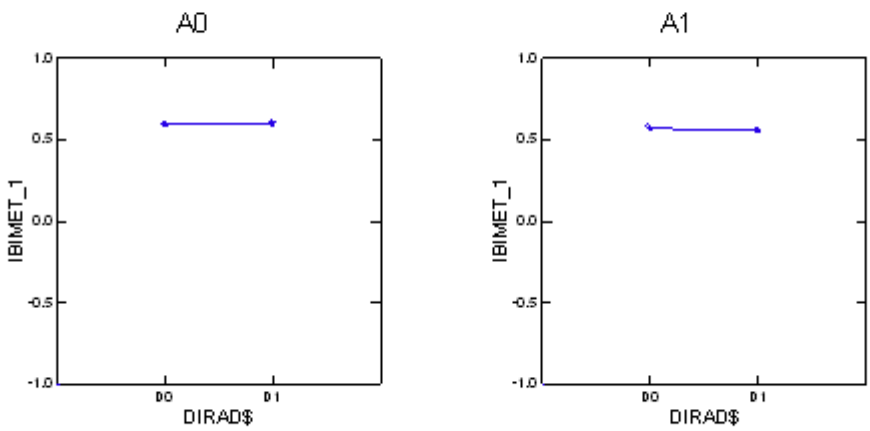
## Least Squares Means

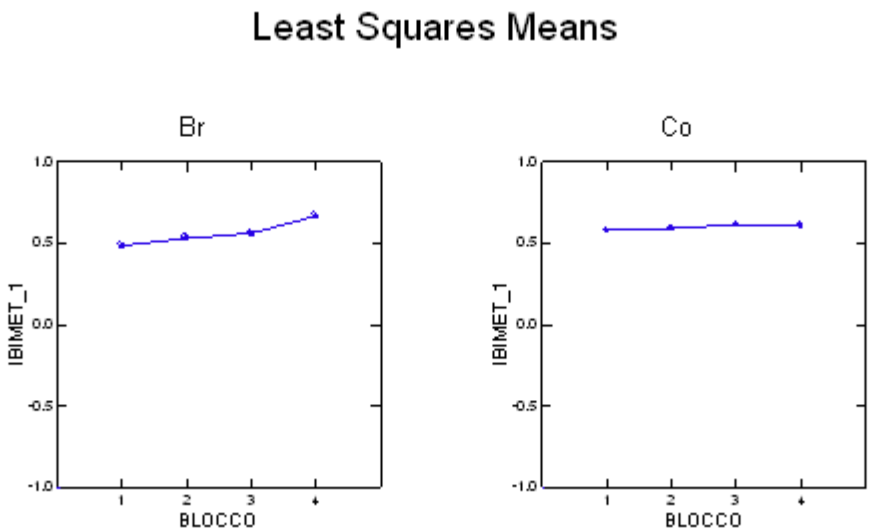


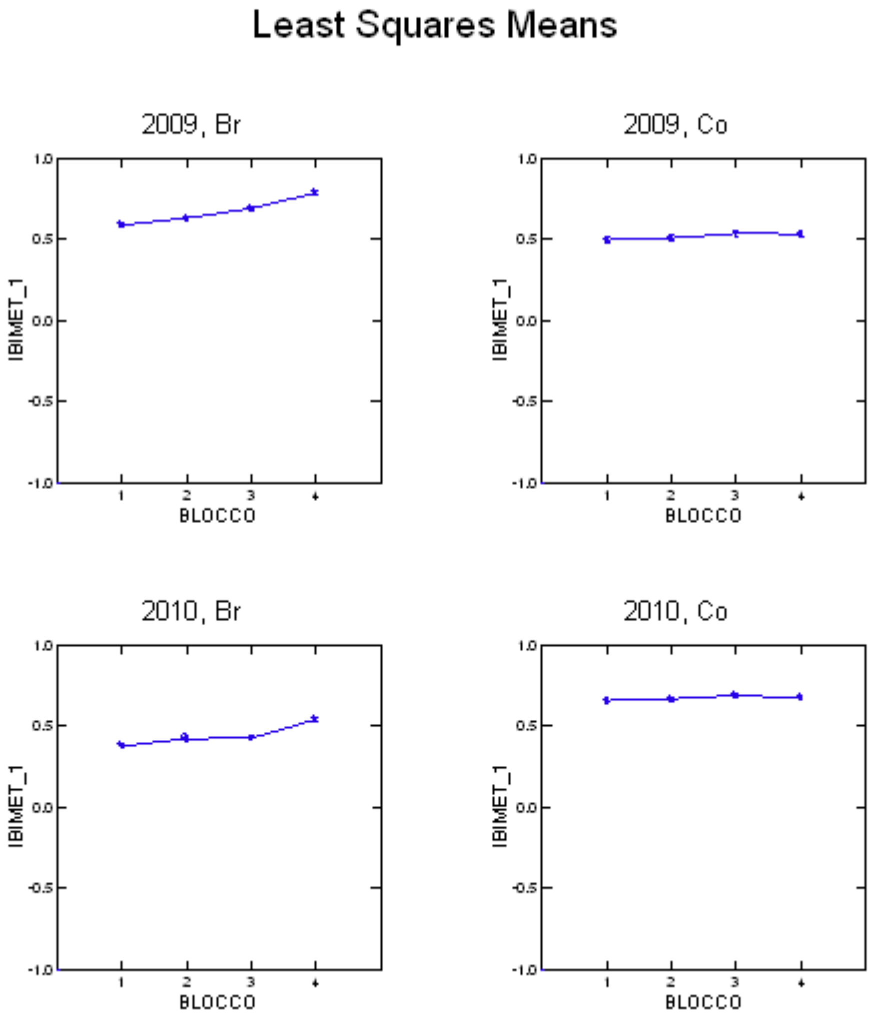

## Least Squares Means




## Least Squares Means






| | |
|---|---|
| Durbin-Watson D Statistic | 1.923 |
| First Order Autocorrelation | 0.027 |

**Information Criteria**

| | |
|---|---|
| AIC | -621.172 |
| AIC (Corrected) | -603.417 |
| Schwarz's BIC | -538.463 |

## ▼General Linear Model

## IBIMET2 2008-2009-2010

Data for the following results were selected according to
SELECT (VARIETA$ = 'Sangiovese')

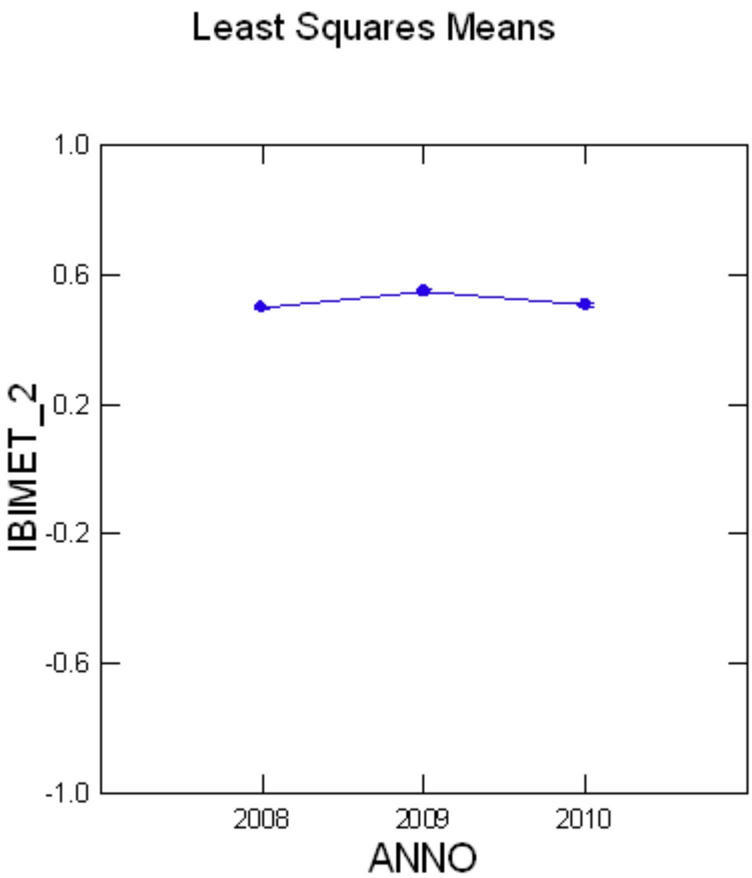
Effects coding used for categorical variables in model.
The categorical values encountered during processing are

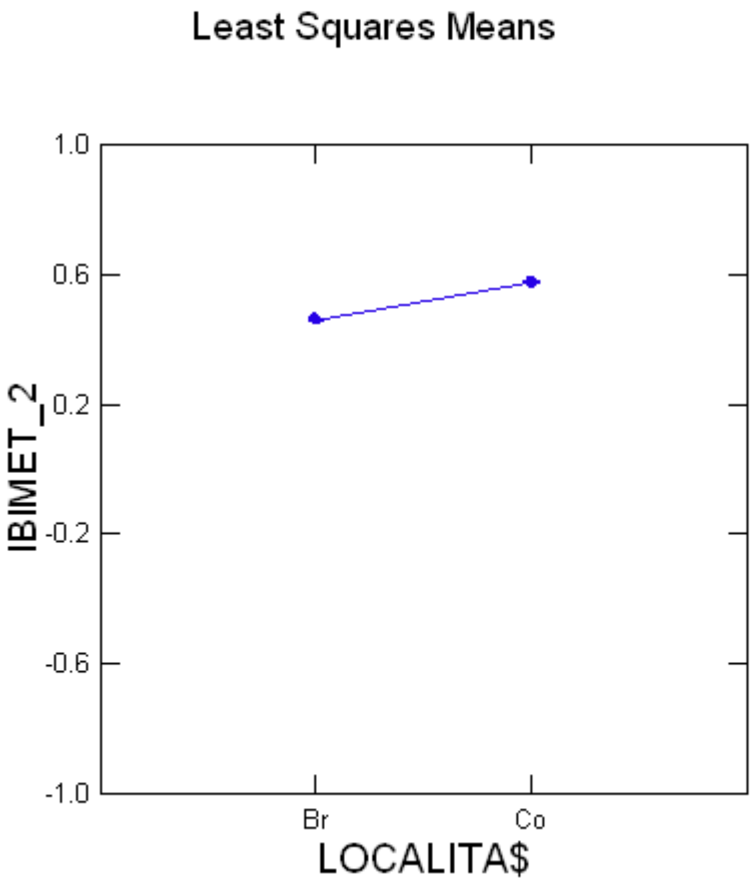
| Variables | Levels | | | |
|---|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 | |
| LOCALITA$ (2 levels) | Br | Co | | |
| BLOCCO (4 levels) | 1.000 | 2.000 | 3.000 | 4.000 |
| N_GEMME$ (2 levels) | C0 | C1 | | |
| DEFOGL$ (2 levels) | A0 | A1 | | |
| DIRAD$ (2 levels) | D0 | D1 | | |

| | |
|---|---|
| Dependent Variable | IBIMET_2 |
| N | 192 |
| Multiple R | 0.990 |
| Squared Multiple R | 0.979 |

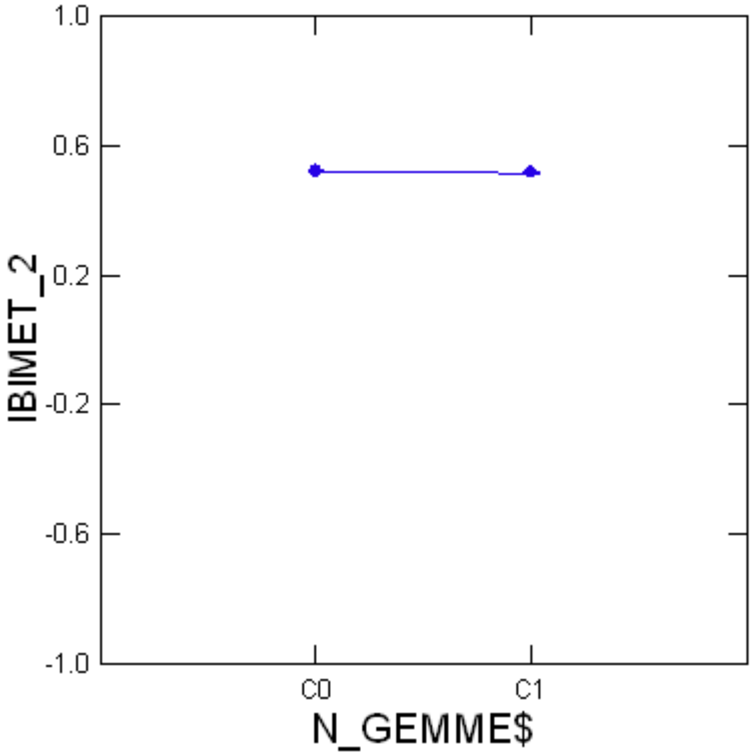
**Analysis of Variance**

| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.057 | 2 | 0.028 | 93.758 | 0.000 |
| LOCALITA$ | 0.492 | 1 | 0.492 | 1,624.094 | 0.000 |
| N_GEMME$ | 0.001 | 1 | 0.001 | 3.974 | 0.048 |
| DEFOGL$ | 0.000 | 1 | 0.000 | 0.494 | 0.483 |
| DIRAD$ | 0.001 | 1 | 0.001 | 2.208 | 0.139 |
| LOCALITA$*ANNO | 0.397 | 2 | 0.199 | 656.560 | 0.000 |
| N_GEMME$*ANNO | 0.000 | 2 | 0.000 | 0.470 | 0.626 |
| DEFOGL$*ANNO | 0.000 | 2 | 0.000 | 0.529 | 0.590 |
| DIRAD$*ANNO | 0.000 | 2 | 0.000 | 0.114 | 0.892 |
| N_GEMME$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.322 | 0.571 |
| DEFOGL$*LOCALITA$ | 0.001 | 1 | 0.001 | 1.947 | 0.165 |
| DIRAD$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.108 | 0.743 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.017 | 0.897 |
| DIRAD$*N_GEMME$ | 0.001 | 1 | 0.001 | 1.976 | 0.162 |
| DIRAD$*DEFOGL$ | 0.000 | 1 | 0.000 | 0.655 | 0.420 |
| BLOCCO(LOCALITA$) | 0.776 | 6 | 0.129 | 427.216 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.023 | 12 | 0.002 | 6.287 | 0.000 |
| Error | 0.046 | 153 | 0.000 | | |

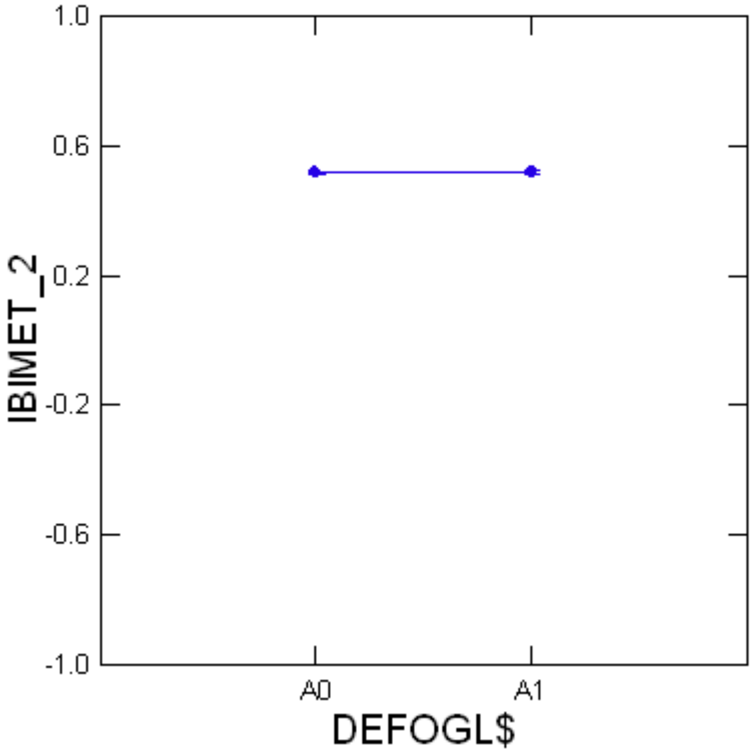

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_2
2008
2009
2010
ANNO


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_2
Br
Co
LOCALITA$

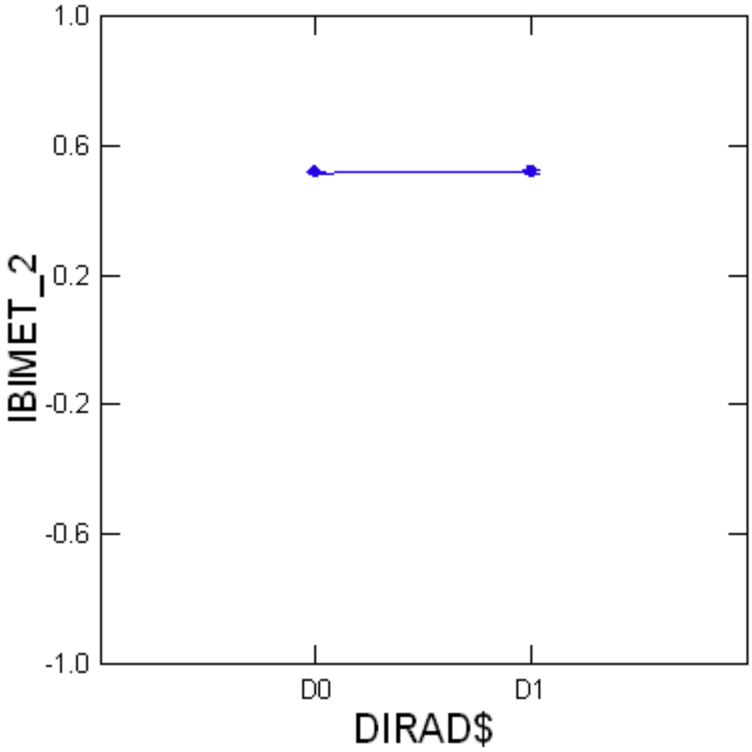
Least Squares Means



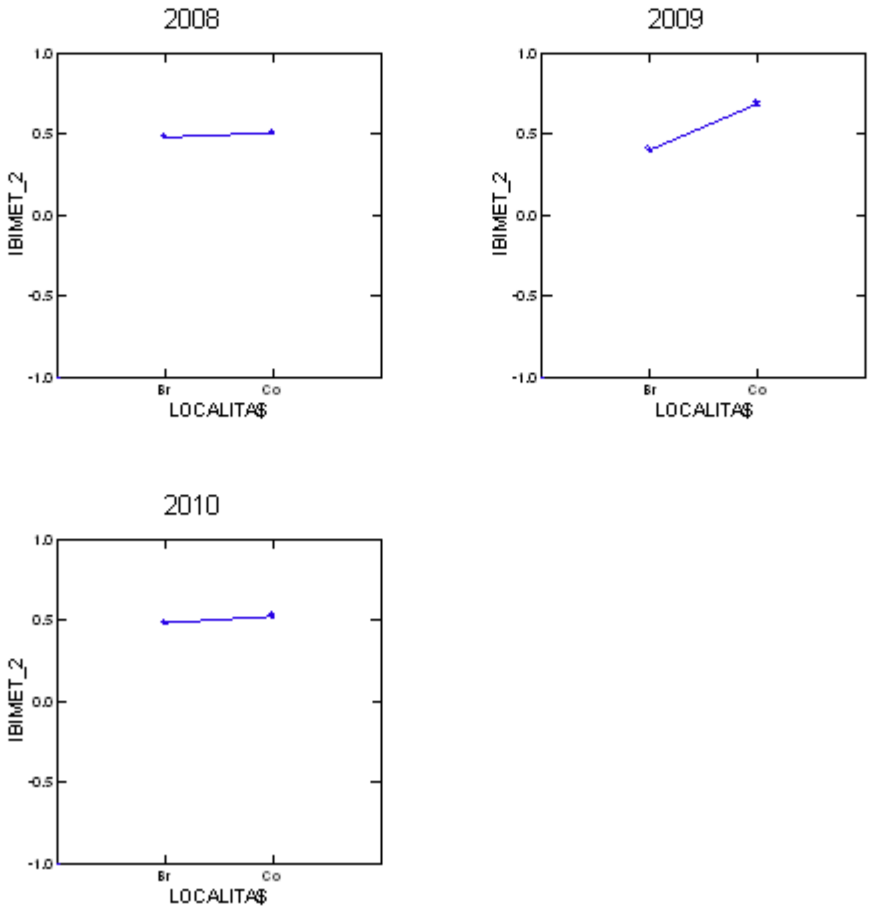

Least Squares Means



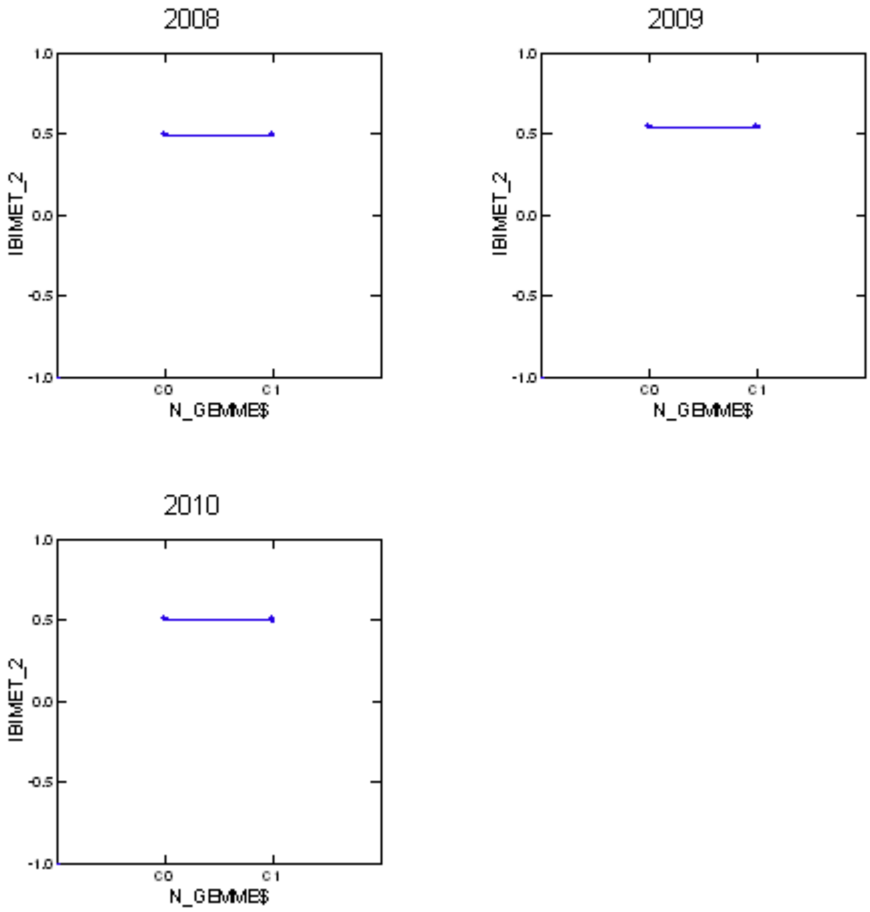
Least Squares Means



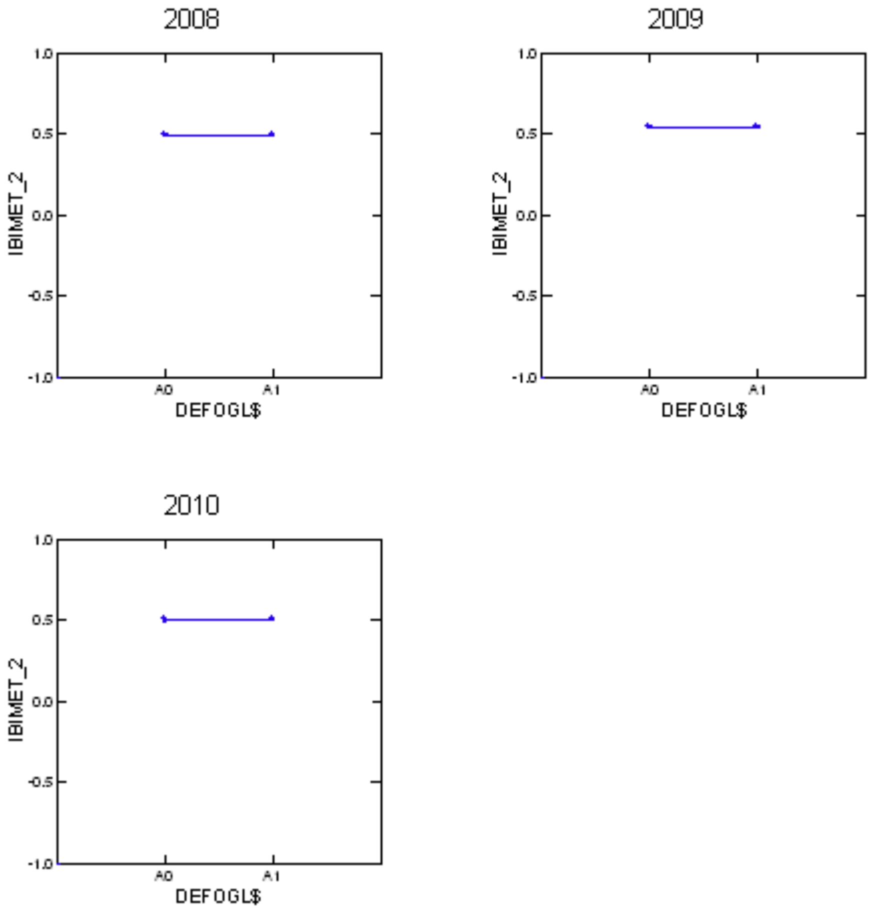
# Least Squares Means



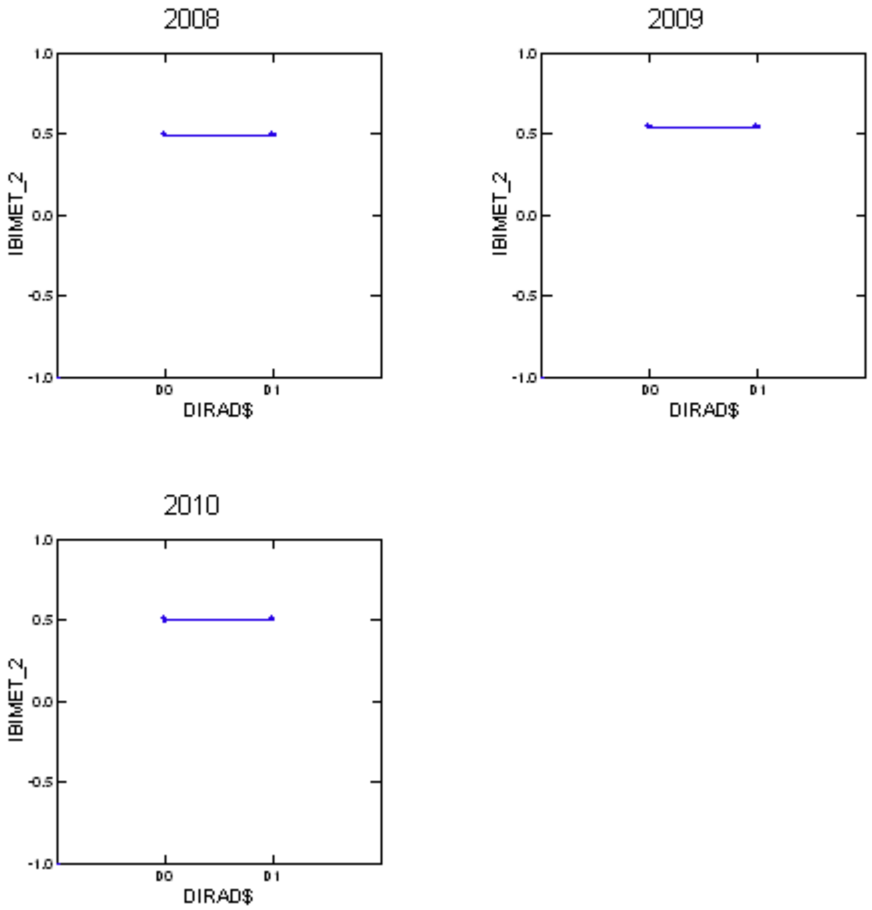
# Least Squares Means



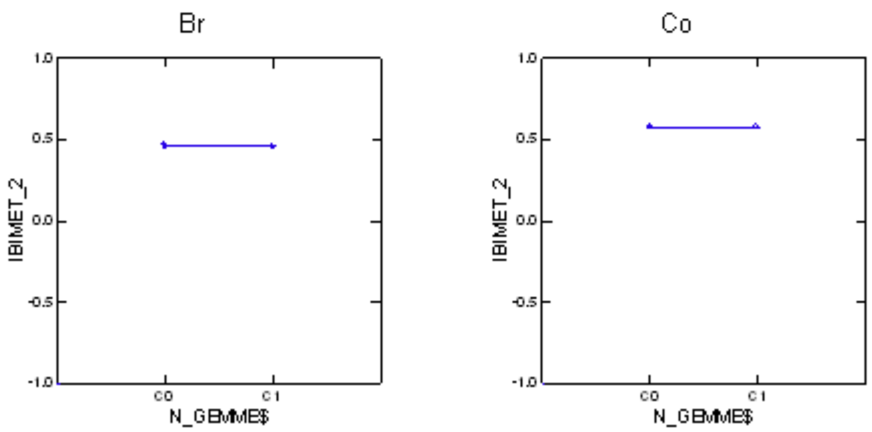
# Least Squares Means



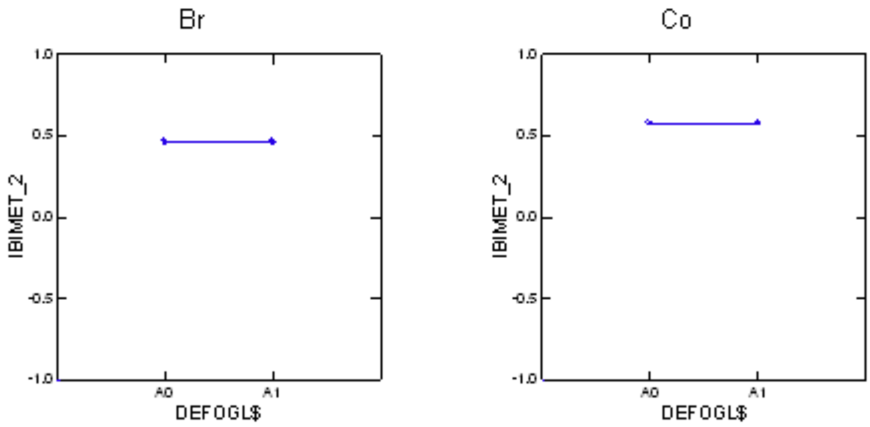
## Least Squares Means



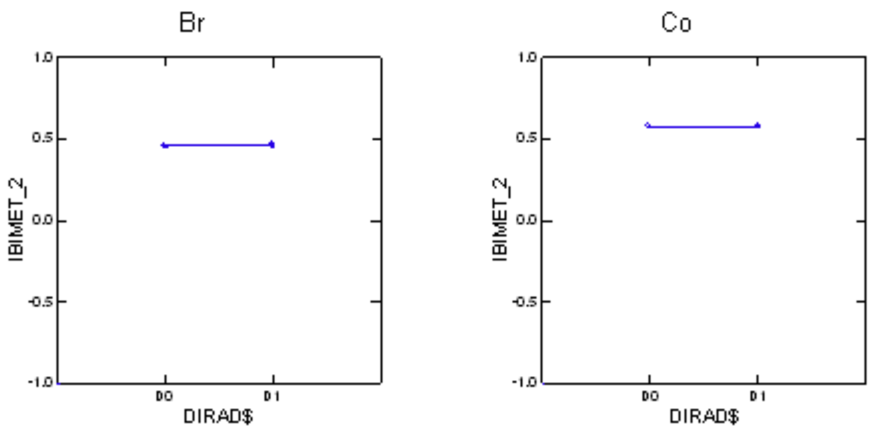

## Least Squares Means



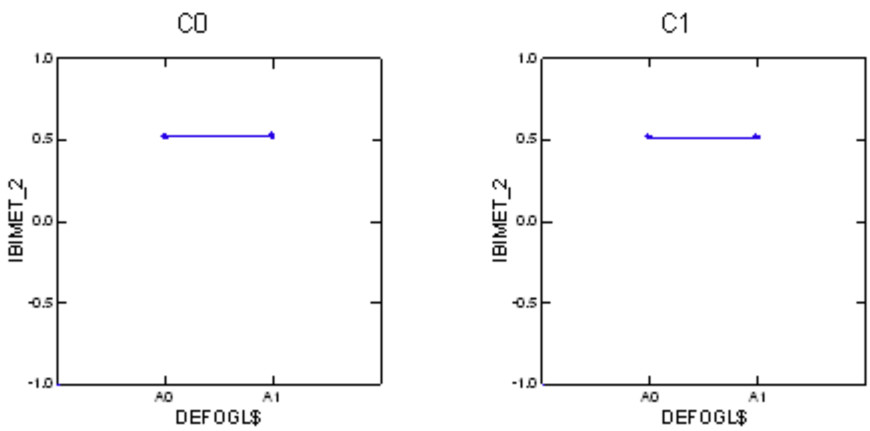
## Least Squares Means

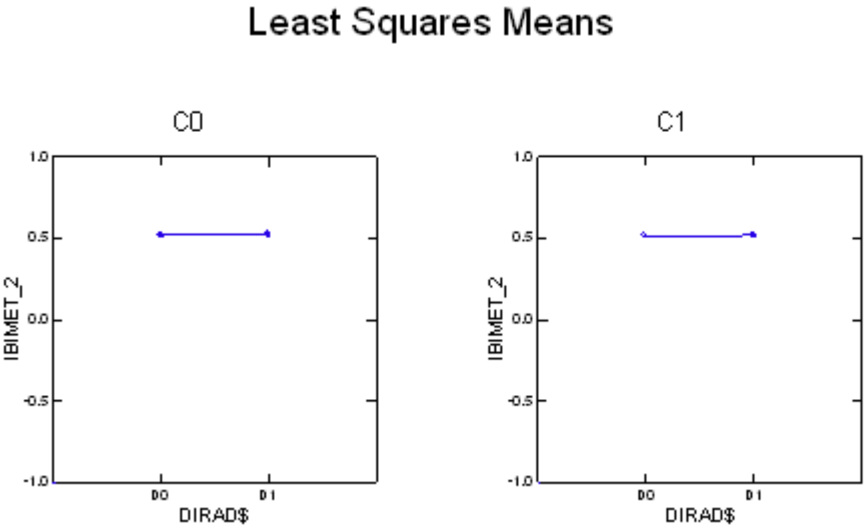


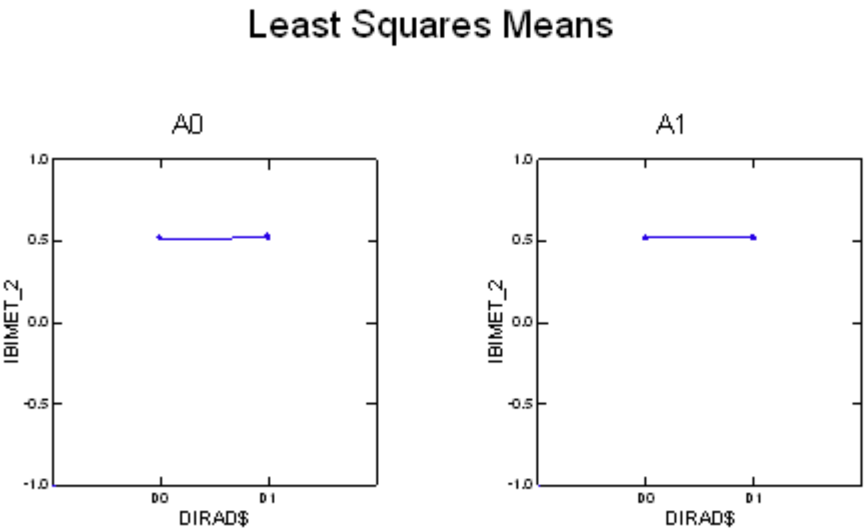

## Least Squares Means

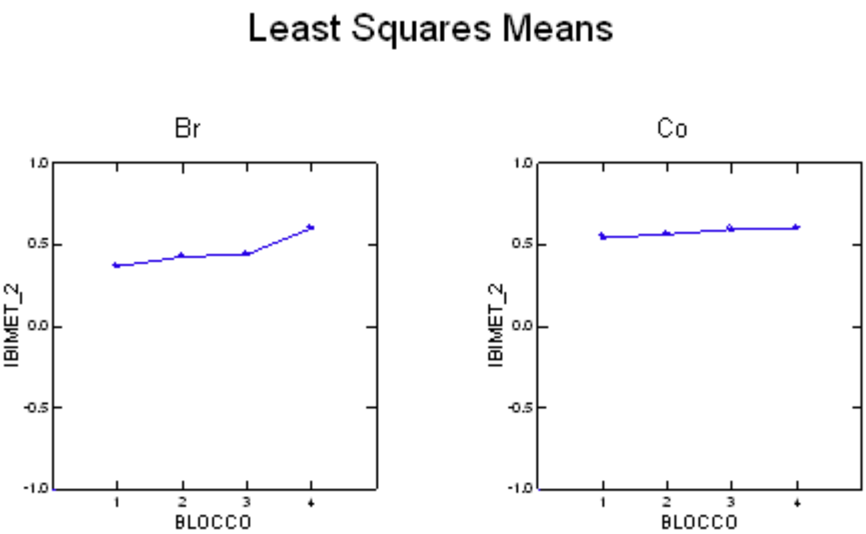



## Least Squares Means

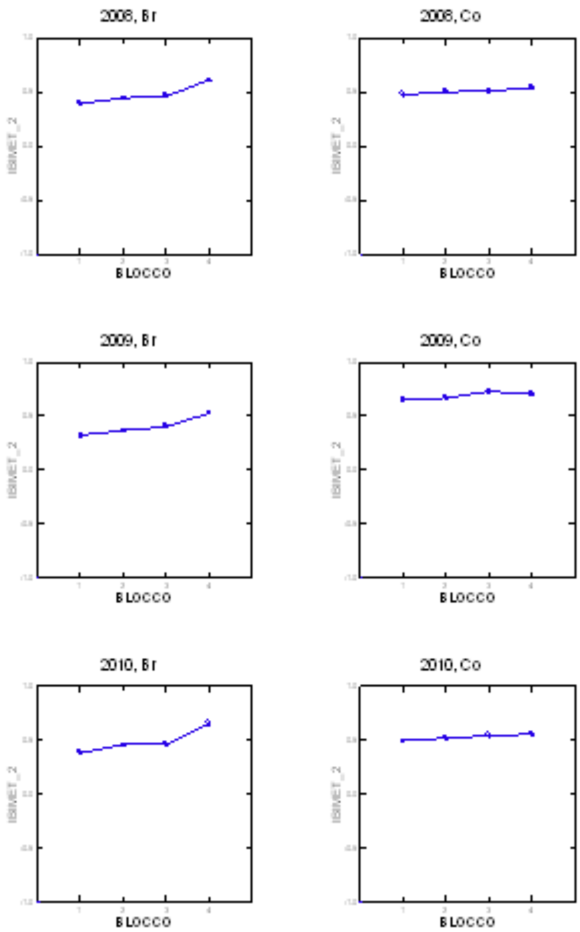



Least Squares Means
C0
C1
IBIMET_2
DIRAD$
D0
D1
1.0
0.5
0.0
-0.5
-1.0


Least Squares Means
A0
A1
IBIMET_2
DIRAD$
D0
D1
1.0
0.5
0.0
-0.5
-1.0


Least Squares Means
Br
Co
IBIMET_2
BLOCCO
1
2
3
4
1.0
0.5
0.0
-0.5
-1.0

## Least Squares Means




```
Durbin-Watson D Statistic    ¦ 1.404
First Order Autocorrelation ¦ 0.285
```

**Information Criteria**

```
AIC               ¦ -974.498
AIC (Corrected)   ¦ -952.776
Schwarz's BIC     ¦ -844.198
```

▼General Linear Model

### IBIMET3 2008-2009-2010

```
Data for the following results were selected according to
      SELECT (VARIETA$ = 'Sangiovese')

Effects coding used for categorical variables in model.
The categorical values encountered during processing are
```

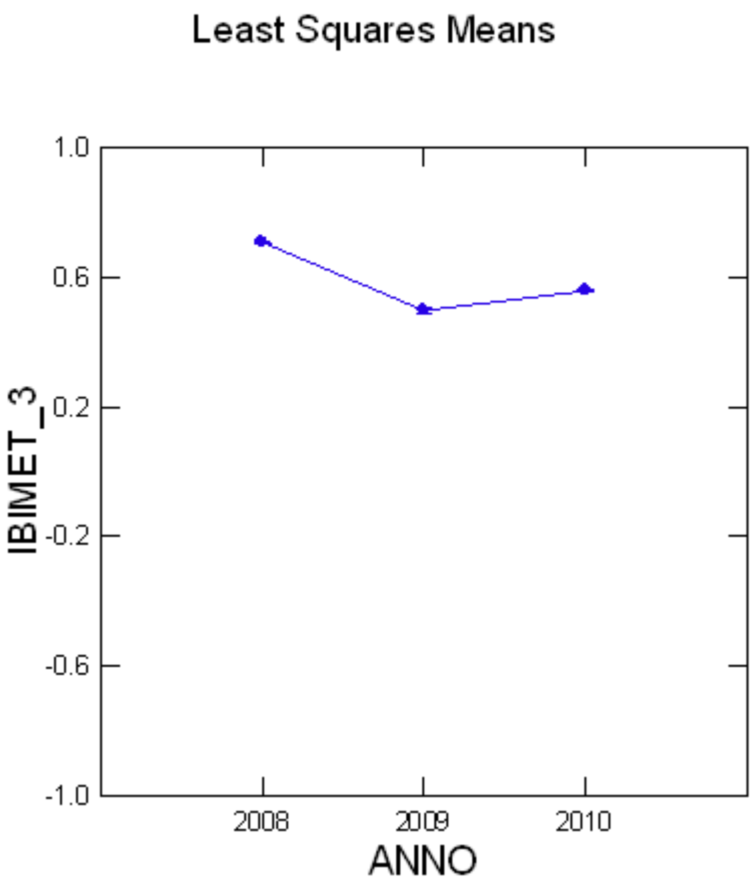
| Variables | Levels | | | |
|---|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 | |
| LOCALITA$ (2 levels) | Br | Co | | |
| BLOCCO (4 levels) | 1.000 | 2.000 | 3.000 | 4.000 |
| N_GEMME$ (2 levels) | C0 | C1 | | |

| | | |
|---|---|---|
| DEFOGL$ (2 levels) | A0 | A1 |
| DIRAD$ (2 levels) | D0 | D1 |

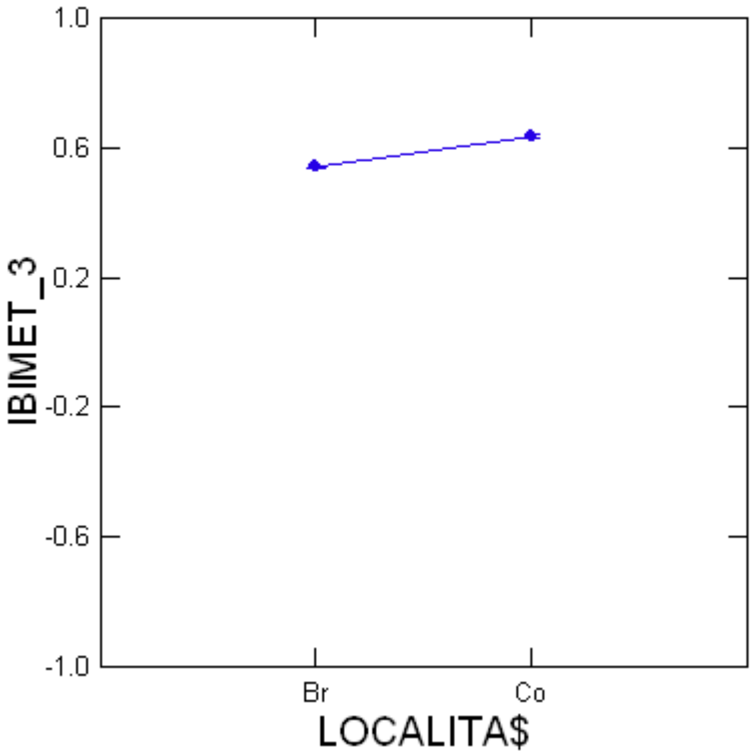
| | |
|---|---|
| Dependent Variable | IBIMET_3 |
| N | 192 |
| Multiple R | 0.996 |
| Squared Multiple R | 0.991 |

**Analysis of Variance**

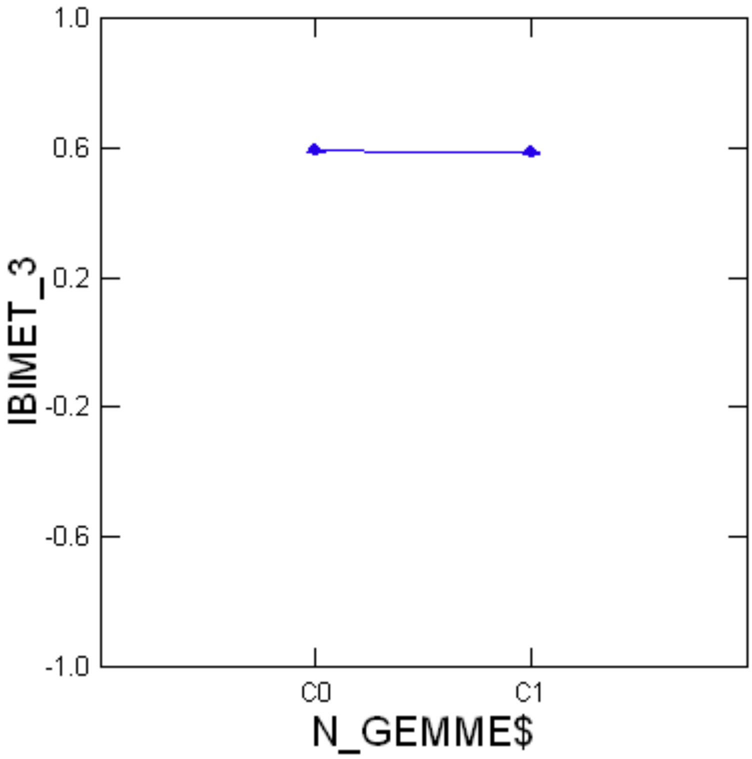
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 1.192 | 2 | 0.596 | 1,551.528 | 0.000 |
| LOCALITA$ | 0.311 | 1 | 0.311 | 809.963 | 0.000 |
| N_GEMME$ | 0.002 | 1 | 0.002 | 5.931 | 0.016 |
| DEFOGL$ | 0.001 | 1 | 0.001 | 2.137 | 0.146 |
| DIRAD$ | 0.002 | 1 | 0.002 | 4.476 | 0.036 |
| LOCALITA$*ANNO | 3.624 | 2 | 1.812 | 4,715.609 | 0.000 |
| N_GEMME$*ANNO | 0.000 | 2 | 0.000 | 0.614 | 0.542 |
| DEFOGL$*ANNO | 0.001 | 2 | 0.000 | 1.174 | 0.312 |
| DIRAD$*ANNO | 0.001 | 2 | 0.000 | 0.795 | 0.453 |
| N_GEMME$*LOCALITA$ | 0.001 | 1 | 0.001 | 2.875 | 0.092 |
| DEFOGL$*LOCALITA$ | 0.001 | 1 | 0.001 | 2.883 | 0.092 |
| DIRAD$*LOCALITA$ | 0.001 | 1 | 0.001 | 2.583 | 0.110 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.215 | 0.644 |
| DIRAD$*N_GEMME$ | 0.000 | 1 | 0.000 | 1.238 | 0.268 |
| DIRAD$*DEFOGL$ | 0.000 | 1 | 0.000 | 0.002 | 0.965 |
| BLOCCO(LOCALITA$) | 0.726 | 6 | 0.121 | 314.995 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.056 | 12 | 0.005 | 12.057 | 0.000 |
| Error | 0.059 | 153 | 0.000 | | |

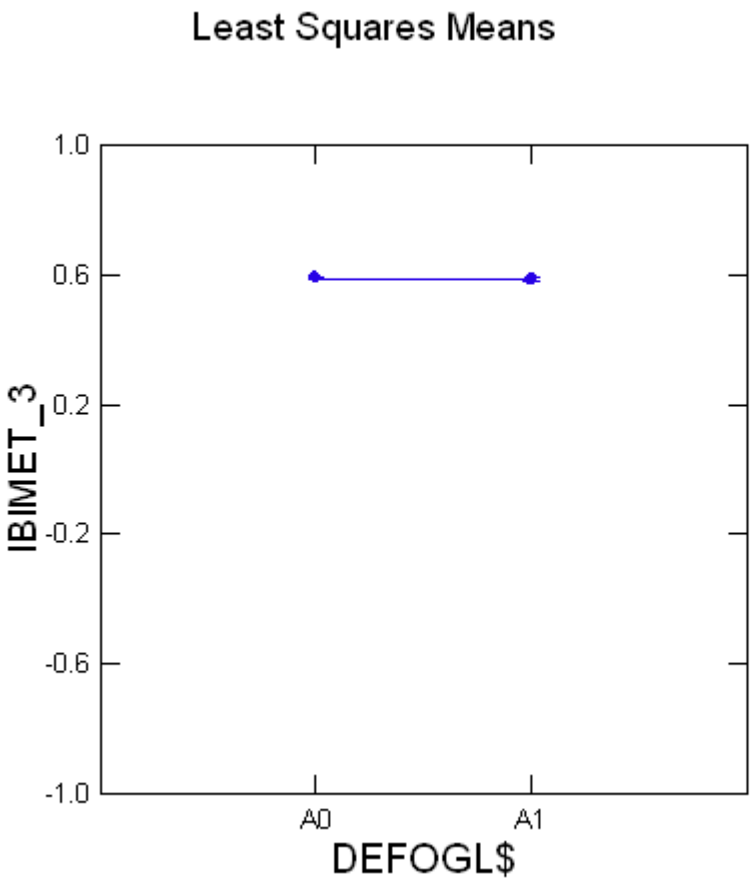


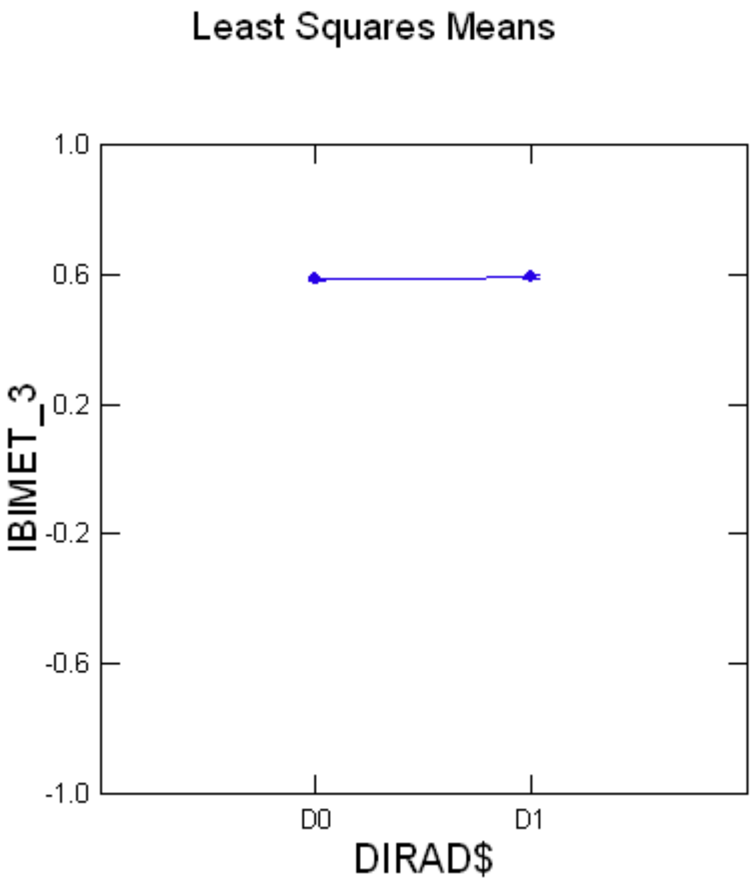
Least Squares Means



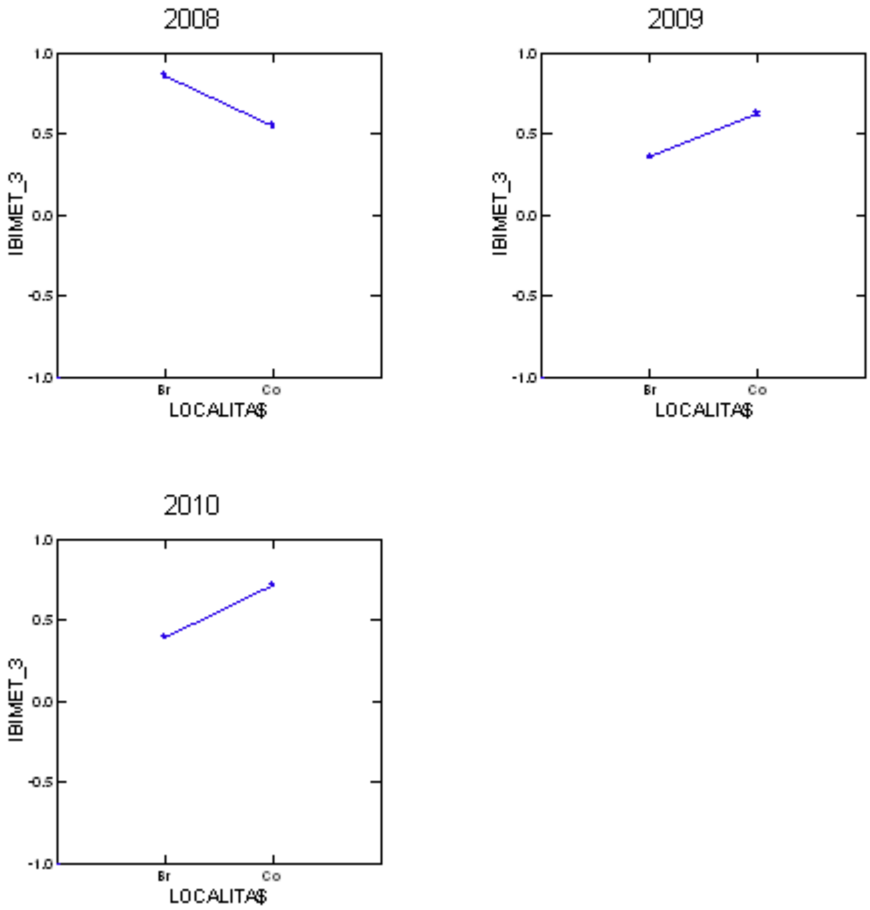

Least Squares Means



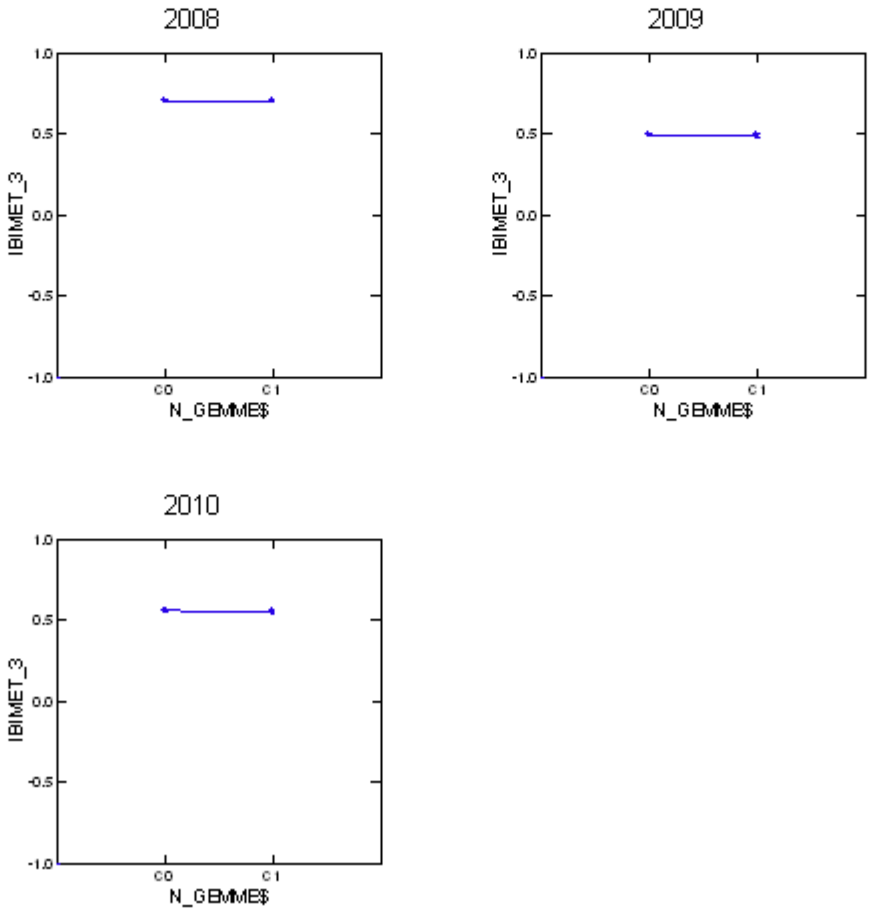

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_3
A0
A1
DEFOGL$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_3
D0
D1
DIRAD$

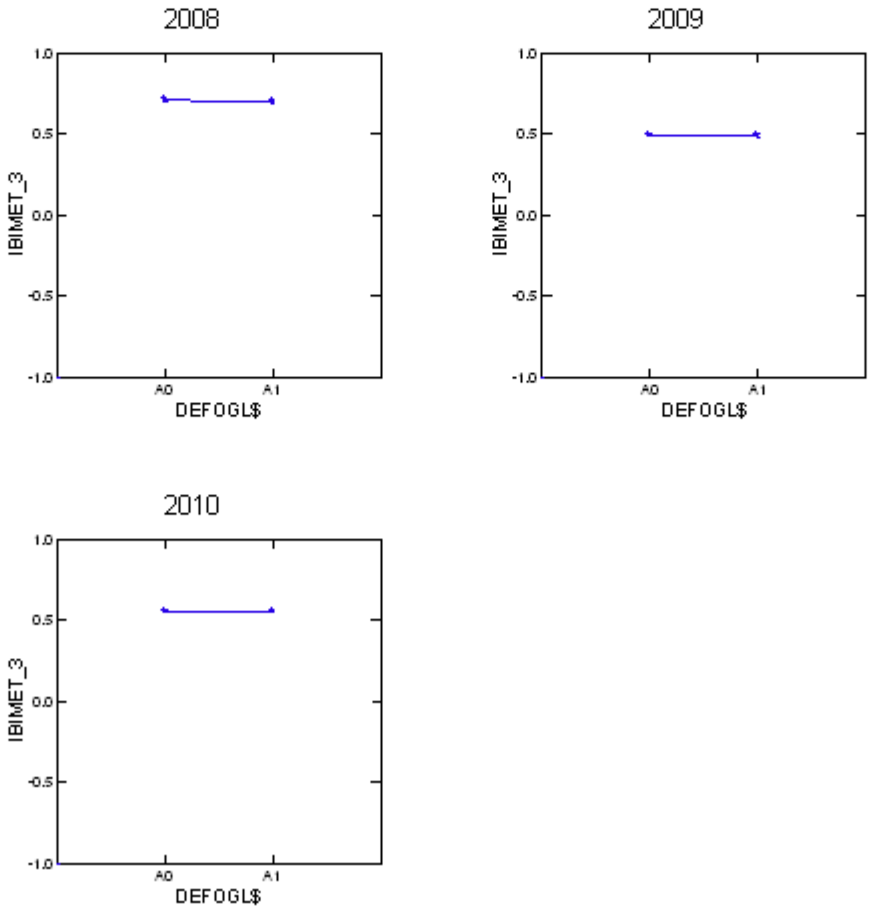
# Least Squares Means

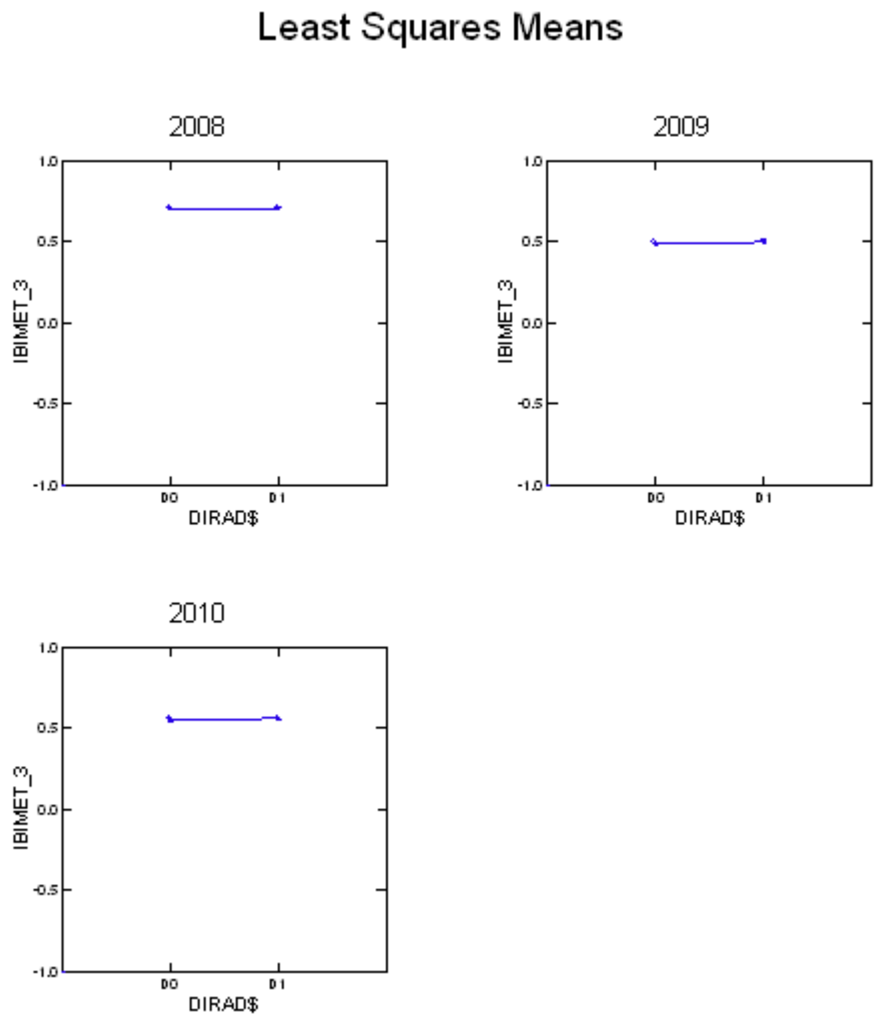


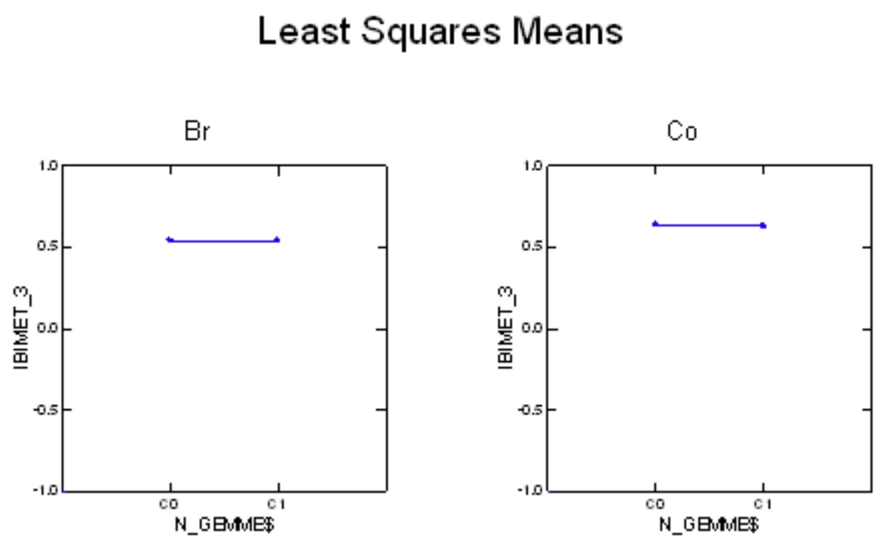
# Least Squares Means



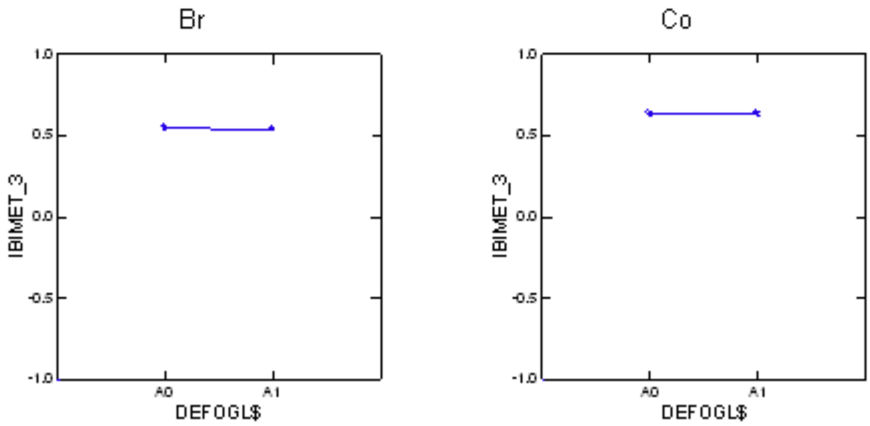
## Least Squares Means



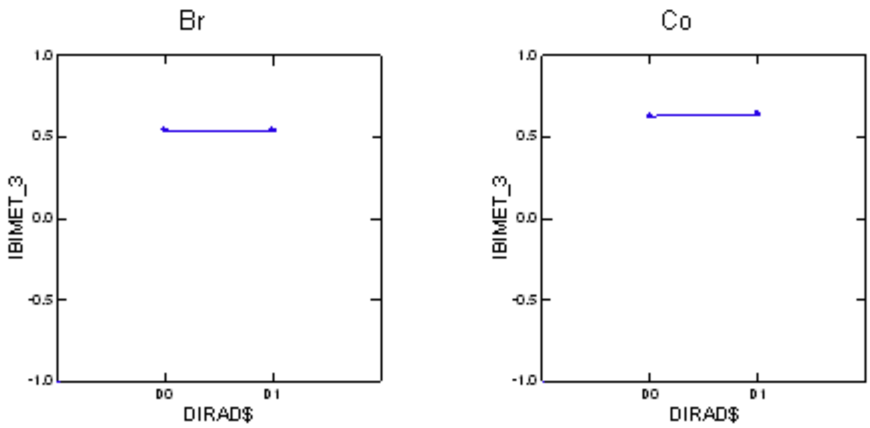

Least Squares Means
2008
2009
2010
IBIMET_3
1.0
0.5
0.0
-0.5
-1.0
D0
D1
DIRAD$


Least Squares Means
Br
Co
IBIMET_3
1.0
0.5
0.0
-0.5
-1.0
C0
C1
N_GEMME$

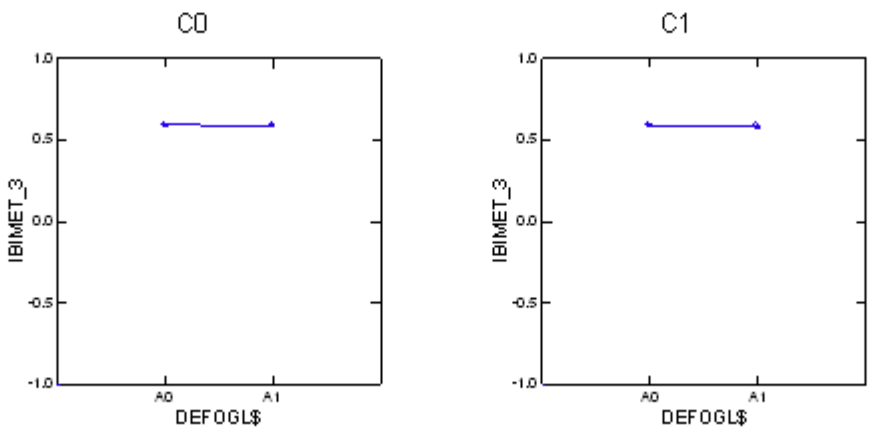
## Least Squares Means



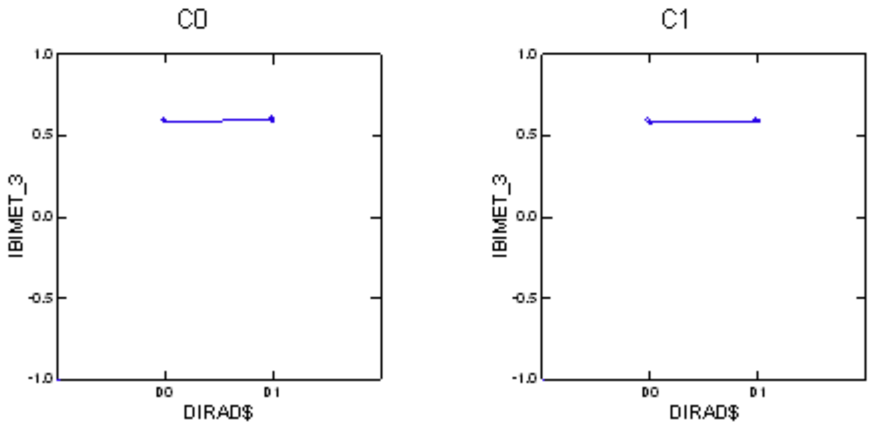

## Least Squares Means



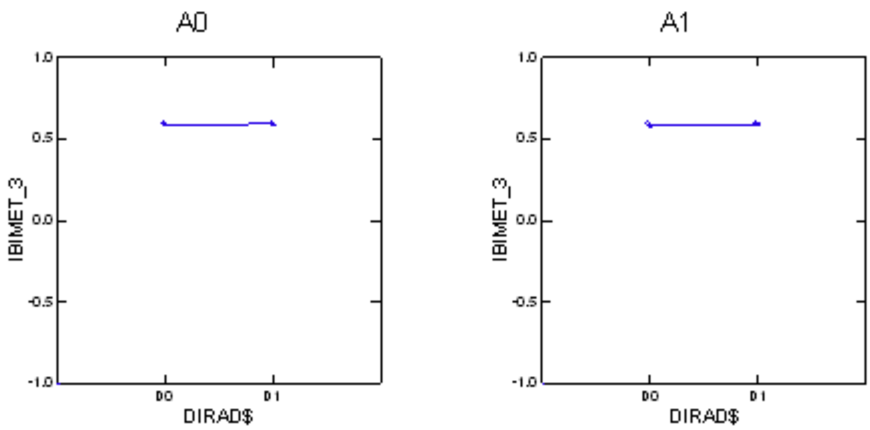

## Least Squares Means



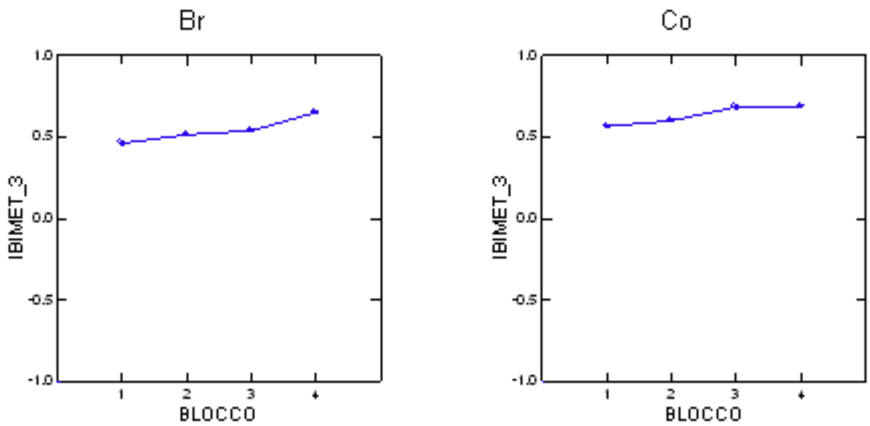
## Least Squares Means



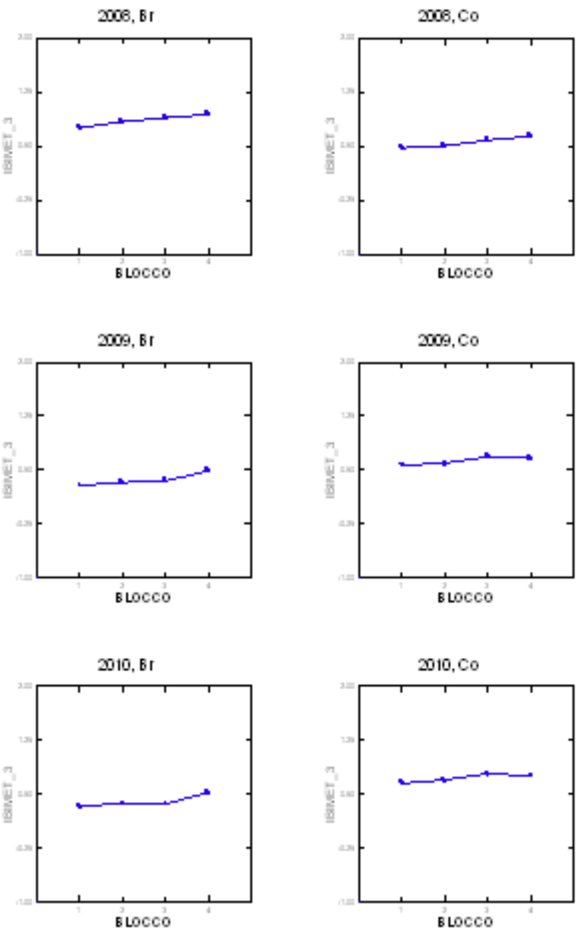

## Least Squares Means




## Least Squares Means



## Least Squares Means




| | |
|---|---|
| Durbin-Watson D Statistic | 1.586 |
| First Order Autocorrelation | 0.163 |

**Information Criteria**

| | |
|---|---|
| AIC | -928.634 |
| AIC (Corrected) | -906.912 |
| Schwarz's BIC | -798.334 |

▼General Linear Model

## IASMA1 2008-2009-2010

Data for the following results were selected according to
SELECT (VARIETA$ = 'Sangiovese')

Effects coding used for categorical variables in model.
The categorical values encountered during processing are

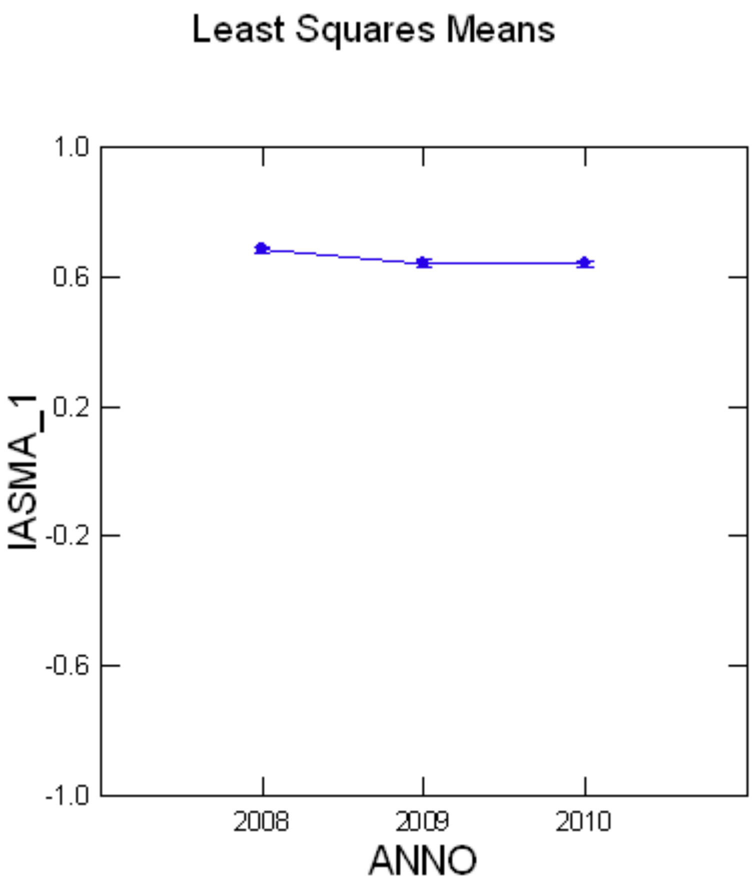
| Variables | Levels | | | |
|---|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 | |
| LOCALITA$ (2 levels) | Br | Co | | |
| BLOCCO (4 levels) | 1.000 | 2.000 | 3.000 | 4.000 |
| N_GEMME$ (2 levels) | C0 | C1 | | |
| DEFOGL$ (2 levels) | A0 | A1 | | |

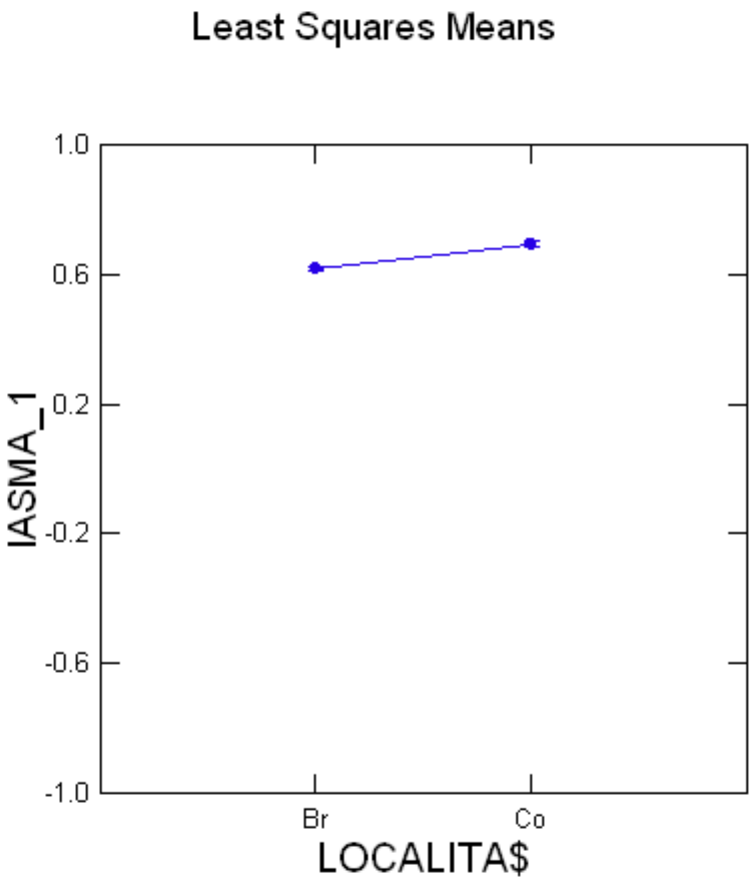
| | |
|---|---|
| DIRAD$ (2 levels) | D0 D1 |

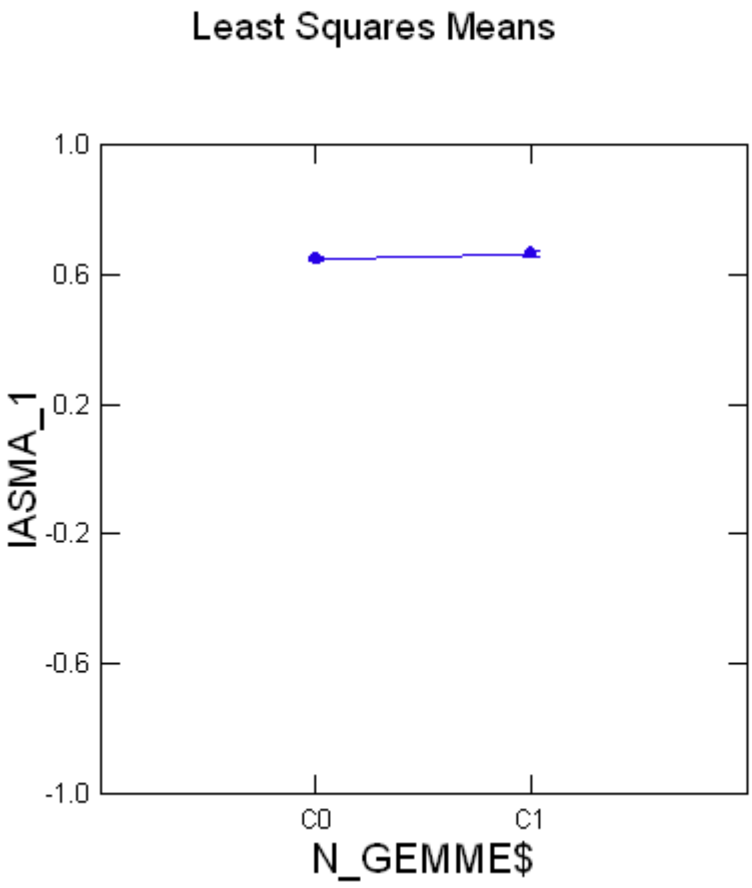
| | |
|---|---|
| Dependent Variable | IASMA_1 |
| N | 192 |
| Multiple R | 0.888 |
| Squared Multiple R | 0.789 |

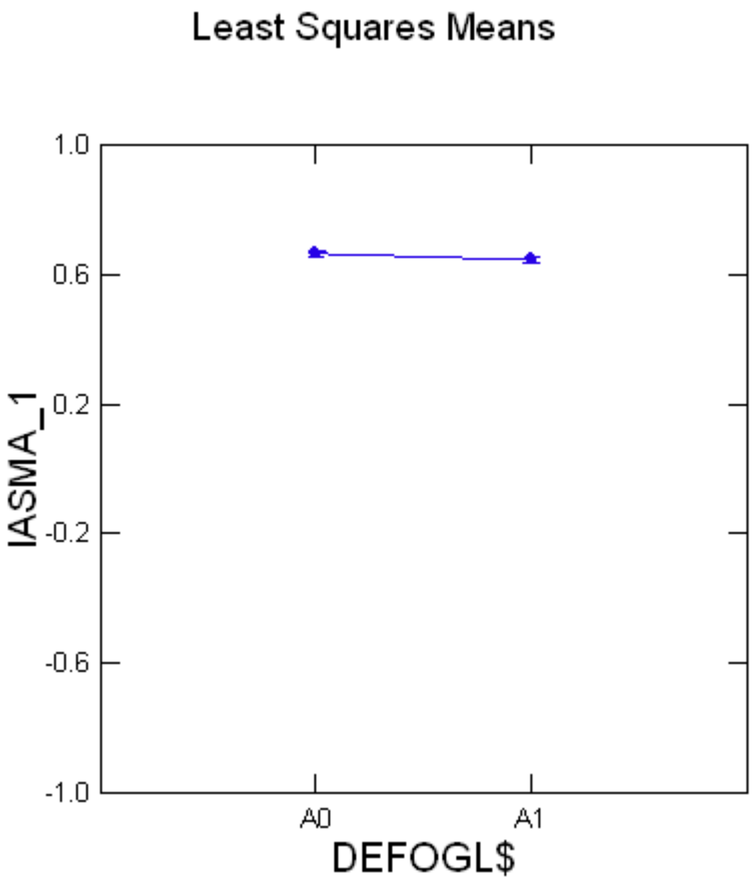
**Analysis of Variance**

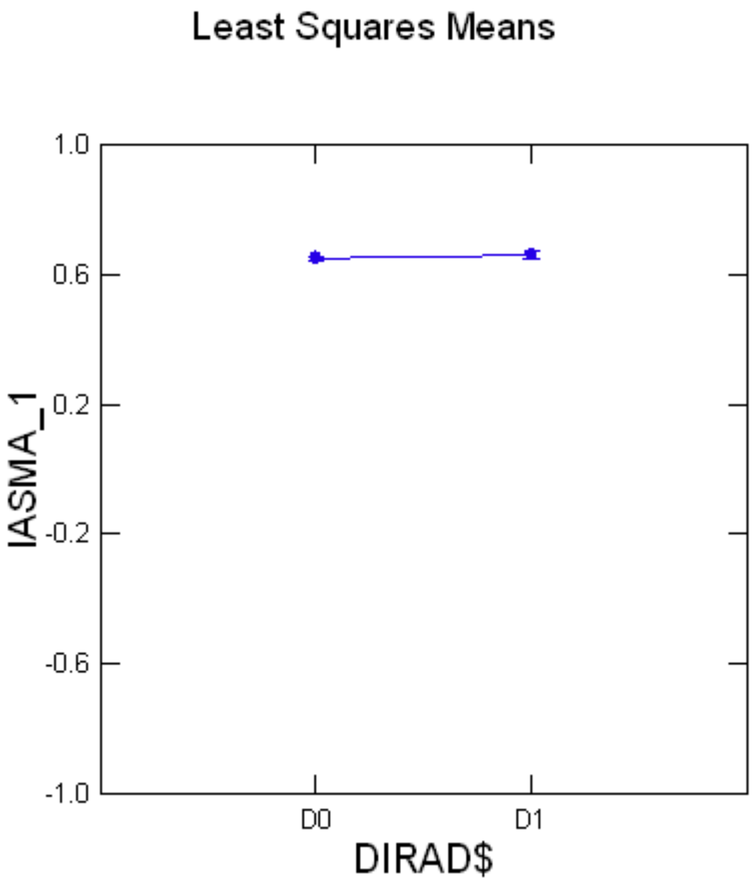
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.077 | 2 | 0.038 | 28.438 | 0.000 |
| LOCALITA$ | 0.202 | 1 | 0.202 | 150.110 | 0.000 |
| N_GEMME$ | 0.011 | 1 | 0.011 | 8.363 | 0.004 |
| DEFOGL$ | 0.018 | 1 | 0.018 | 13.551 | 0.000 |
| DIRAD$ | 0.003 | 1 | 0.003 | 2.401 | 0.123 |
| LOCALITA$*ANNO | 0.046 | 2 | 0.023 | 17.182 | 0.000 |
| N_GEMME$*ANNO | 0.014 | 2 | 0.007 | 5.319 | 0.006 |
| DEFOGL$*ANNO | 0.001 | 2 | 0.000 | 0.366 | 0.694 |
| DIRAD$*ANNO | 0.004 | 2 | 0.002 | 1.609 | 0.204 |
| N_GEMME$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.246 | 0.621 |
| DEFOGL$*LOCALITA$ | 0.010 | 1 | 0.010 | 7.171 | 0.008 |
| DIRAD$*LOCALITA$ | 0.003 | 1 | 0.003 | 1.903 | 0.170 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.113 | 0.737 |
| DIRAD$*N_GEMME$ | 0.002 | 1 | 0.002 | 1.316 | 0.253 |
| DIRAD$*DEFOGL$ | 0.000 | 1 | 0.000 | 0.033 | 0.855 |
| BLOCCO(LOCALITA$) | 0.109 | 6 | 0.018 | 13.552 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.165 | 12 | 0.014 | 10.198 | 0.000 |
| Error | 0.206 | 153 | 0.001 | | |



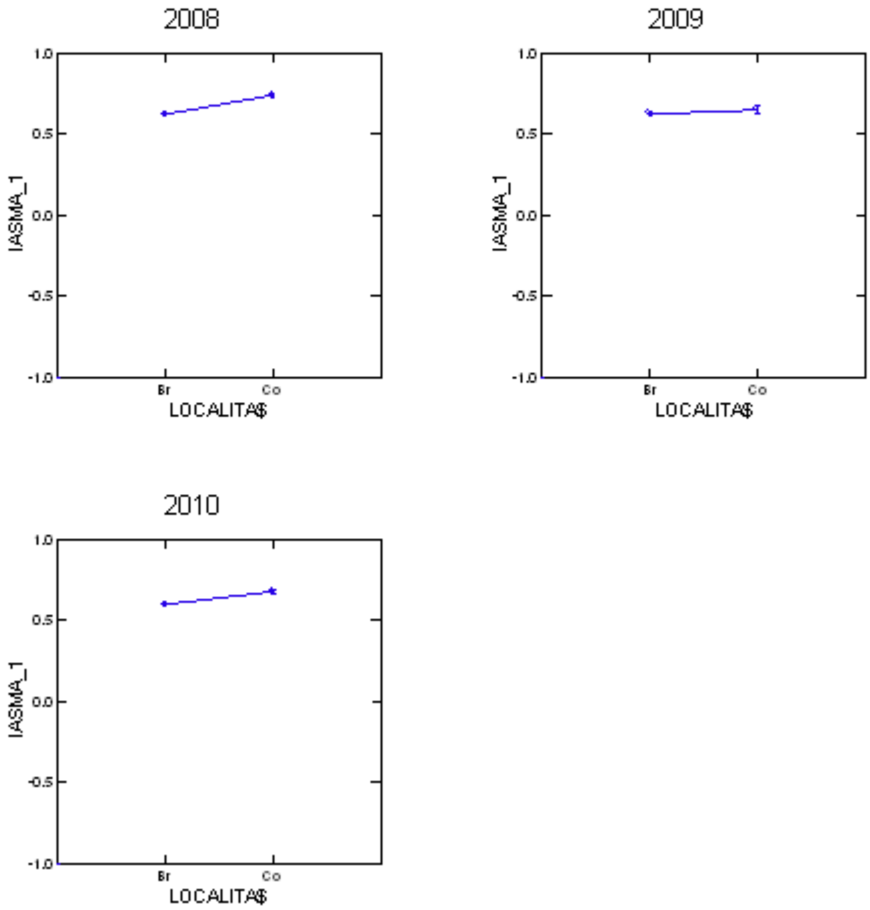

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_1
Br
Co
LOCALITA$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_1
C0
C1
N_GEMME$

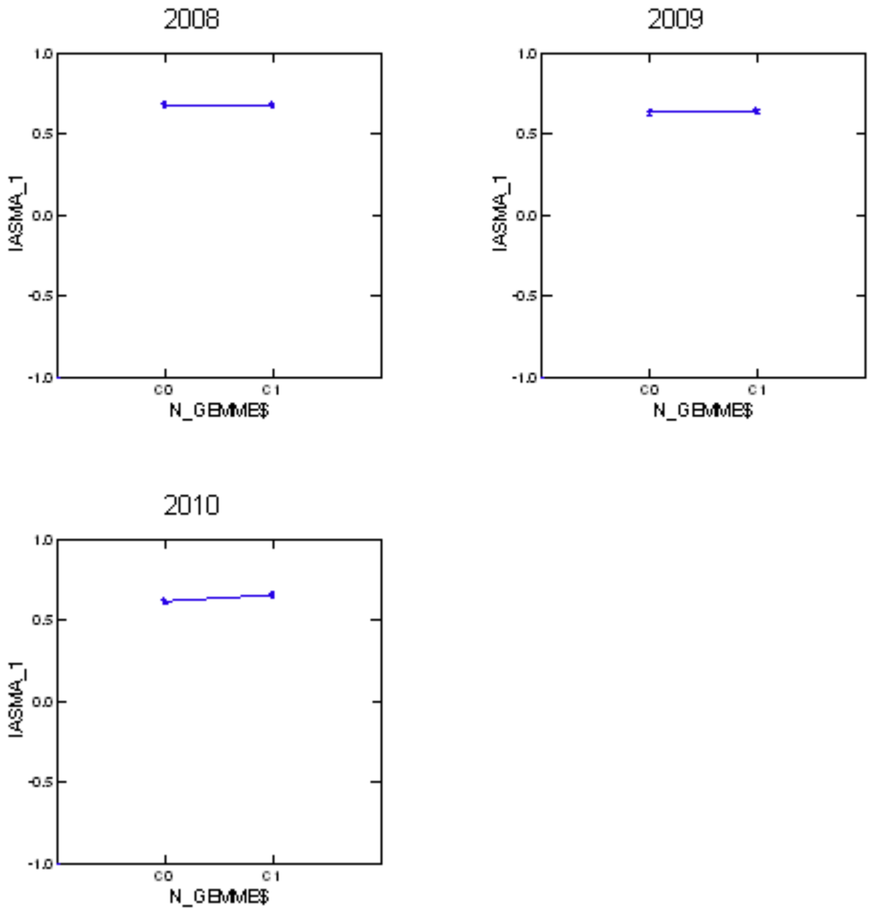

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_1
A0
A1
DEFOGL$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_1
D0
D1
DIRAD$

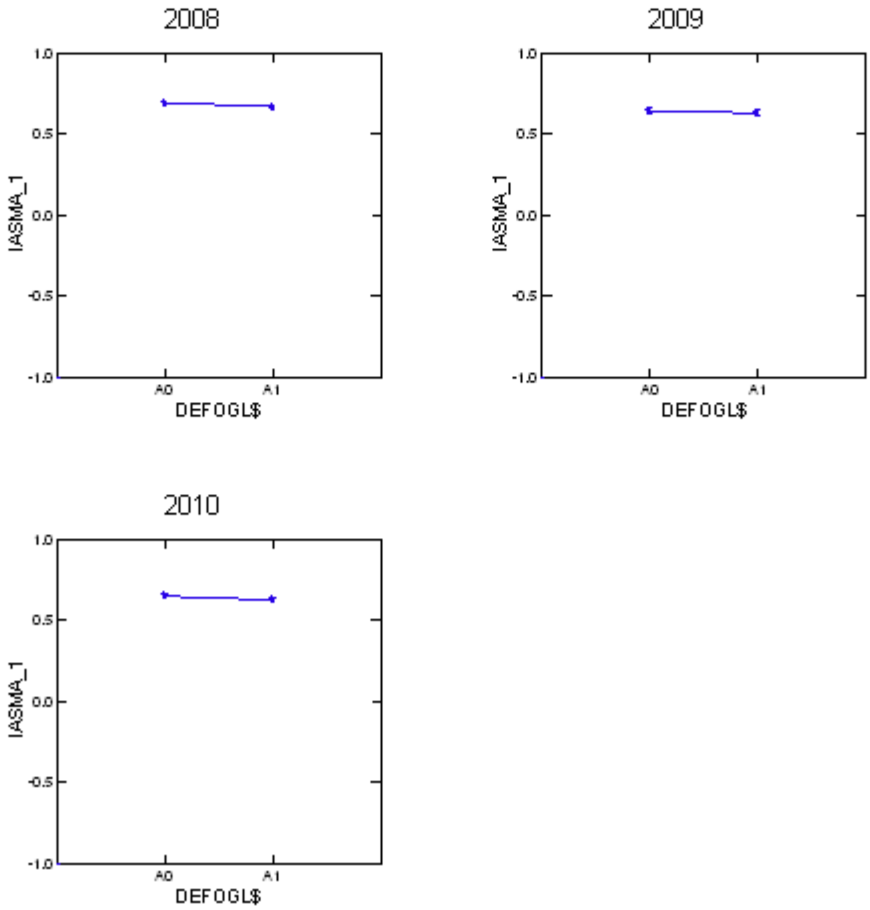
## Least Squares Means



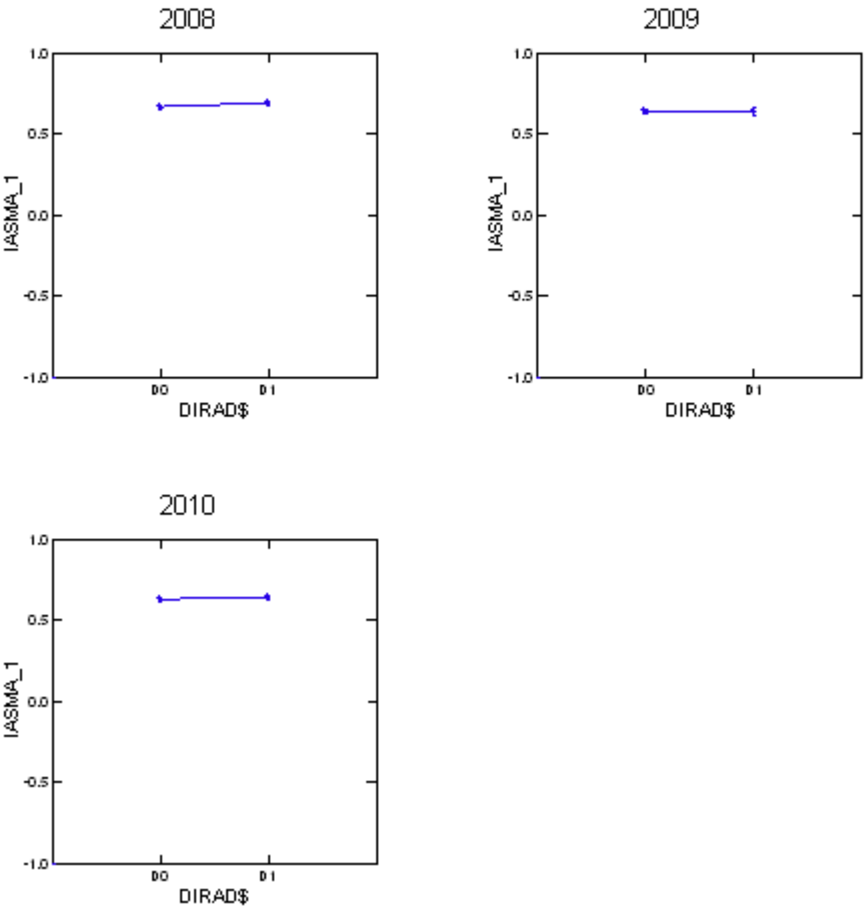
# Least Squares Means



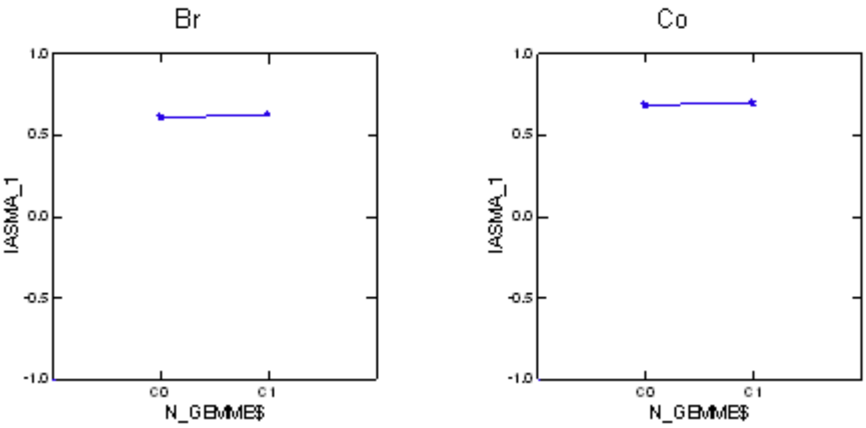
## Least Squares Means



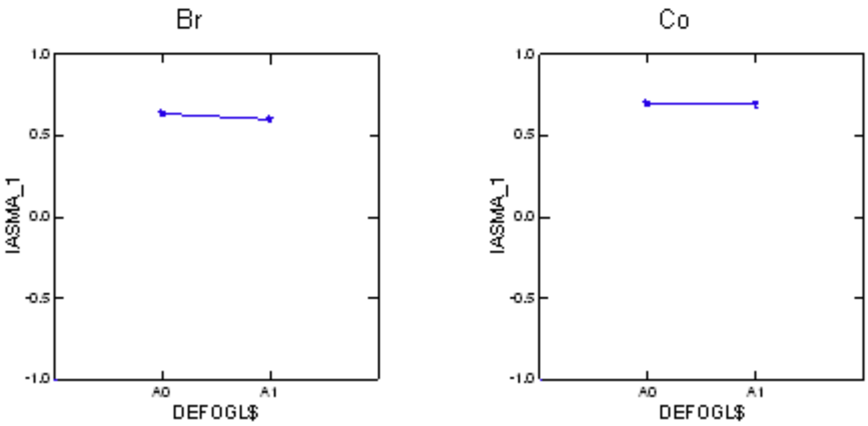
## Least Squares Means



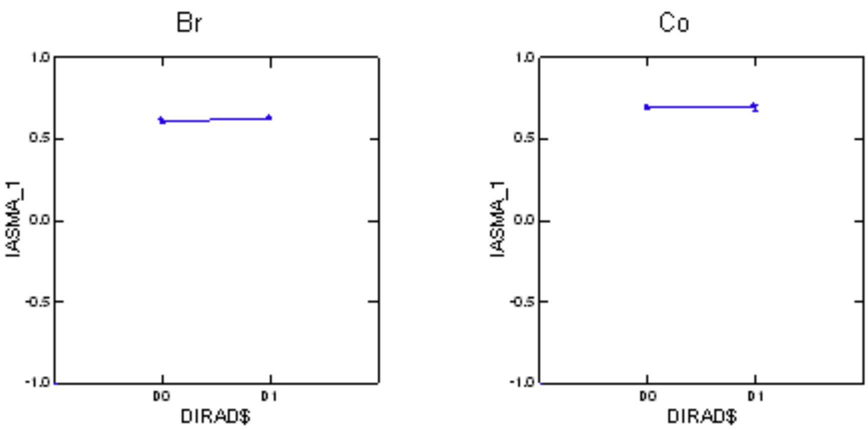

## Least Squares Means



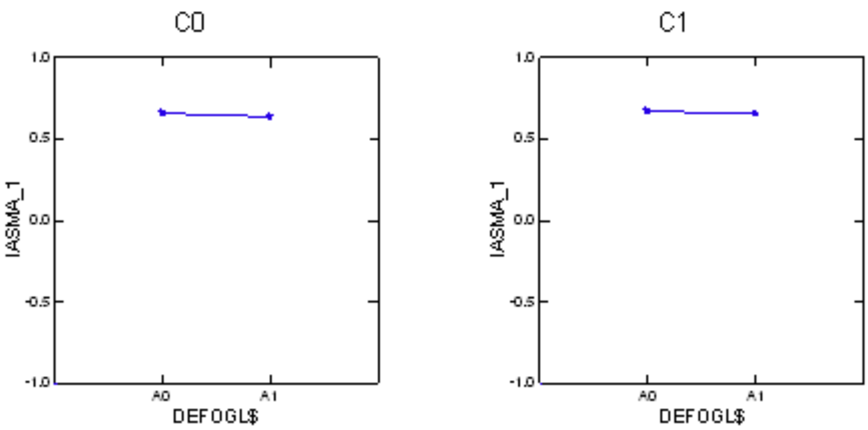
## Least Squares Means



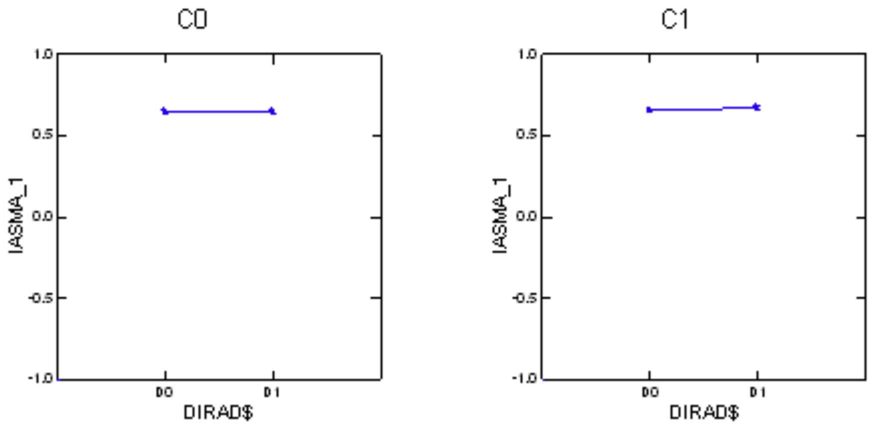

## Least Squares Means



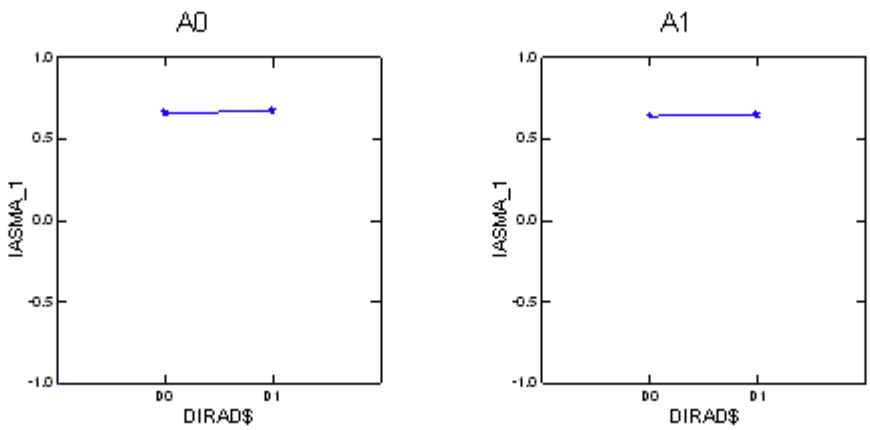

## Least Squares Means



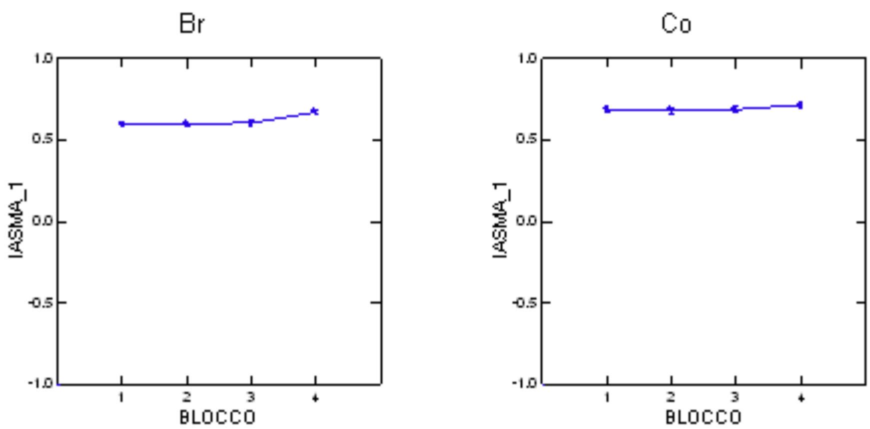
## Least Squares Means



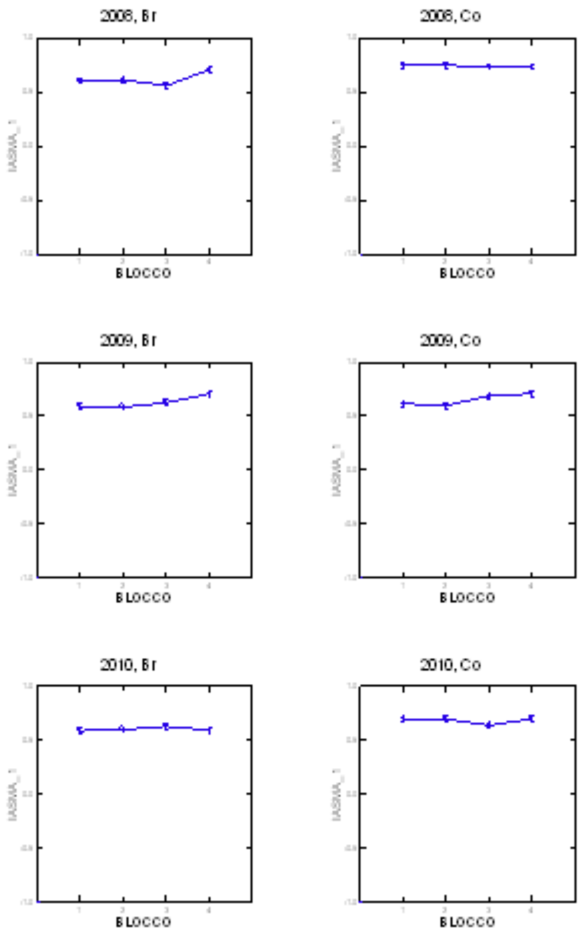

## Least Squares Means




## Least Squares Means



## Least Squares Means




```
*** WARNING *** :

Case 73 is an Outlier (Studentized Residual : -5.194)

Durbin-Watson D Statistic    ¦ 1.482
First Order Autocorrelation ¦ 0.257
```

**Information Criteria**

```
AIC               ¦ -687.964
AIC (Corrected) ¦ -666.242
Schwarz's BIC    ¦ -557.664
```

### ▼General Linear Model

## IASMA2 2008-2009-2010

```
Data for the following results were selected according to
      SELECT (VARIETA$ = 'Sangiovese')

Effects coding used for categorical variables in model.
The categorical values encountered during processing are

Variables                  ¦                       Levels
```

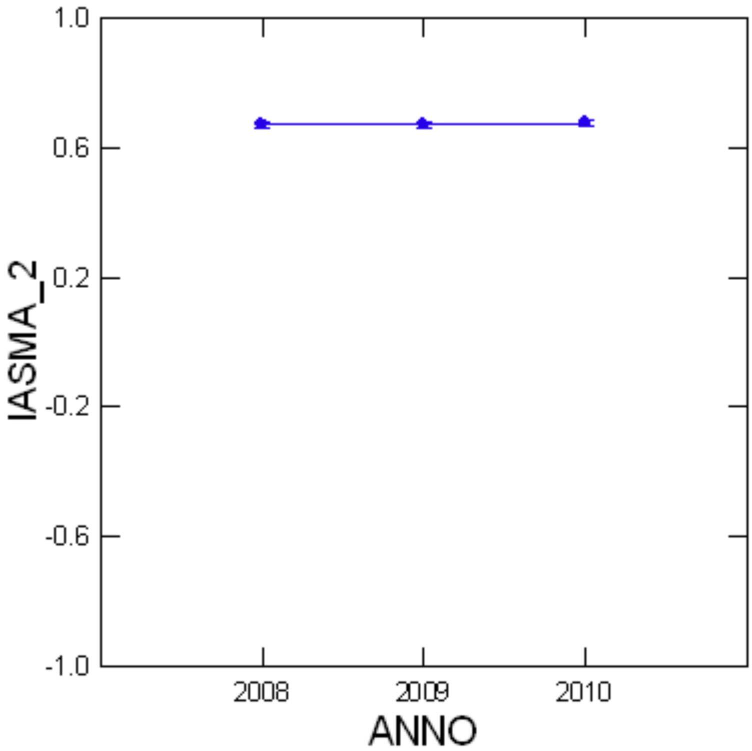
| | |
|---|---|
| ANNO (3 levels) | 2,008.000 2,009.000 2,010.000 |
| LOCALITA$ (2 levels) | Br Co |
| BLOCCO (4 levels) | 1.000 2.000 3.000 4.000 |
| N_GEMME$ (2 levels) | C0 C1 |
| DEFOGL$ (2 levels) | A0 A1 |
| DIRAD$ (2 levels) | D0 D1 |

| | |
|---|---|
| Dependent Variable | IASMA_2 |
| N | 192 |
| Multiple R | 0.854 |
| Squared Multiple R | 0.730 |

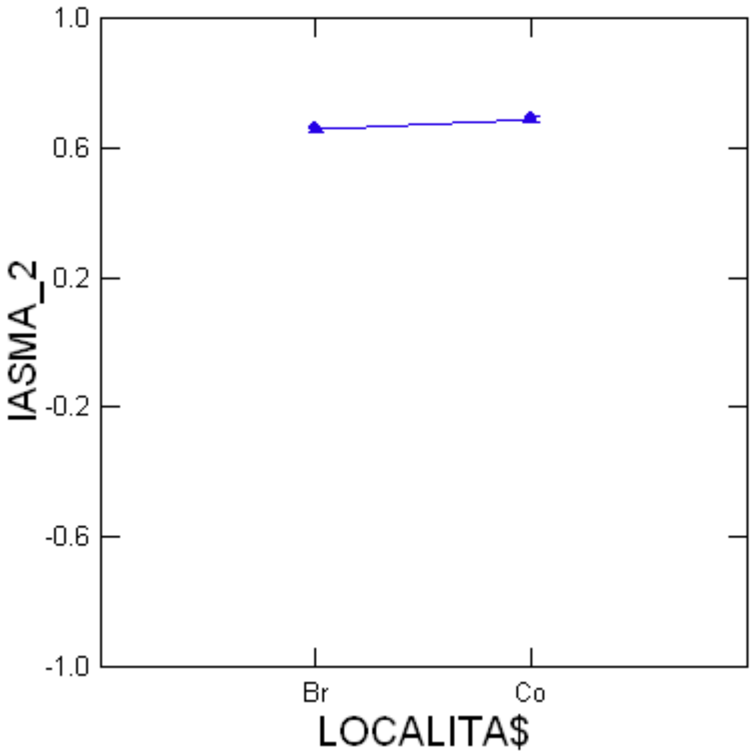
**Analysis of Variance**

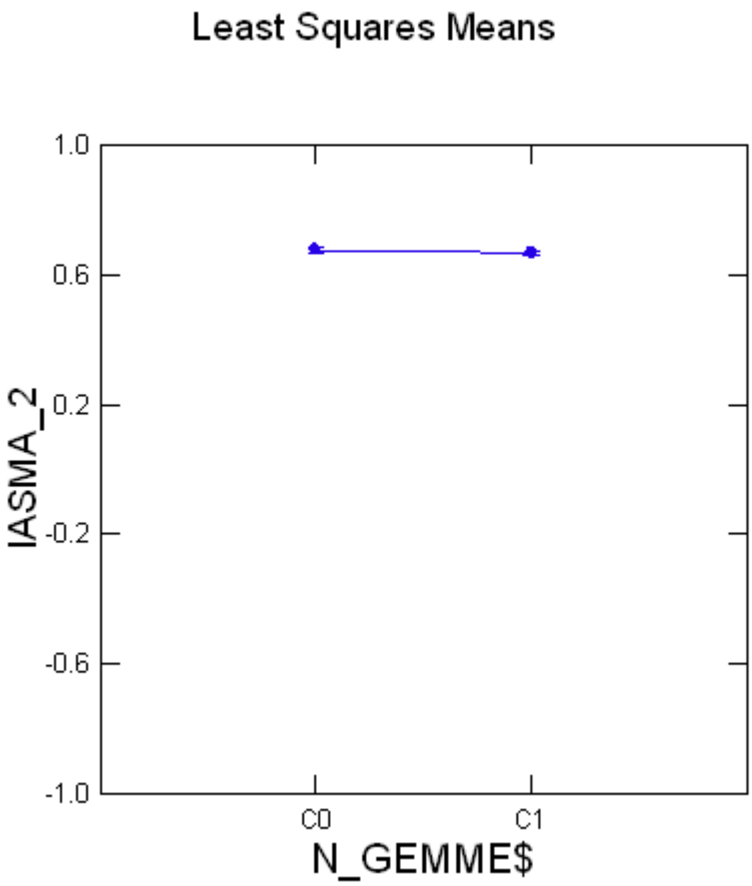
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.001 | 2 | 0.001 | 0.664 | 0.516 |
| LOCALITA$ | 0.034 | 1 | 0.034 | 38.618 | 0.000 |
| N_GEMME$ | 0.003 | 1 | 0.003 | 3.573 | 0.061 |
| DEFOGL$ | 0.000 | 1 | 0.000 | 0.368 | 0.545 |
| DIRAD$ | 0.003 | 1 | 0.003 | 3.222 | 0.075 |
| LOCALITA$*ANNO | 0.045 | 2 | 0.023 | 26.060 | 0.000 |
| N_GEMME$*ANNO | 0.002 | 2 | 0.001 | 1.258 | 0.287 |
| DEFOGL$*ANNO | 0.003 | 2 | 0.002 | 1.880 | 0.156 |
| DIRAD$*ANNO | 0.003 | 2 | 0.001 | 1.505 | 0.225 |
| N_GEMME$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.008 | 0.929 |
| DEFOGL$*LOCALITA$ | 0.003 | 1 | 0.003 | 3.480 | 0.064 |
| DIRAD$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.428 | 0.514 |
| DEFOGL$*N_GEMME$ | 0.002 | 1 | 0.002 | 2.248 | 0.136 |
| DIRAD$*N_GEMME$ | 0.001 | 1 | 0.001 | 0.698 | 0.405 |
| DIRAD$*DEFOGL$ | 0.000 | 1 | 0.000 | 0.191 | 0.663 |
| BLOCCO(LOCALITA$) | 0.218 | 6 | 0.036 | 41.673 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.034 | 12 | 0.003 | 3.243 | 0.000 |
| Error | 0.134 | 153 | 0.001 | | |

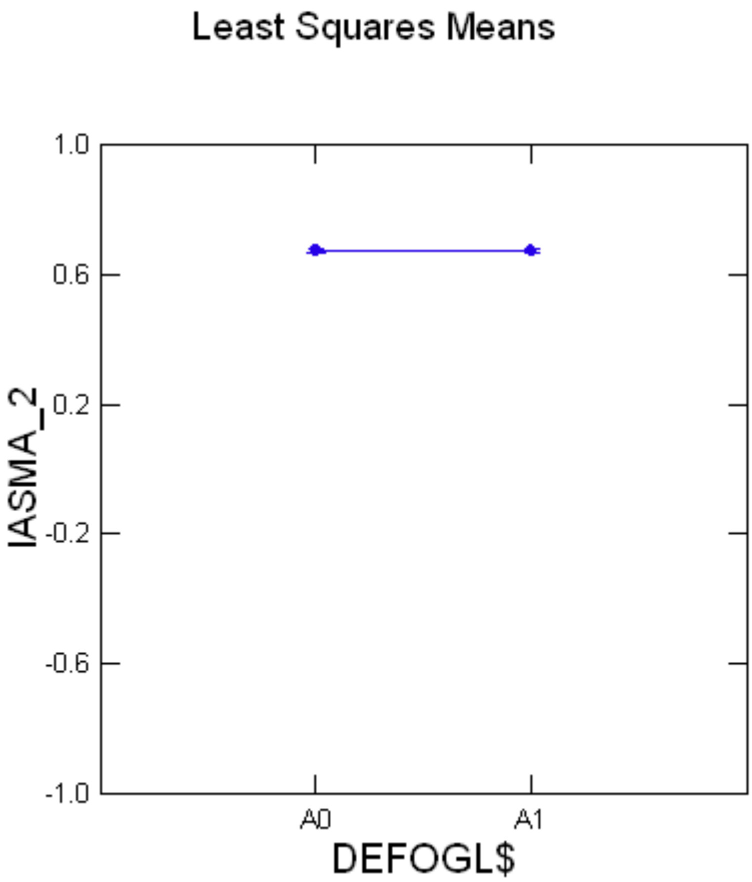
Least Squares Means



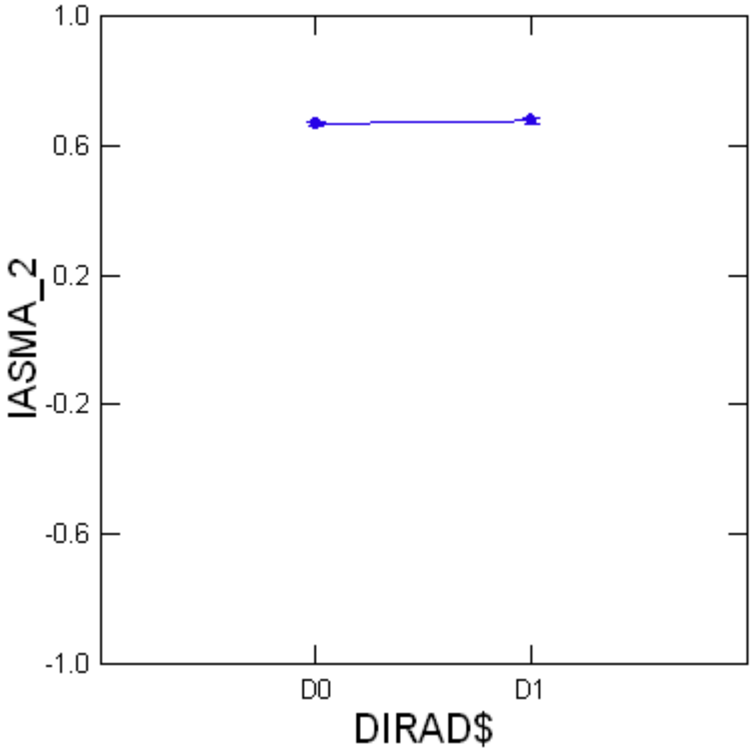

Least Squares Means



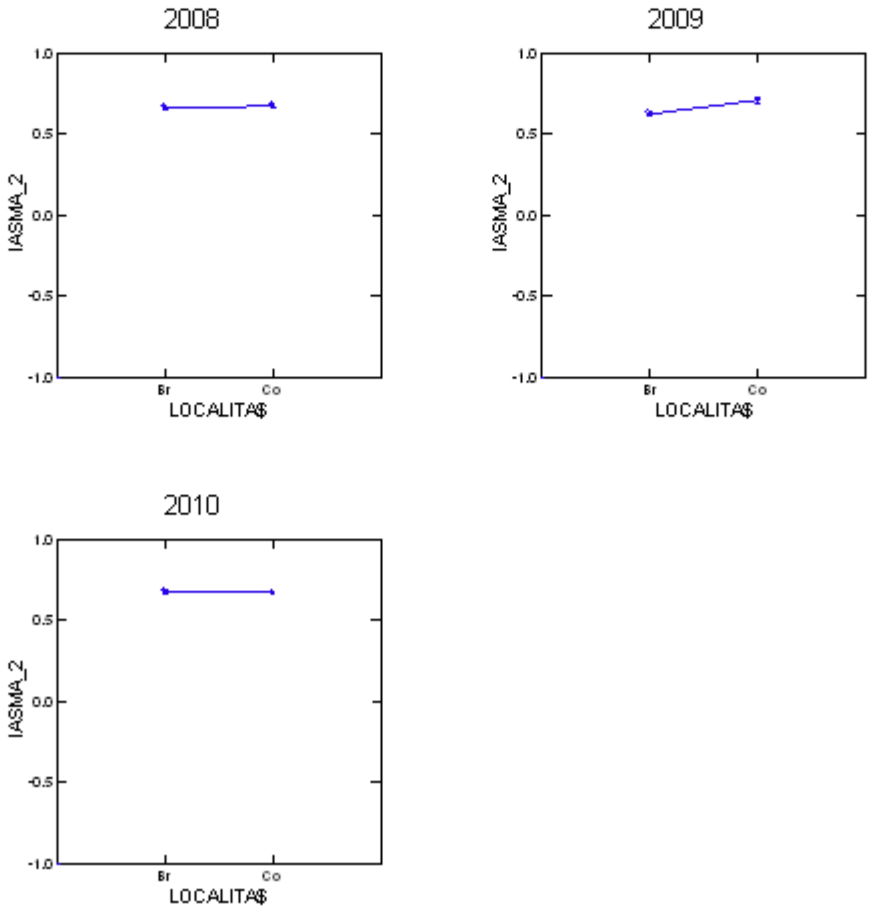

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_2
C0
C1
N_GEMME$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_2
A0
A1
DEFOGL$

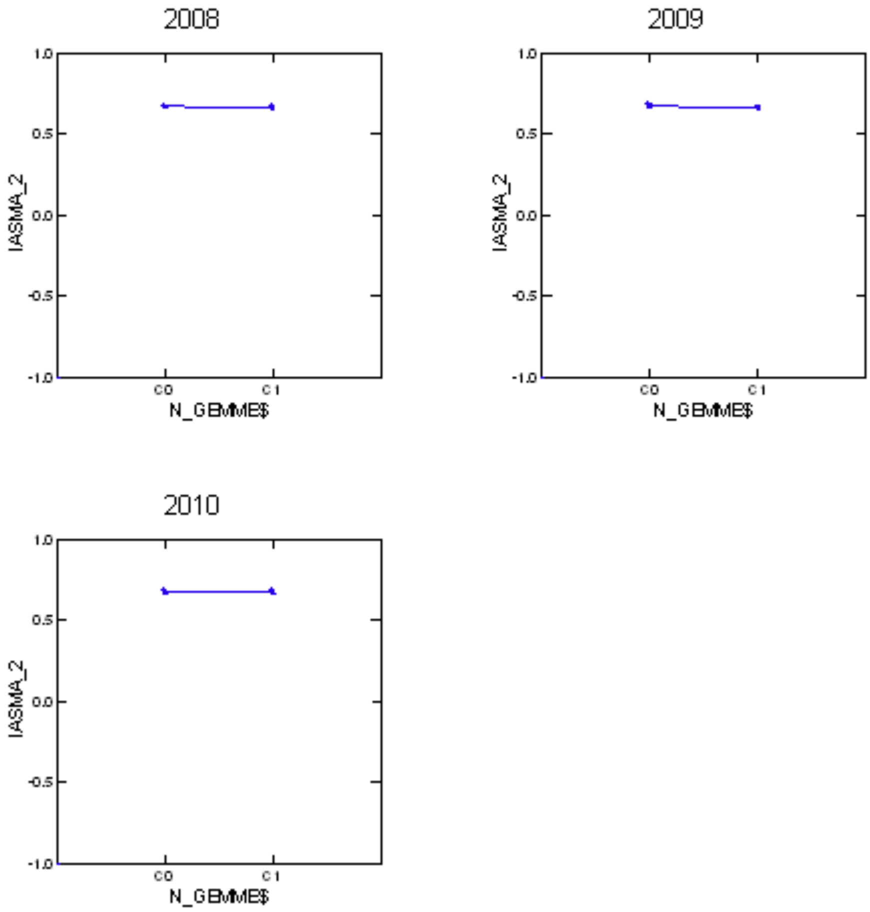
Least Squares Means



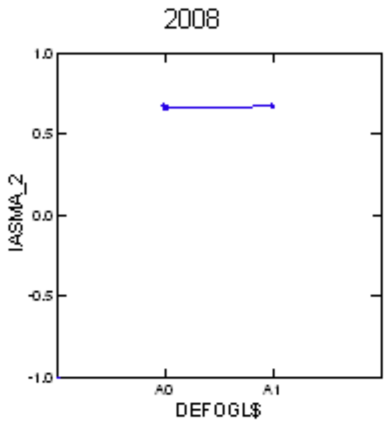
# Least Squares Means

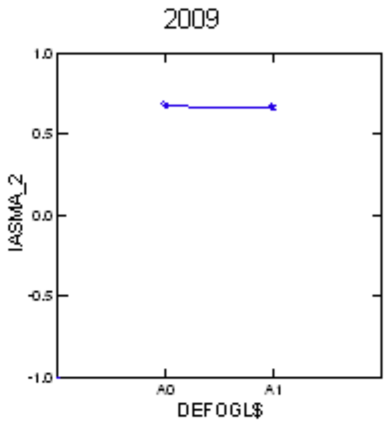


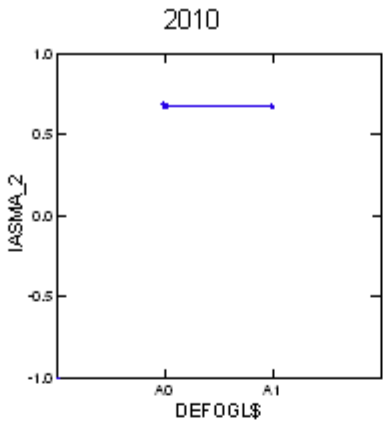
## Least Squares Means



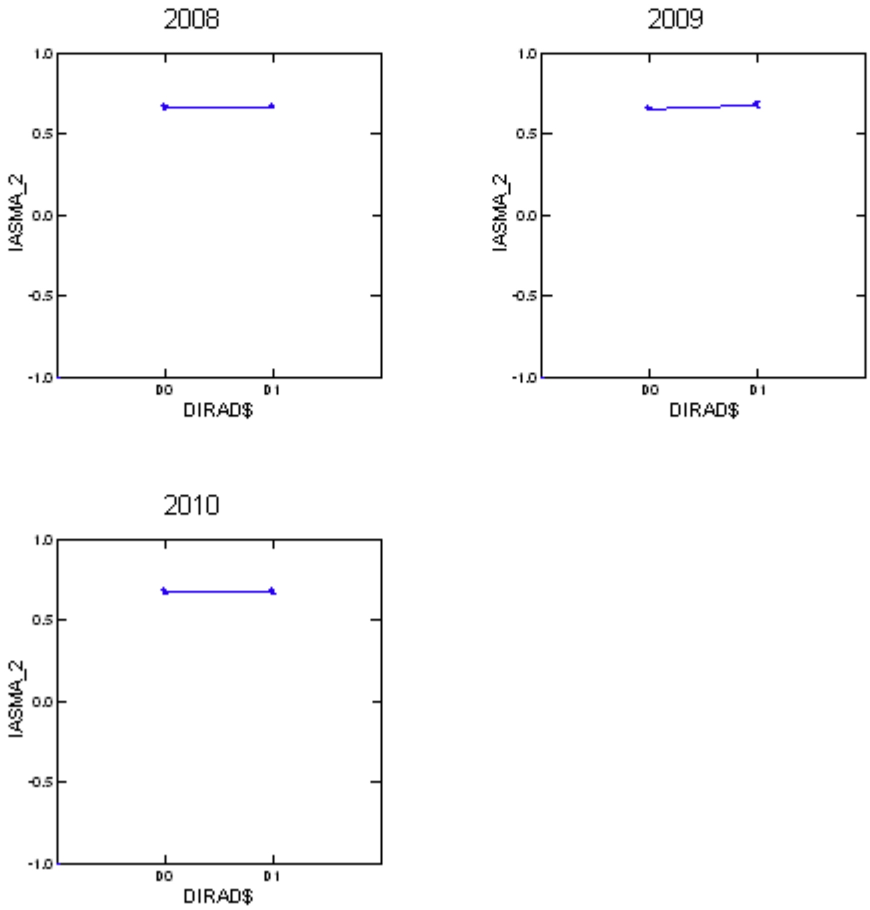
# Least Squares Means



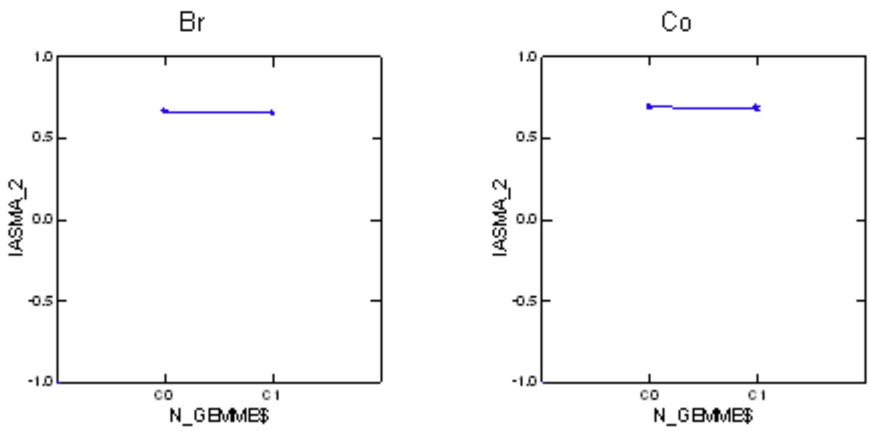



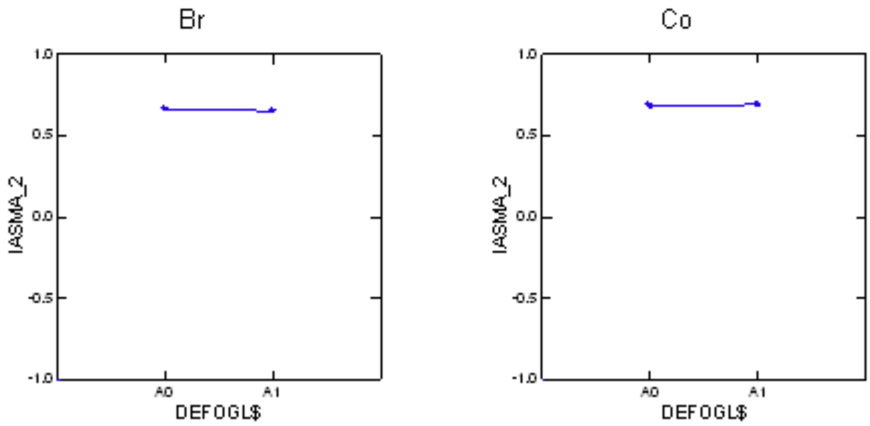
## Least Squares Means



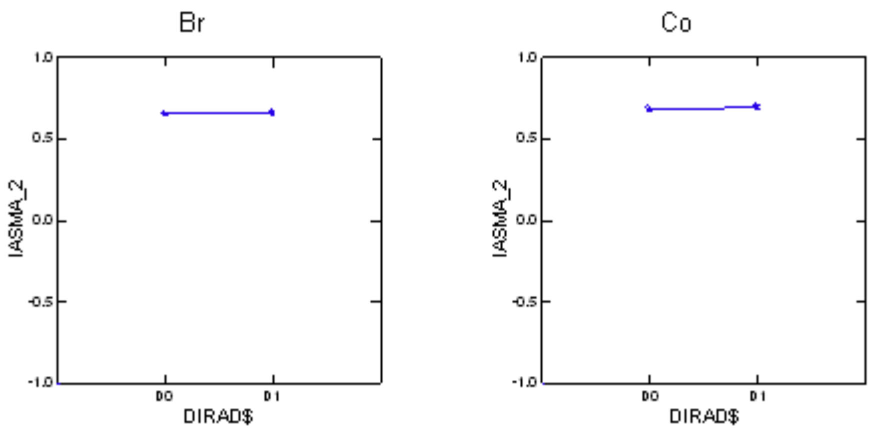

## Least Squares Means



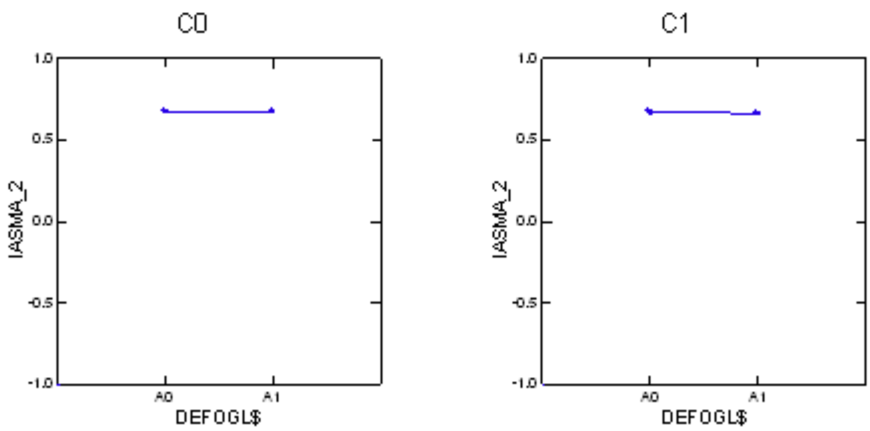
## Least Squares Means



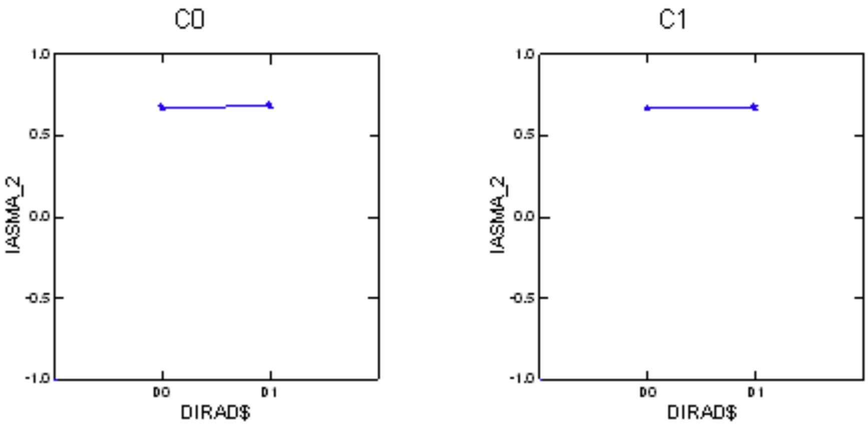

## Least Squares Means



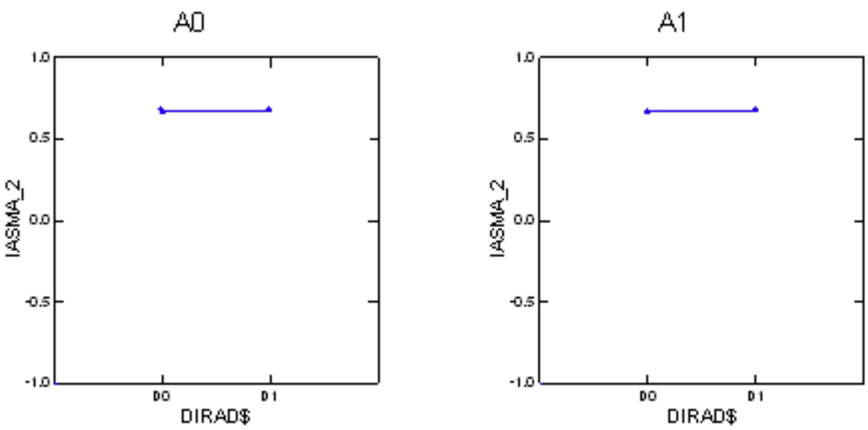

## Least Squares Means



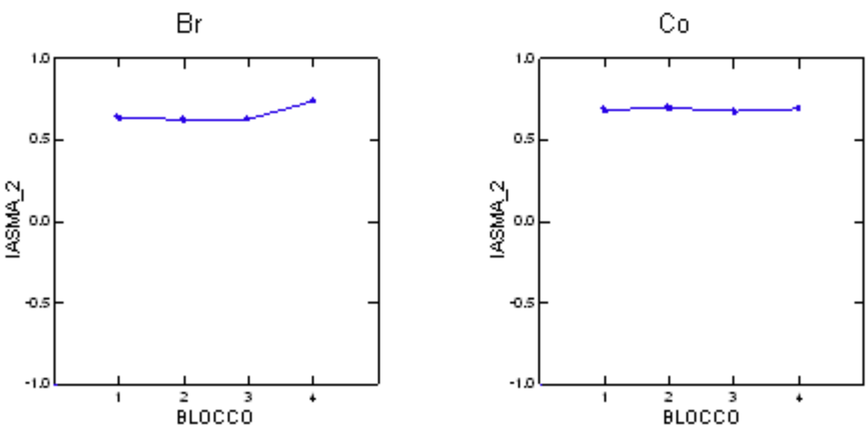
## Least Squares Means

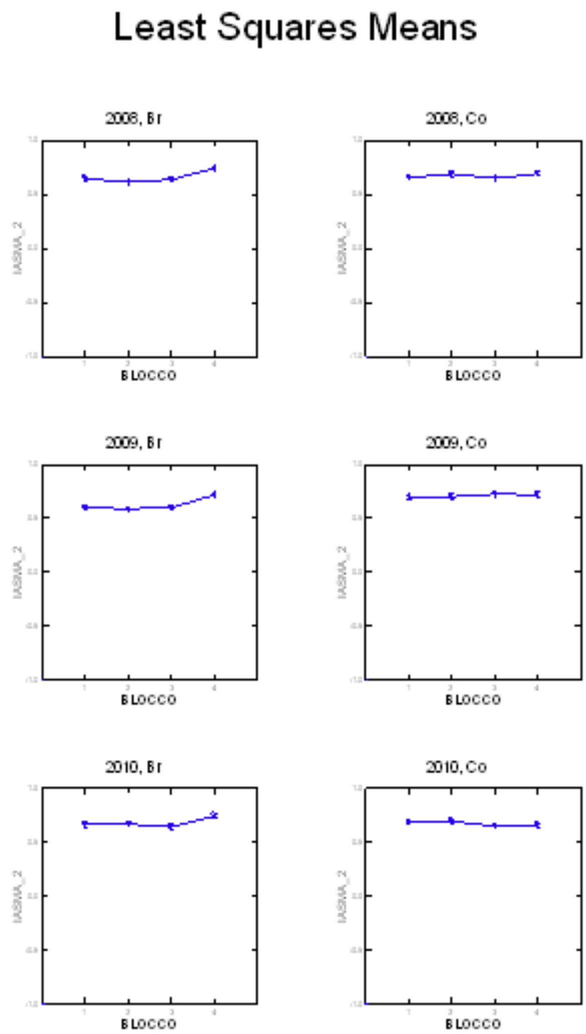



## Least Squares Means




## Least Squares Means






```
*** WARNING *** :

Case 212 is an Outlier (Studentized Residual : -3.682)

Durbin-Watson D Statistic    ¦ 1.836
First Order Autocorrelation  ¦ 0.081
```

**Information Criteria**

```
AIC              ¦ -771.131
AIC (Corrected)  ¦ -749.410
Schwarz's BIC    ¦ -640.832
```

▼General Linear Model

## IASMA3 2008-2009-2010

```
Data for the following results were selected according to
      SELECT (VARIETA$ = 'Sangiovese')

Effects coding used for categorical variables in model.
The categorical values encountered during processing are

Variables              ¦                  Levels
```

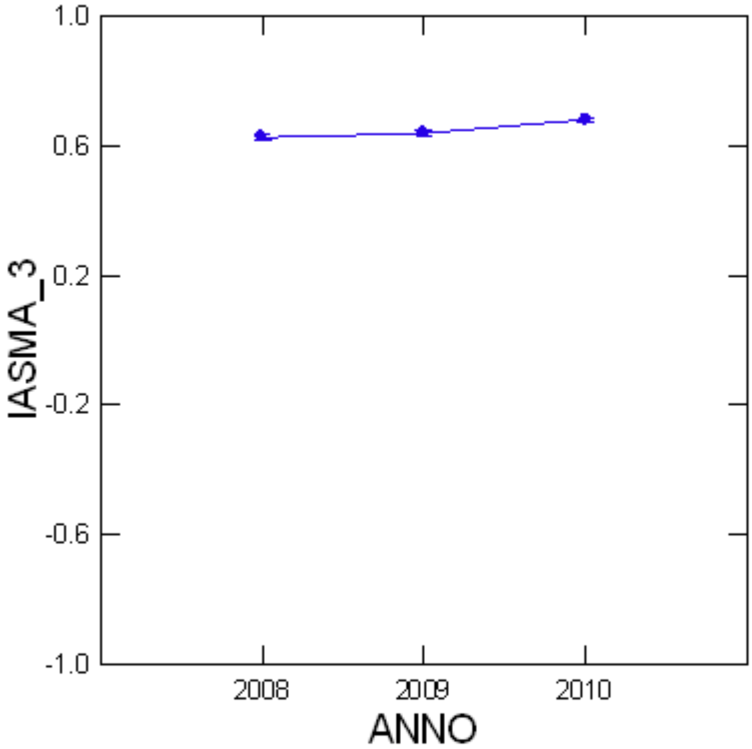
| | |
|---|---|
| ANNO (3 levels) | 2,008.000 2,009.000 2,010.000 |
| LOCALITA$ (2 levels) | Br Co |
| BLOCCO (4 levels) | 1.000 2.000 3.000 4.000 |
| N_GEMME$ (2 levels) | C0 C1 |
| DEFOGL$ (2 levels) | A0 A1 |
| DIRAD$ (2 levels) | D0 D1 |

| | |
|---|---|
| Dependent Variable | IASMA_3 |
| N | 192 |
| Multiple R | 0.935 |
| Squared Multiple R | 0.874 |

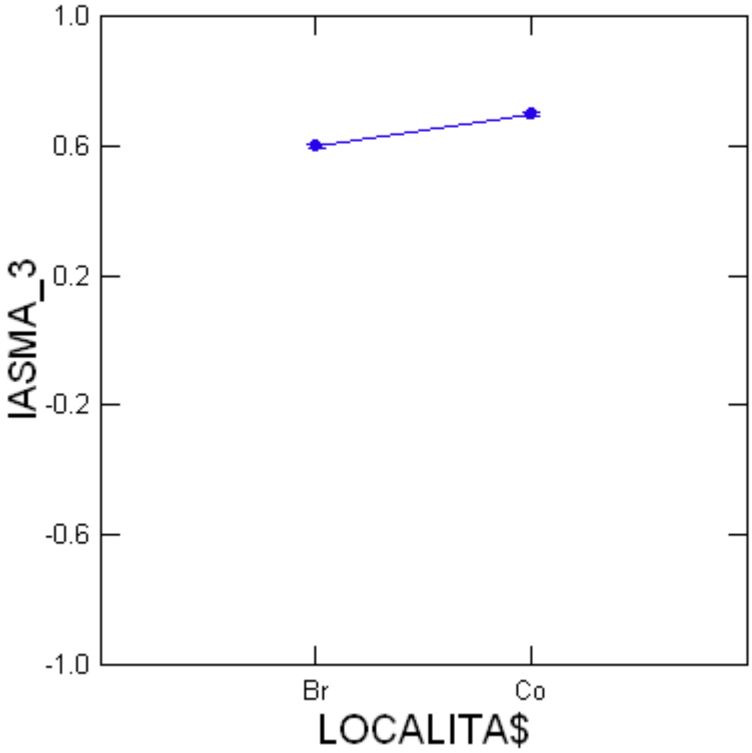
**Analysis of Variance**

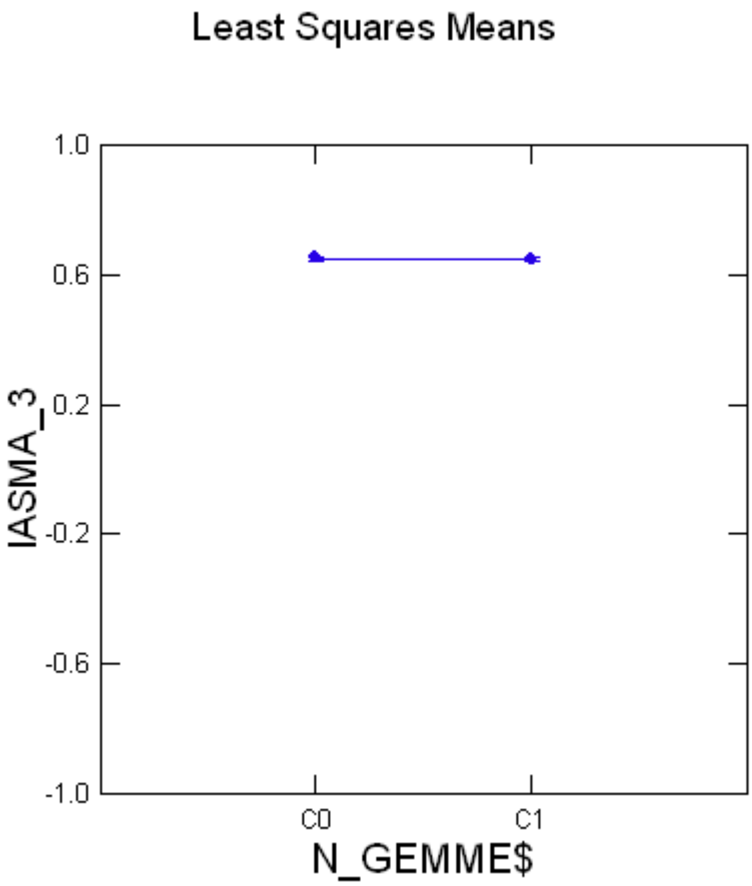
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.102 | 2 | 0.051 | 58.193 | 0.000 |
| LOCALITA$ | 0.346 | 1 | 0.346 | 392.787 | 0.000 |
| N_GEMME$ | 0.001 | 1 | 0.001 | 1.209 | 0.273 |
| DEFOGL$ | 0.000 | 1 | 0.000 | 0.348 | 0.556 |
| DIRAD$ | 0.008 | 1 | 0.008 | 8.854 | 0.003 |
| LOCALITA$*ANNO | 0.037 | 2 | 0.018 | 20.975 | 0.000 |
| N_GEMME$*ANNO | 0.002 | 2 | 0.001 | 1.292 | 0.278 |
| DEFOGL$*ANNO | 0.002 | 2 | 0.001 | 0.935 | 0.395 |
| DIRAD$*ANNO | 0.001 | 2 | 0.001 | 0.572 | 0.566 |
| N_GEMME$*LOCALITA$ | 0.001 | 1 | 0.001 | 1.088 | 0.299 |
| DEFOGL$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.000 | 0.999 |
| DIRAD$*LOCALITA$ | 0.003 | 1 | 0.003 | 3.119 | 0.079 |
| DEFOGL$*N_GEMME$ | 0.001 | 1 | 0.001 | 0.875 | 0.351 |
| DIRAD$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.535 | 0.466 |
| DIRAD$*DEFOGL$ | 0.001 | 1 | 0.001 | 1.241 | 0.267 |
| BLOCCO(LOCALITA$) | 0.224 | 6 | 0.037 | 42.310 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.117 | 12 | 0.010 | 11.076 | 0.000 |
| Error | 0.135 | 153 | 0.001 | | |

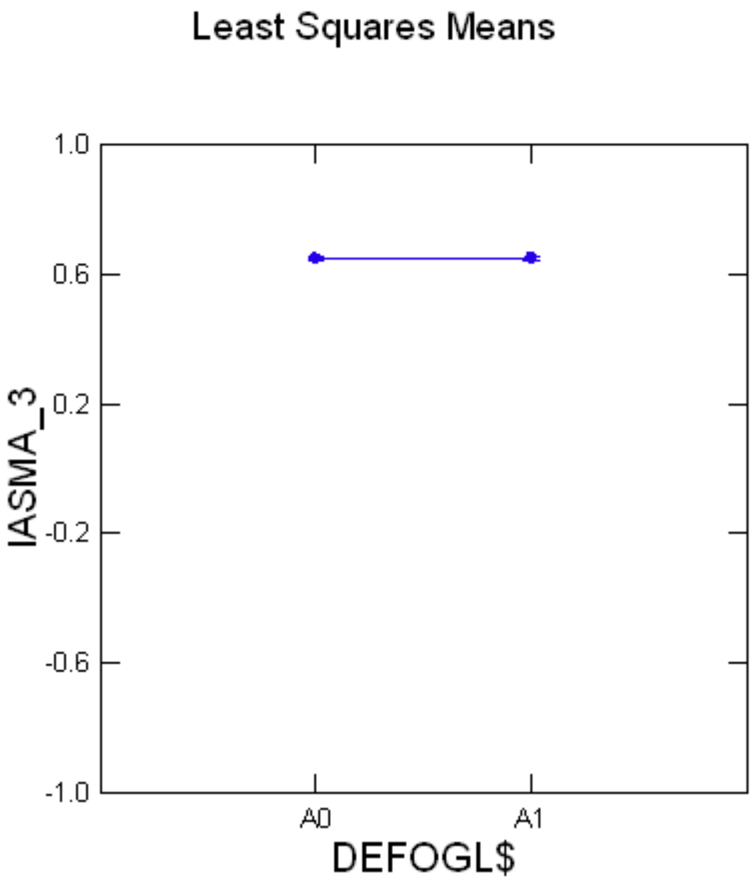
Least Squares Means



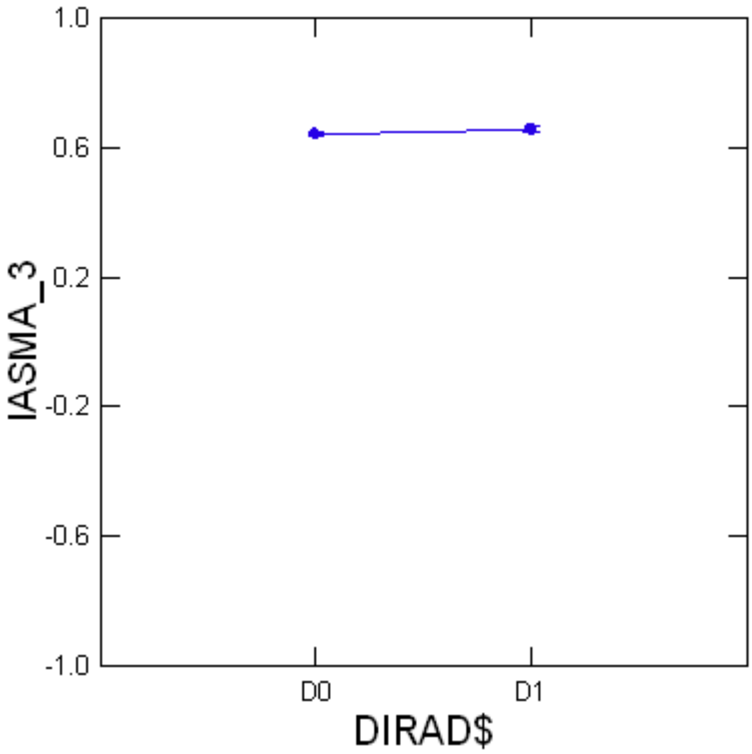

Least Squares Means



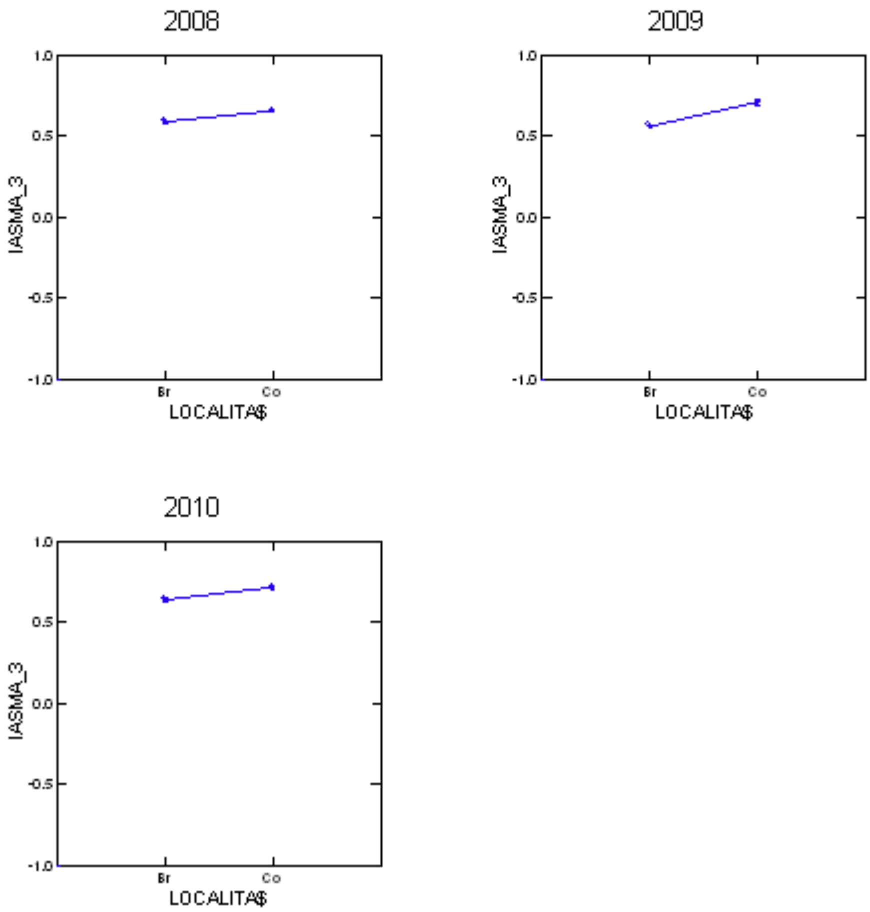

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_3
C0
C1
N_GEMME$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_3
A0
A1
DEFOGL$

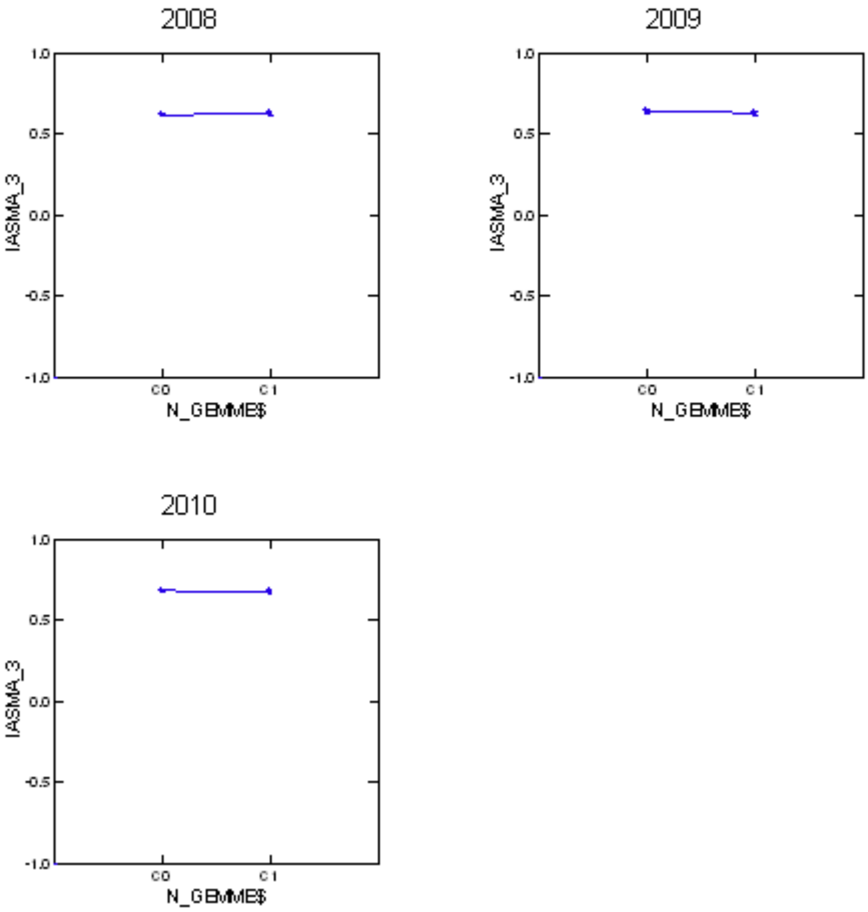
Least Squares Means



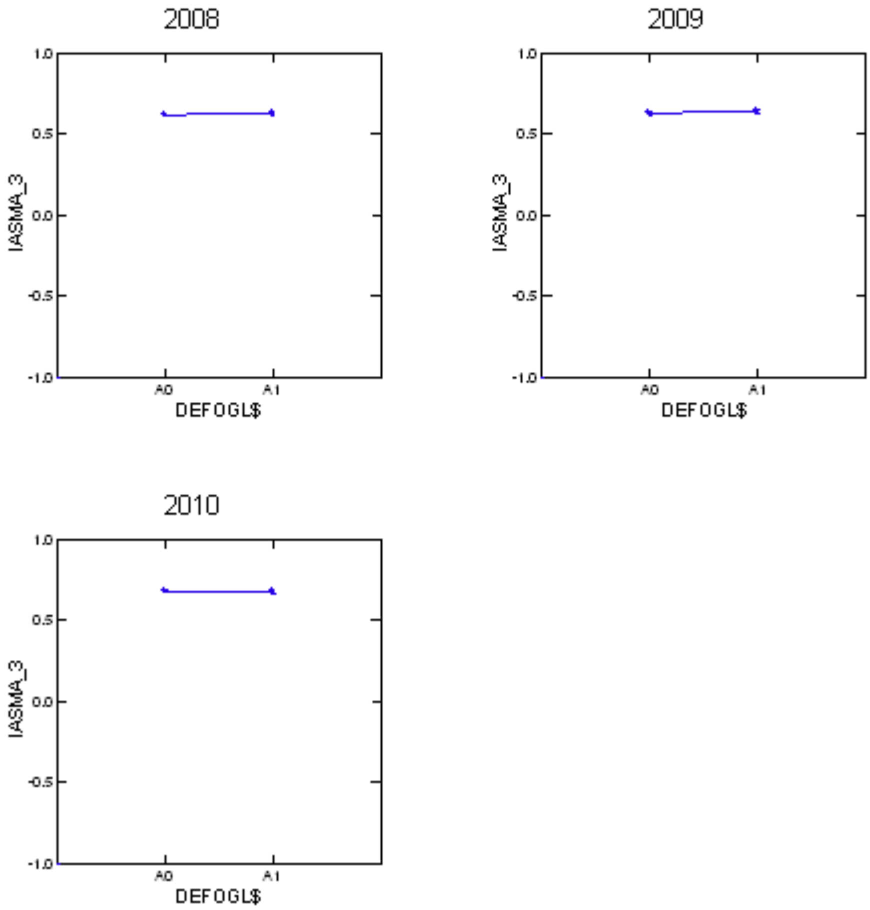
## Least Squares Means



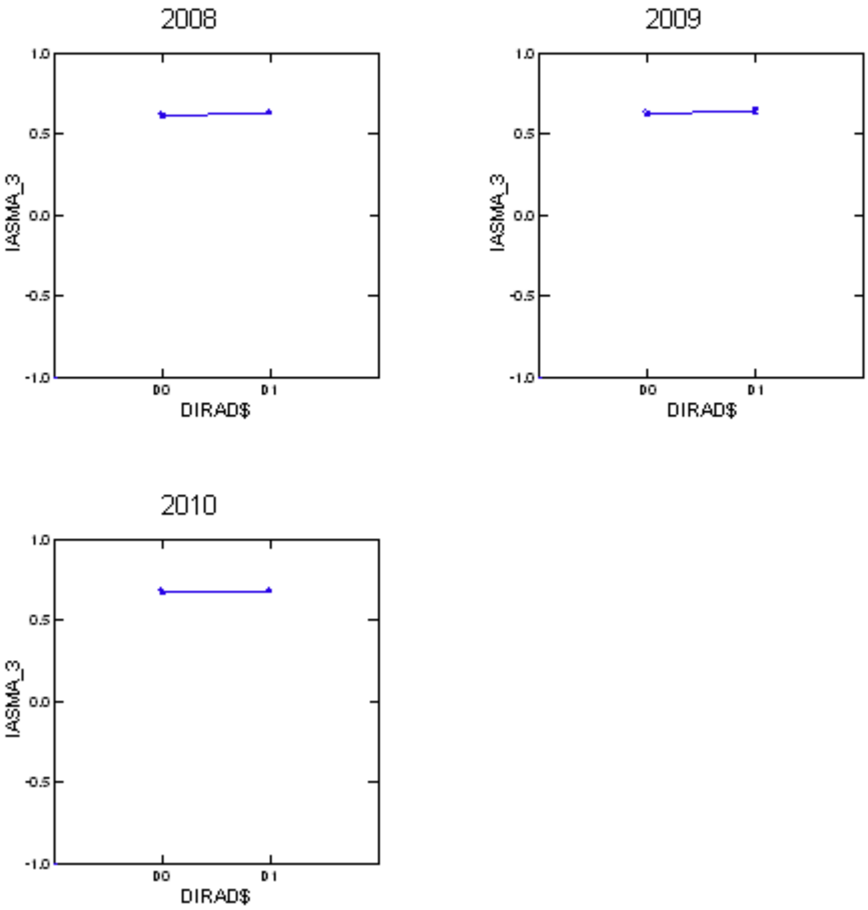
# Least Squares Means



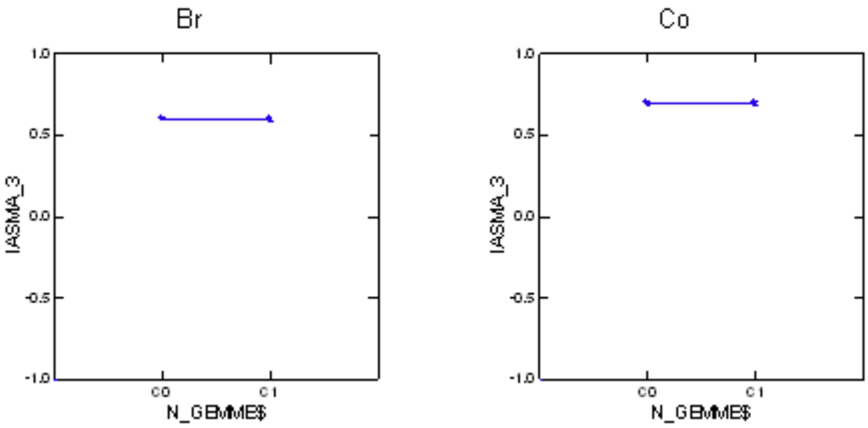
## Least Squares Means



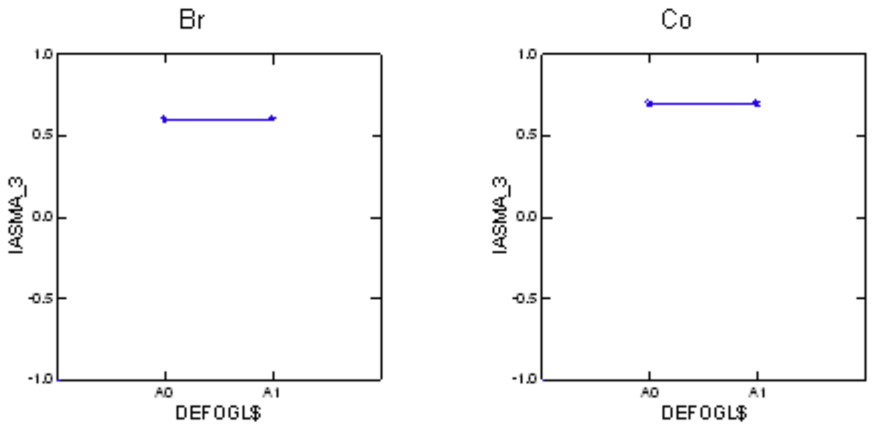
## Least Squares Means



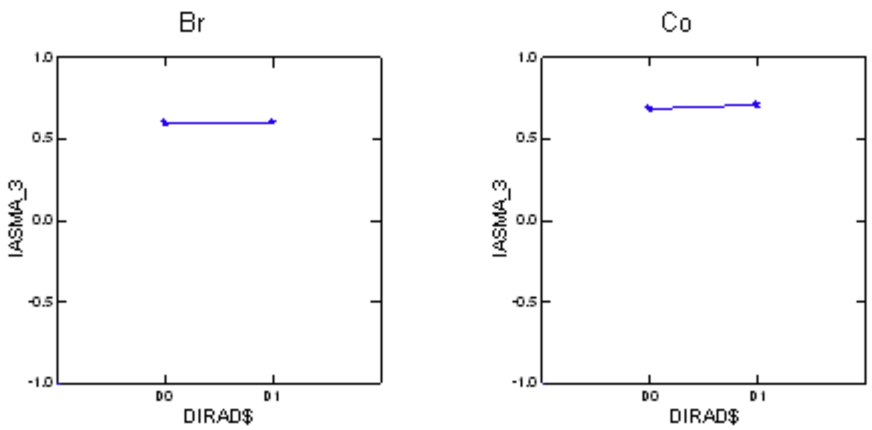

## Least Squares Means



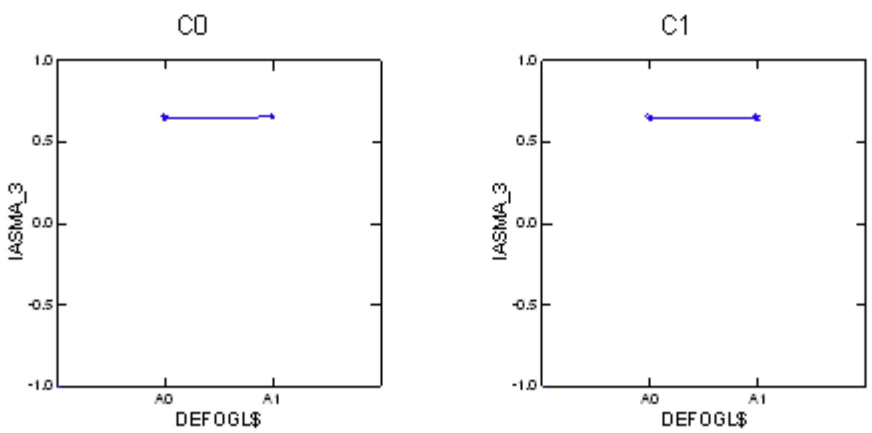
## Least Squares Means



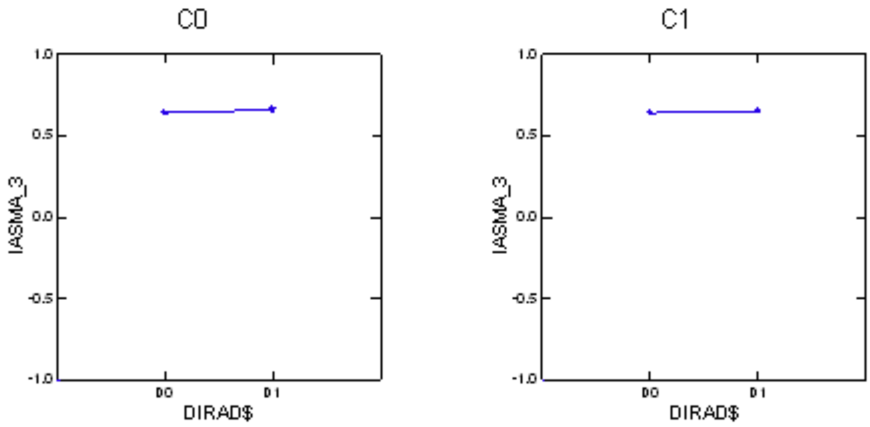

## Least Squares Means



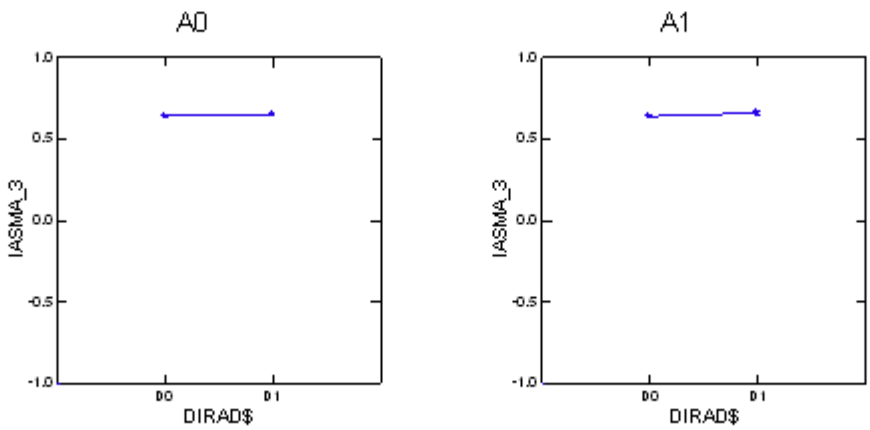

## Least Squares Means



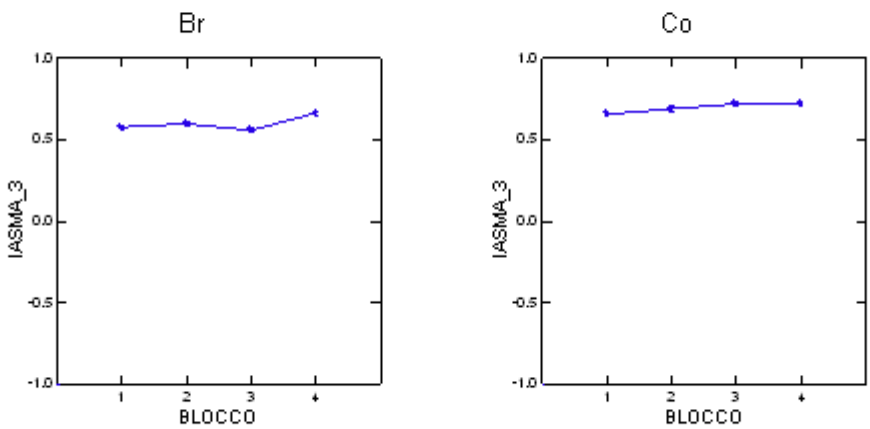
## Least Squares Means



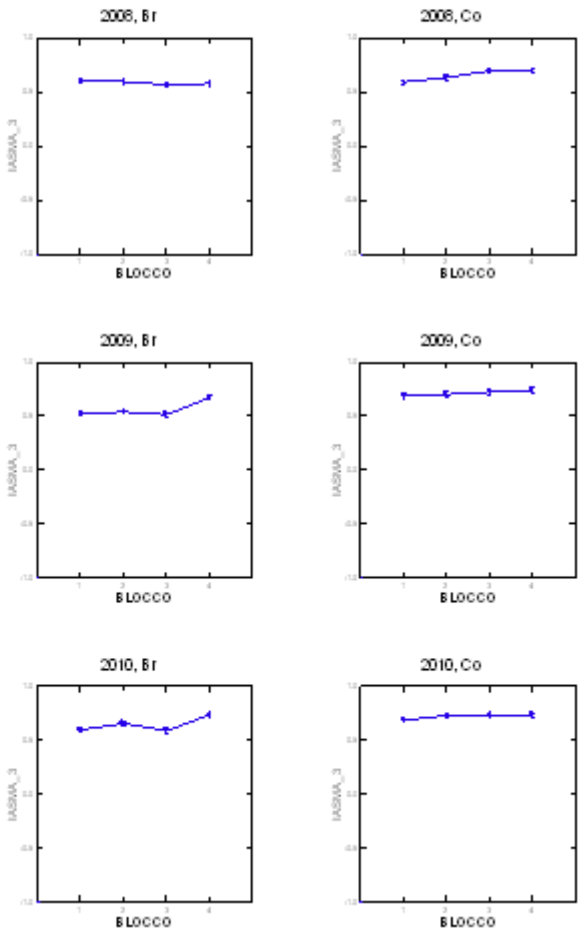

## Least Squares Means




## Least Squares Means



## Least Squares Means




| | |
|---|---|
| Durbin-Watson D Statistic | 1.857 |
| First Order Autocorrelation | 0.068 |

**Information Criteria**

| | |
|---|---|
| AIC | -769.454 |
| AIC (Corrected) | -747.732 |
| Schwarz's BIC | -639.154 |

▼General Linear Model

## DIPROVE1 2008-2009-2010

Data for the following results were selected according to
SELECT (VARIETA$ = 'Sangiovese')

Effects coding used for categorical variables in model.
The categorical values encountered during processing are

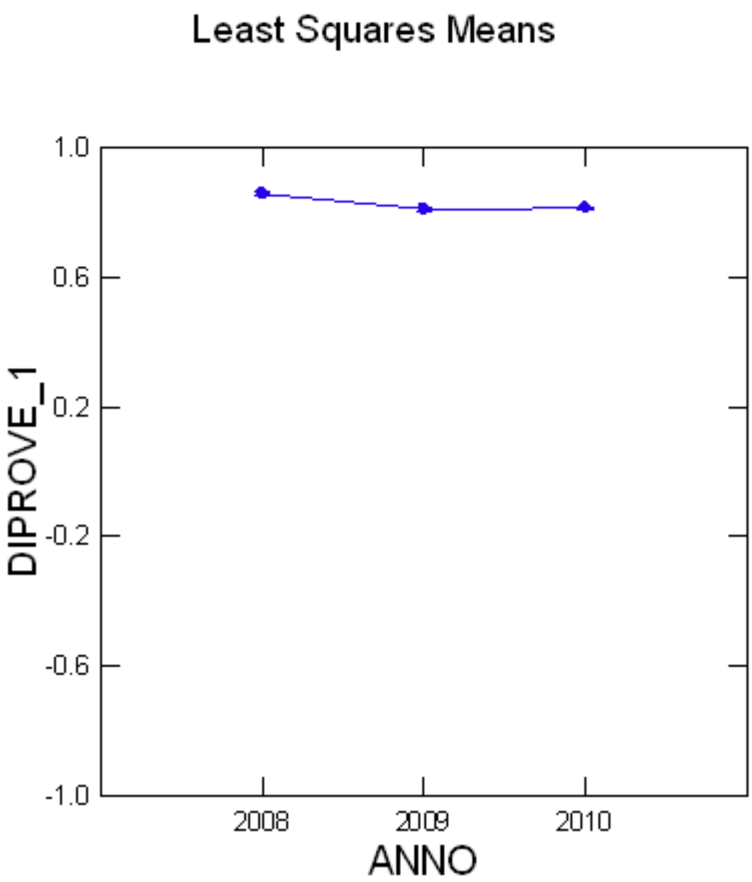
| Variables | Levels | | | |
|---|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 | |
| LOCALITA$ (2 levels) | Br | Co | | |
| BLOCCO (4 levels) | 1.000 | 2.000 | 3.000 | 4.000 |
| N_GEMME$ (2 levels) | C0 | C1 | | |

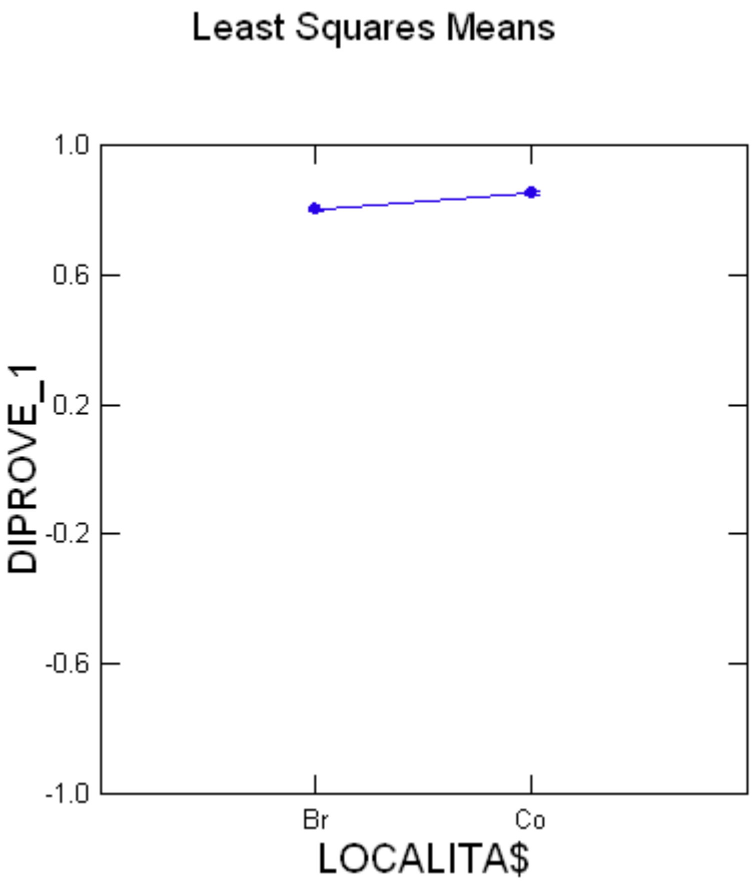
| | | |
|---|---|---|
| DEFOGL$ (2 levels) | A0 | A1 |
| DIRAD$ (2 levels) | D0 | D1 |

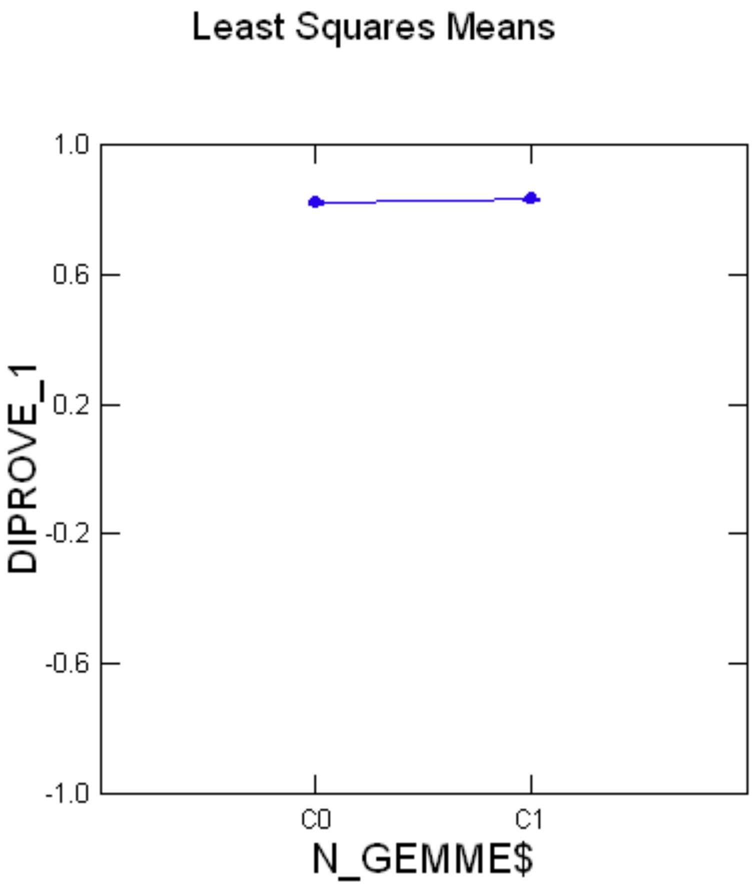
| | |
|---|---|
| Dependent Variable | DIPROVE_1 |
| N | 192 |
| Multiple R | 0.934 |
| Squared Multiple R | 0.873 |

**Analysis of Variance**

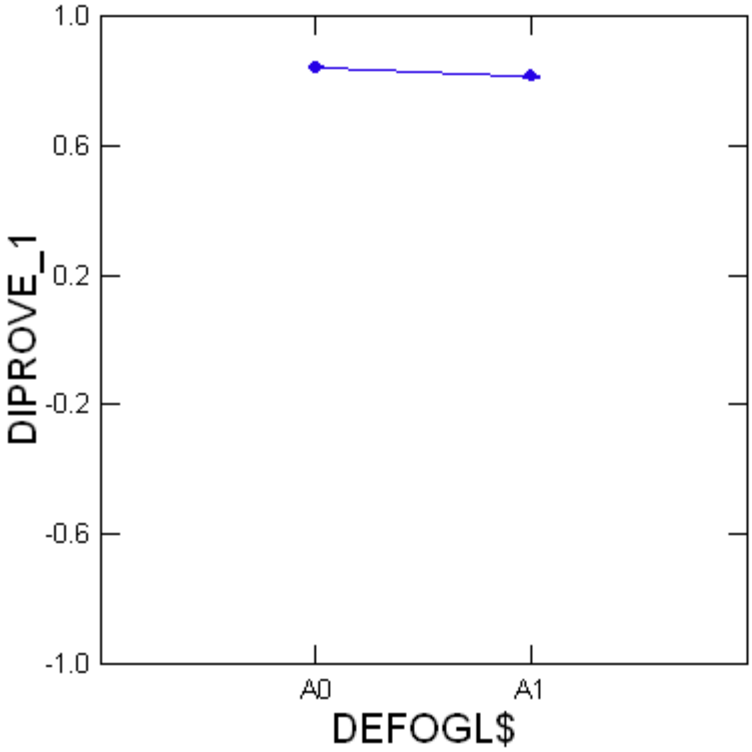
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.079 | 2 | 0.039 | 116.702 | 0.000 |
| LOCALITA$ | 0.094 | 1 | 0.094 | 278.378 | 0.000 |
| N_GEMME$ | 0.006 | 1 | 0.006 | 18.034 | 0.000 |
| DEFOGL$ | 0.037 | 1 | 0.037 | 108.738 | 0.000 |
| DIRAD$ | 0.001 | 1 | 0.001 | 1.490 | 0.224 |
| LOCALITA$*ANNO | 0.027 | 2 | 0.014 | 40.341 | 0.000 |
| N_GEMME$*ANNO | 0.000 | 2 | 0.000 | 0.382 | 0.683 |
| DEFOGL$*ANNO | 0.012 | 2 | 0.006 | 17.568 | 0.000 |
| DIRAD$*ANNO | 0.000 | 2 | 0.000 | 0.298 | 0.743 |
| N_GEMME$*LOCALITA$ | 0.003 | 1 | 0.003 | 8.747 | 0.004 |
| DEFOGL$*LOCALITA$ | 0.011 | 1 | 0.011 | 32.846 | 0.000 |
| DIRAD$*LOCALITA$ | 0.000 | 1 | 0.000 | 1.093 | 0.297 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.333 | 0.565 |
| DIRAD$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.000 | 0.994 |
| DIRAD$*DEFOGL$ | 0.002 | 1 | 0.002 | 4.663 | 0.032 |
| BLOCCO(LOCALITA$) | 0.024 | 6 | 0.004 | 11.682 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.014 | 12 | 0.001 | 3.513 | 0.000 |
| Error | 0.052 | 153 | 0.000 | | |



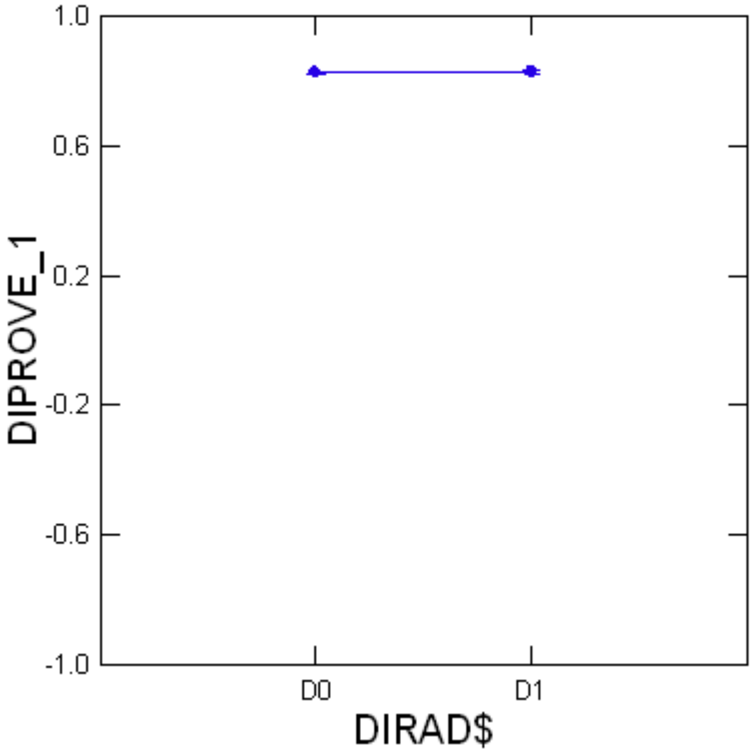

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_1
Br
Co
LOCALITA$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_1
C0
C1
N_GEMME$

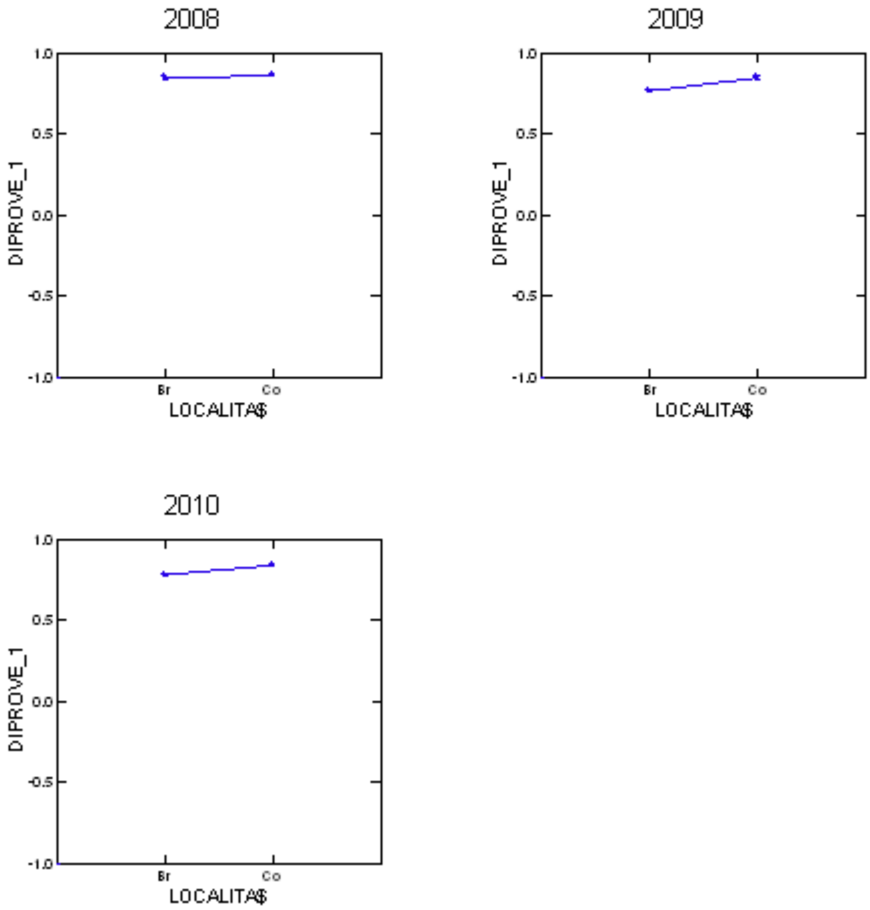
Least Squares Means



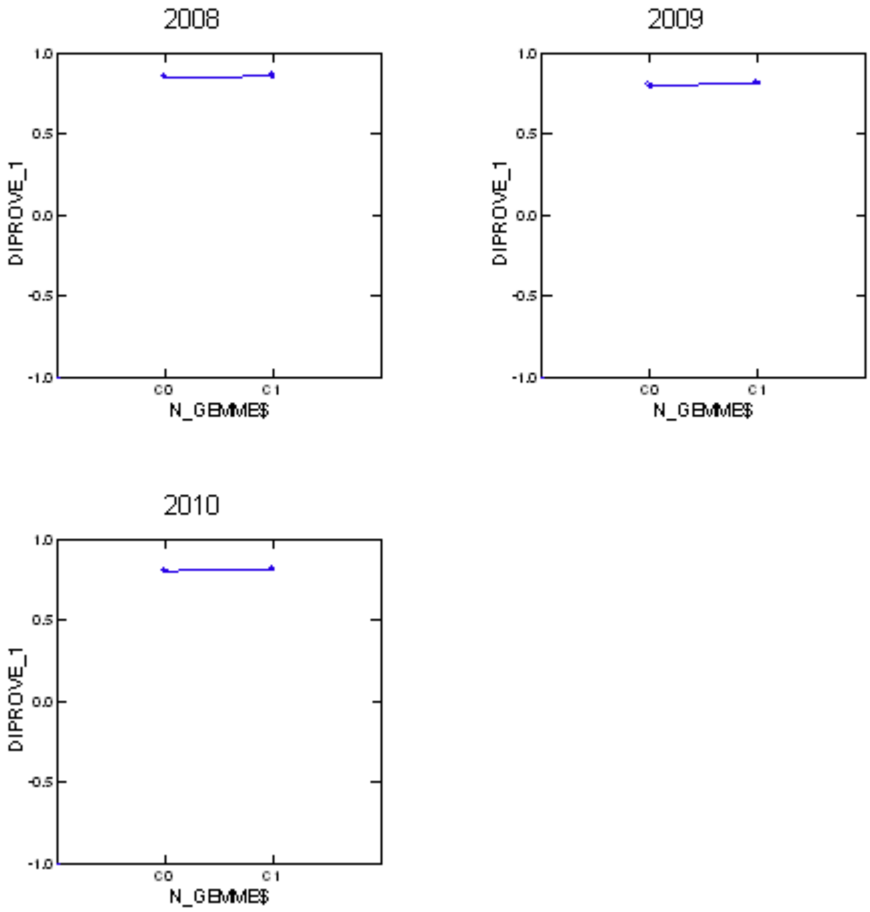

Least Squares Means



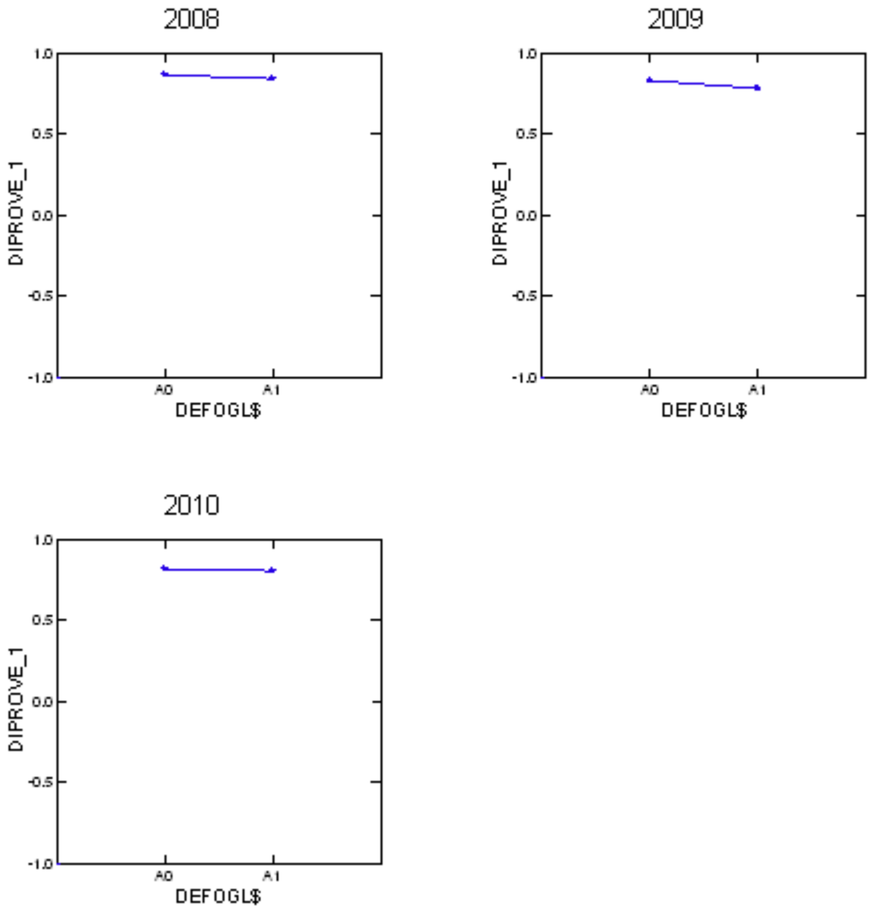
# Least Squares Means



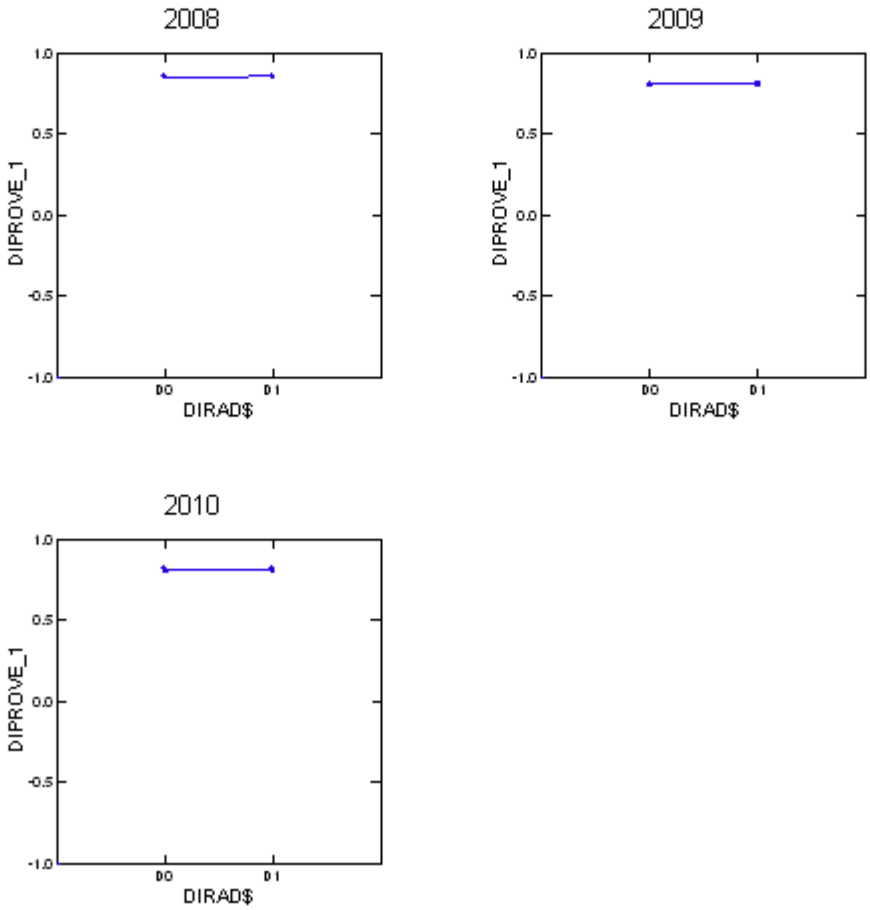
## Least Squares Means



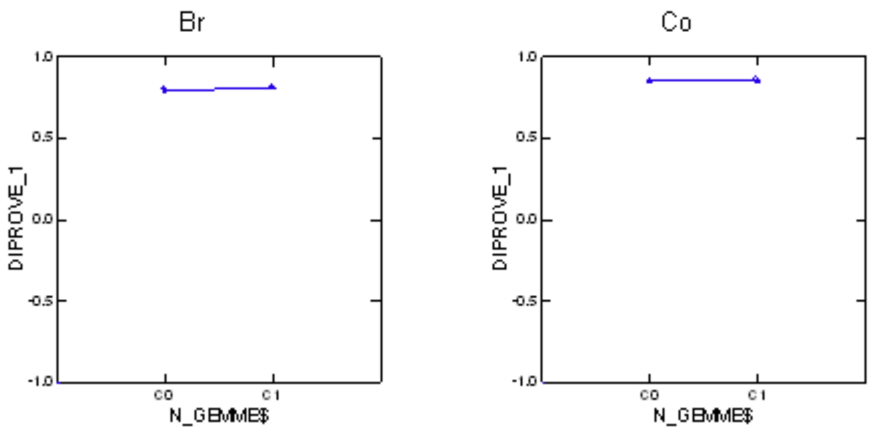
## Least Squares Means

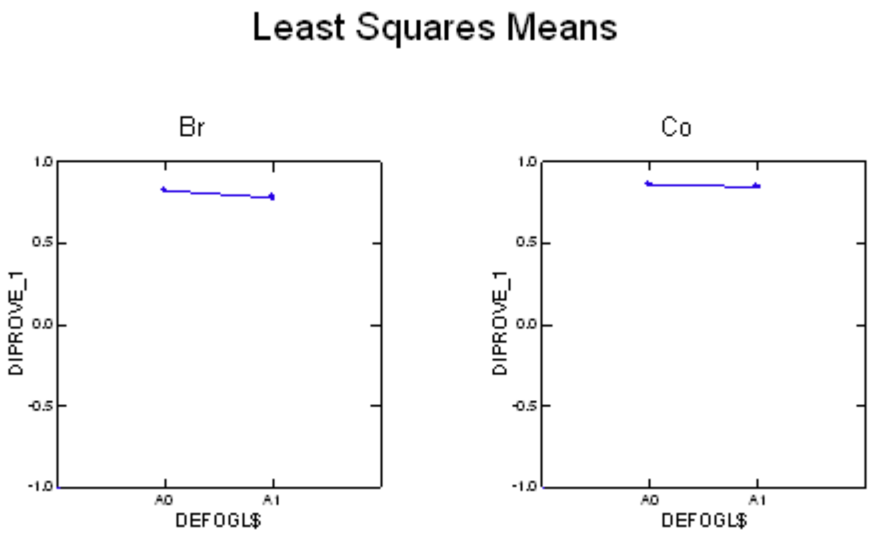


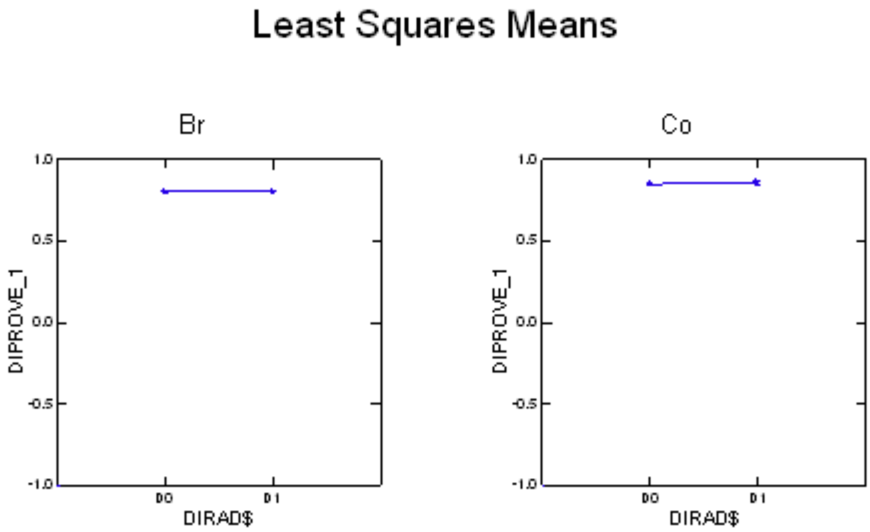
## Least Squares Means

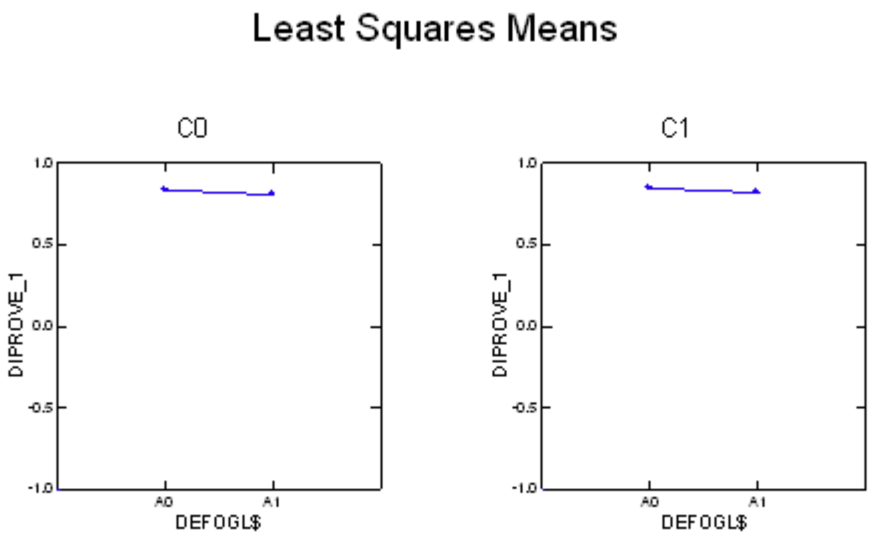


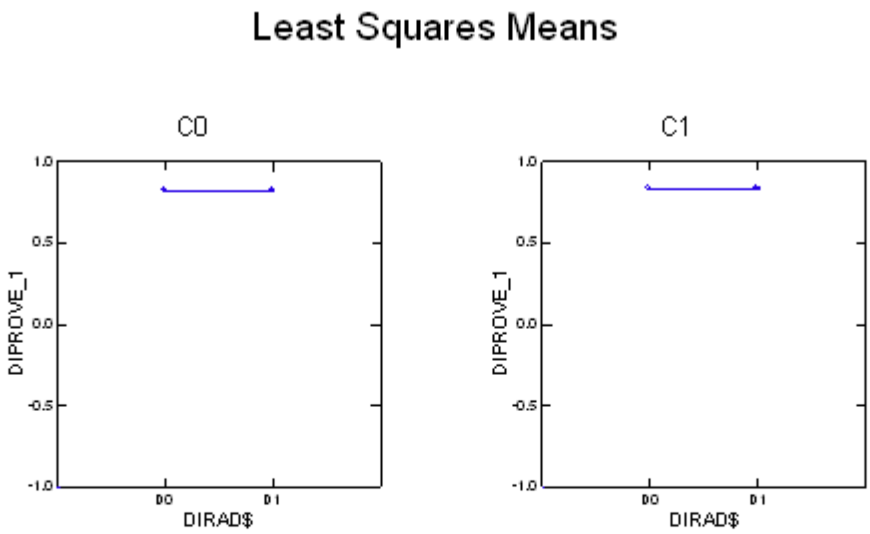

## Least Squares Means

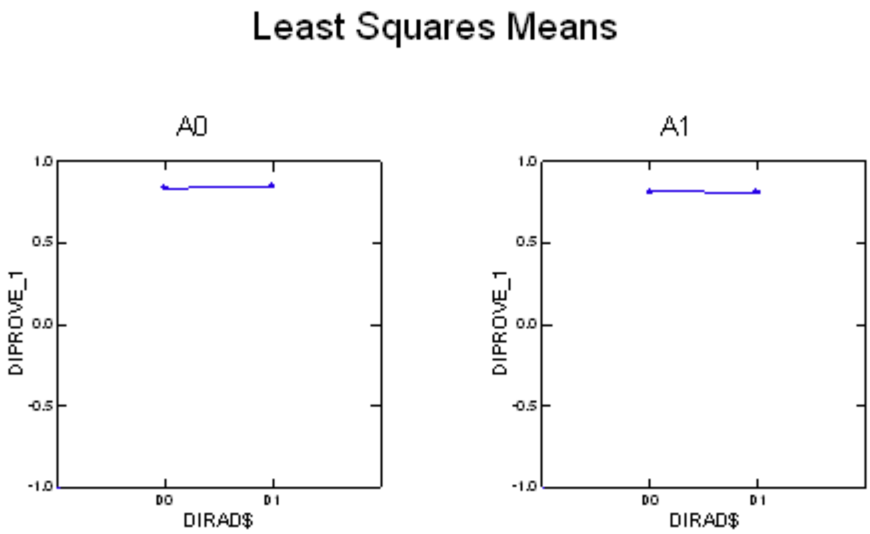


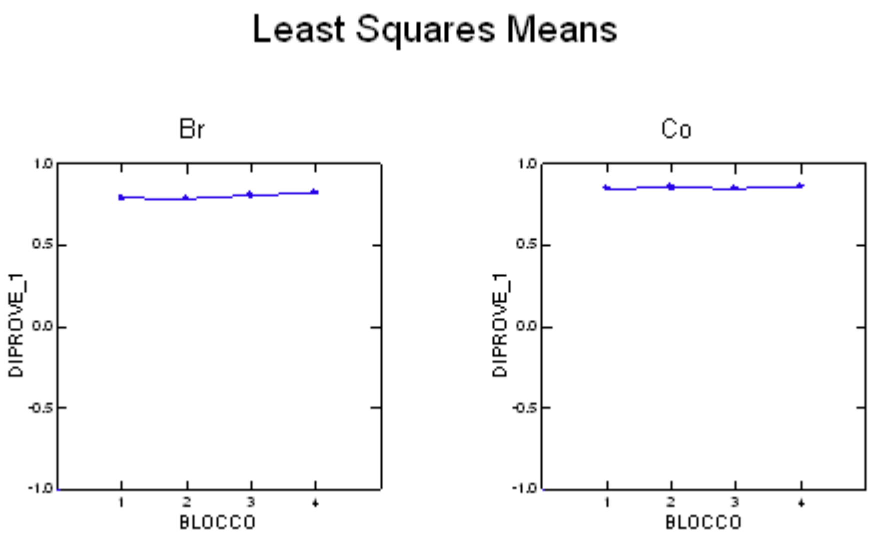

Least Squares Means
Br
Co
DIPROVE_1
1.0
0.5
0.0
-0.5
-1.0
A0
A1
DEFOGL$


Least Squares Means
Br
Co
DIPROVE_1
1.0
0.5
0.0
-0.5
-1.0
D0
D1
DIRAD$

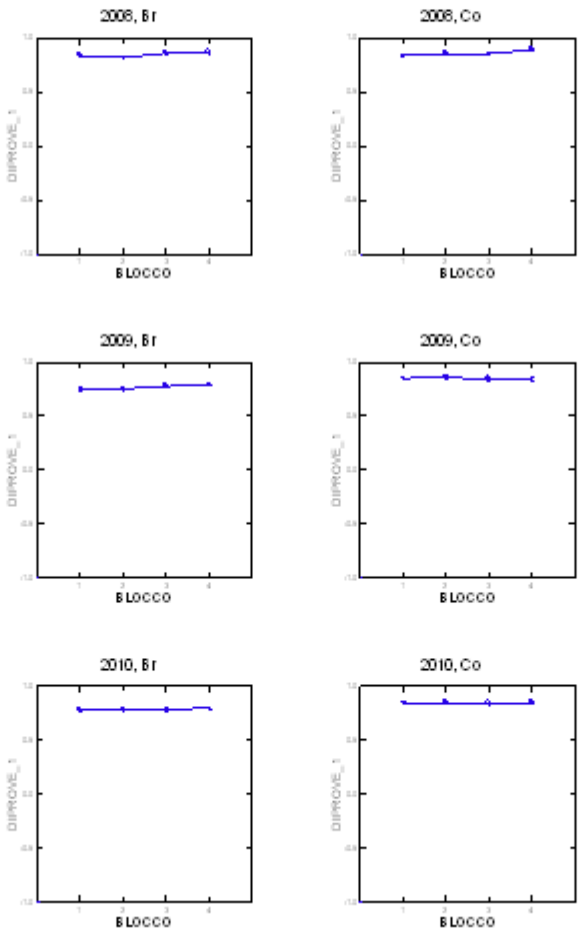

Least Squares Means
C0
C1
DIPROVE_1
1.0
0.5
0.0
-0.5
-1.0
A0
A1
DEFOGL$


Least Squares Means
C0
C1
DIPROVE_1
DIRAD$
D0
D1
1.0
0.5
0.0
-0.5
-1.0


Least Squares Means
A0
A1
DIPROVE_1
DIRAD$
D0
D1
1.0
0.5
0.0
-0.5
-1.0


Least Squares Means
Br
Co
DIPROVE_1
BLOCCO
1
2
3
4
1.0
0.5
0.0
-0.5
-1.0

## Least Squares Means




*** WARNING *** :

Case 49 is an Outlier (Studentized Residual : -6.300)

| | |
|---|---|
| Durbin-Watson D Statistic | 1.981 |
| First Order Autocorrelation | 0.009 |

**Information Criteria**

| | |
|---|---|
| AIC | -953.517 |
| AIC (Corrected) | -931.795 |
| Schwarz's BIC | -823.217 |

▼General Linear Model

## DIPROVE2 2008-2009-2010

Data for the following results were selected according to
SELECT (VARIETA$ = 'Sangiovese')

Effects coding used for categorical variables in model.
The categorical values encountered during processing are

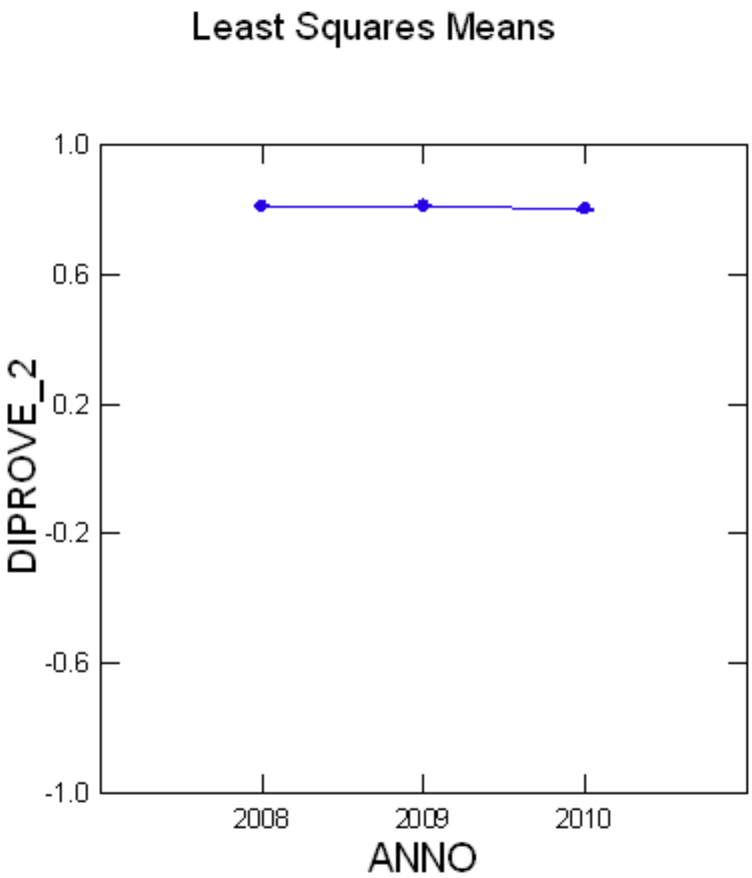
| Variables | Levels | | |
|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 |

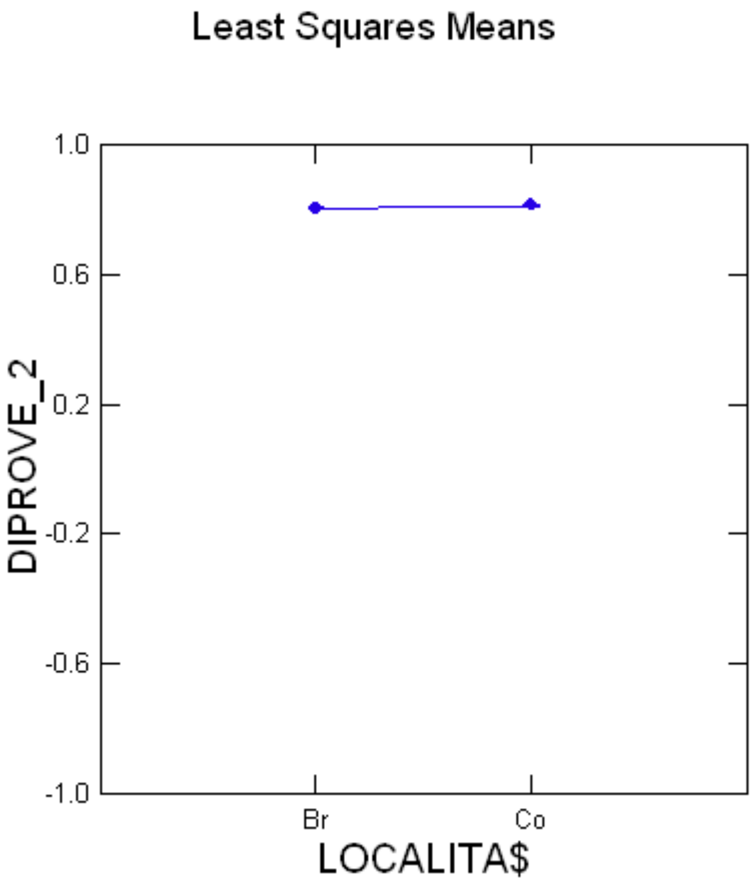
| | | | | |
|---|---|---|---|---|
| LOCALITA$ (2 levels) | Br | Co | | |
| BLOCCO (4 levels) | 1.000 | 2.000 | 3.000 | 4.000 |
| N_GEMME$ (2 levels) | C0 | C1 | | |
| DEFOGL$ (2 levels) | A0 | A1 | | |
| DIRAD$ (2 levels) | D0 | D1 | | |

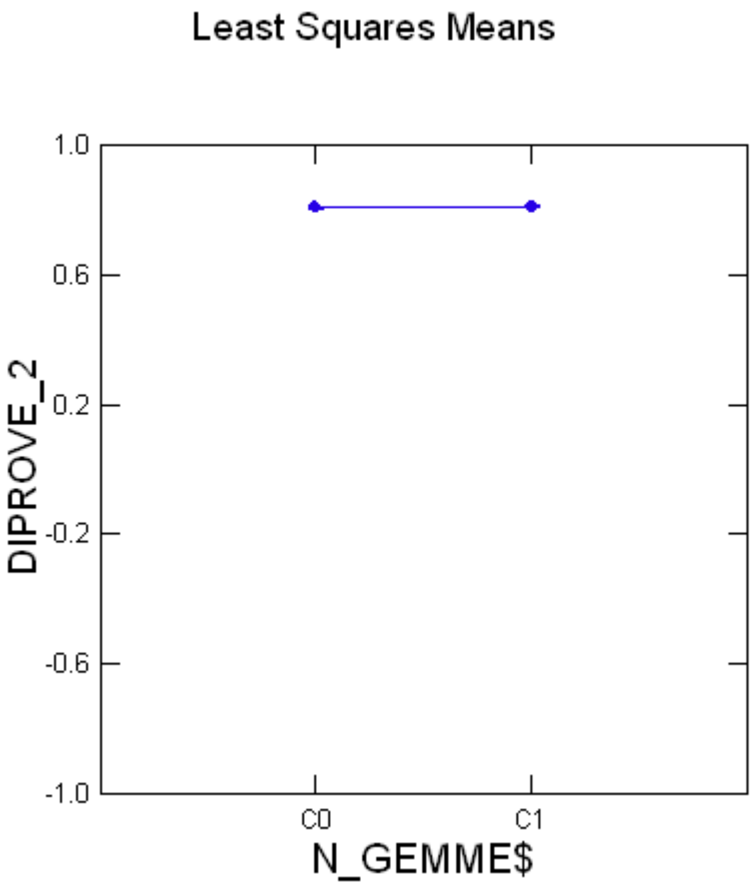
| Dependent Variable | DIPROVE_2 |
|---|---|
| N | 192 |
| Multiple R | 0.857 |
| Squared Multiple R | 0.734 |

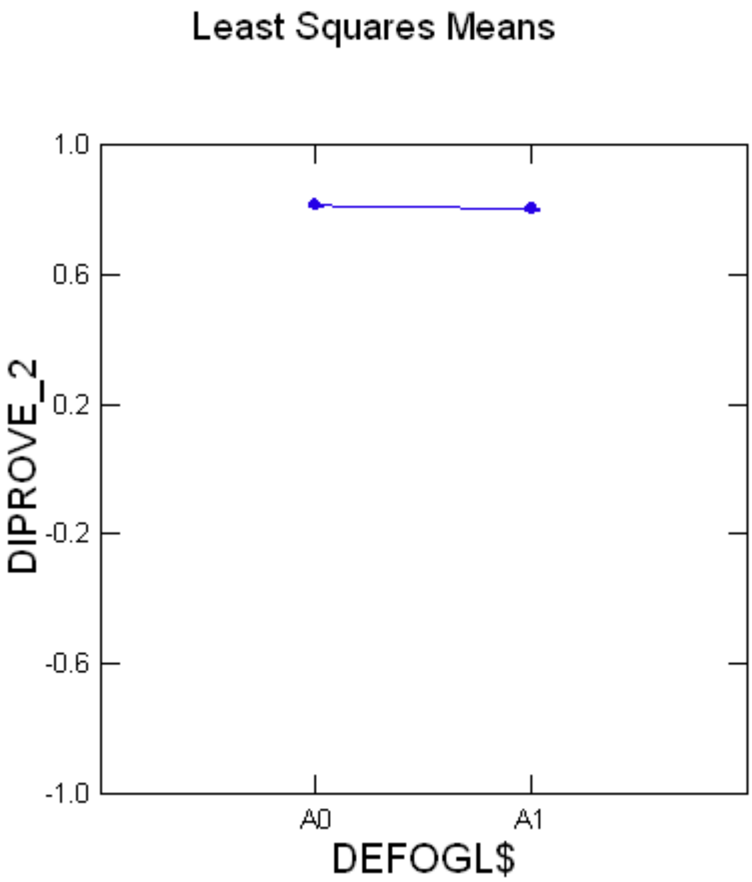
**Analysis of Variance**

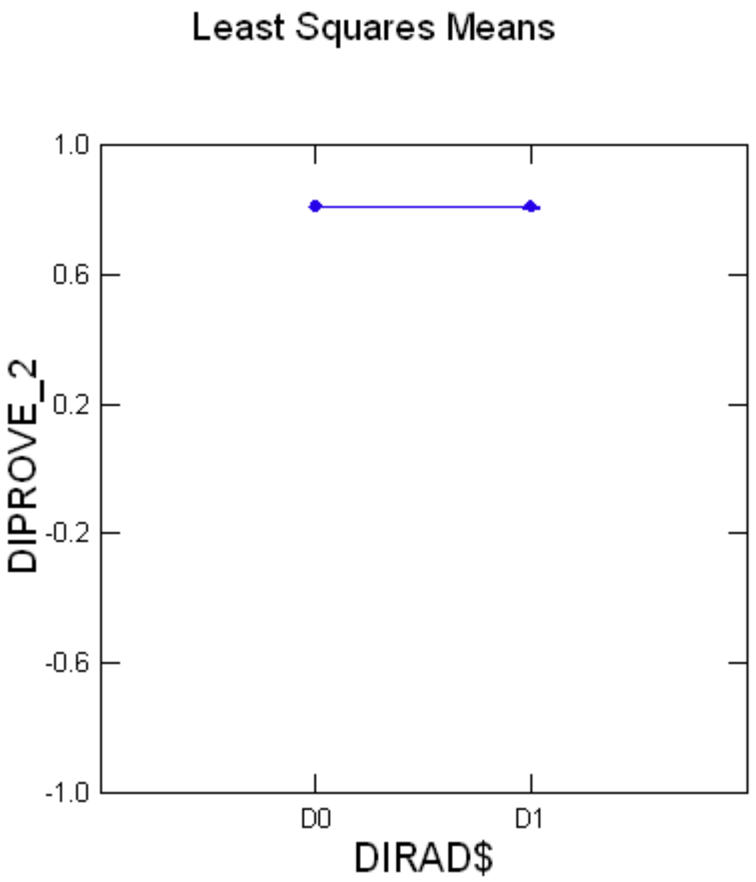
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.003 | 2 | 0.002 | 7.468 | 0.001 |
| LOCALITA$ | 0.003 | 1 | 0.003 | 12.289 | 0.001 |
| N_GEMME$ | 0.000 | 1 | 0.000 | 1.333 | 0.250 |
| DEFOGL$ | 0.005 | 1 | 0.005 | 24.655 | 0.000 |
| DIRAD$ | 0.000 | 1 | 0.000 | 0.592 | 0.443 |
| LOCALITA$*ANNO | 0.014 | 2 | 0.007 | 34.064 | 0.000 |
| N_GEMME$*ANNO | 0.001 | 2 | 0.000 | 2.418 | 0.093 |
| DEFOGL$*ANNO | 0.002 | 2 | 0.001 | 4.916 | 0.009 |
| DIRAD$*ANNO | 0.000 | 2 | 0.000 | 0.977 | 0.379 |
| N_GEMME$*LOCALITA$ | 0.000 | 1 | 0.000 | 1.859 | 0.175 |
| DEFOGL$*LOCALITA$ | 0.002 | 1 | 0.002 | 10.225 | 0.002 |
| DIRAD$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.415 | 0.520 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.546 | 0.461 |
| DIRAD$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.196 | 0.658 |
| DIRAD$*DEFOGL$ | 0.002 | 1 | 0.002 | 9.183 | 0.003 |
| BLOCCO(LOCALITA$) | 0.032 | 6 | 0.005 | 26.201 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.007 | 12 | 0.001 | 3.014 | 0.001 |
| Error | 0.031 | 153 | 0.000 | | |


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_2
2008
2009
2010
ANNO

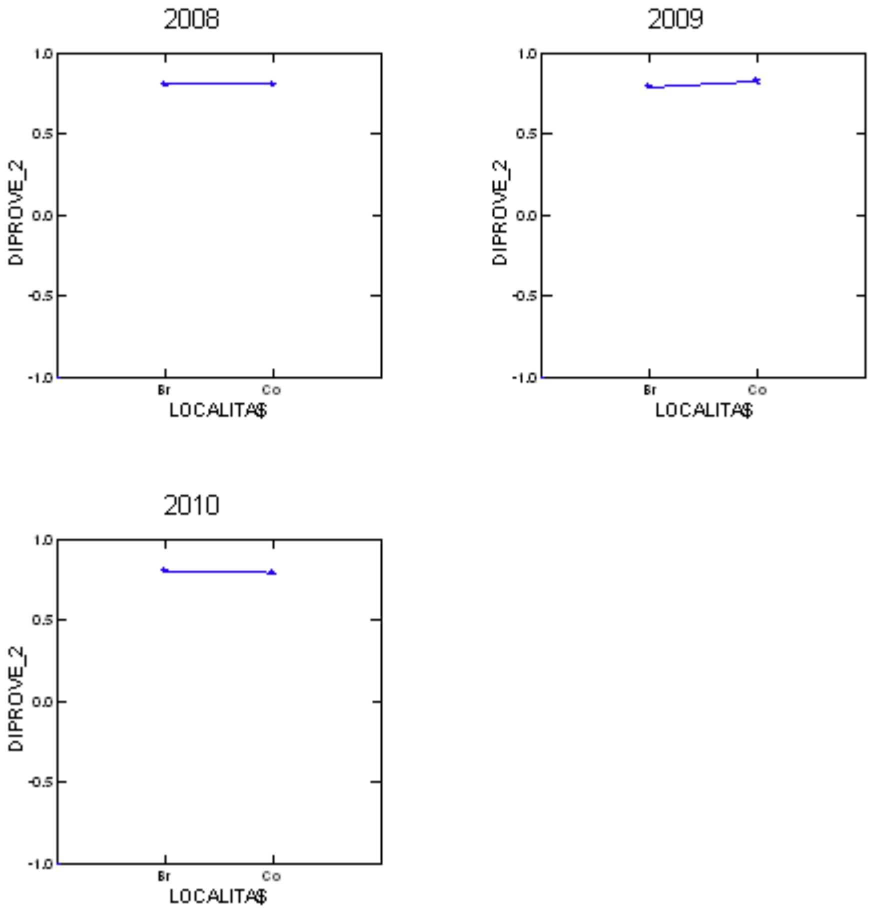

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_2
Br
Co
LOCALITA$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_2
C0
C1
N_GEMME$

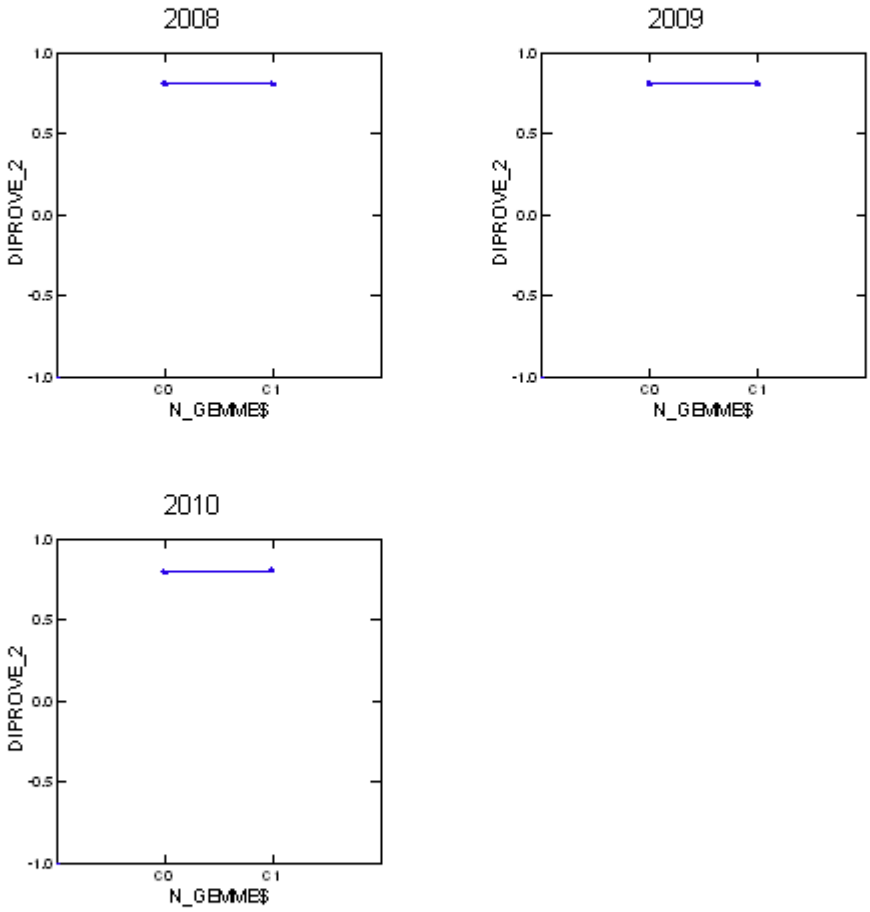

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_2
A0
A1
DEFOGL$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_2
D0
D1
DIRAD$

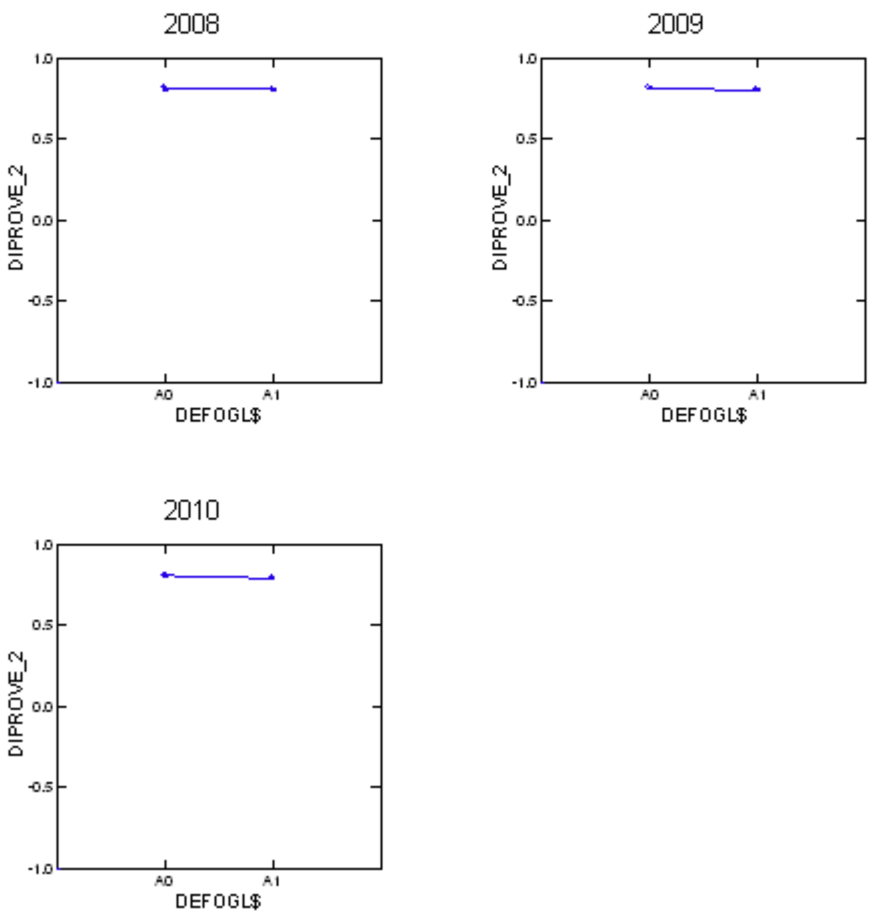
## Least Squares Means



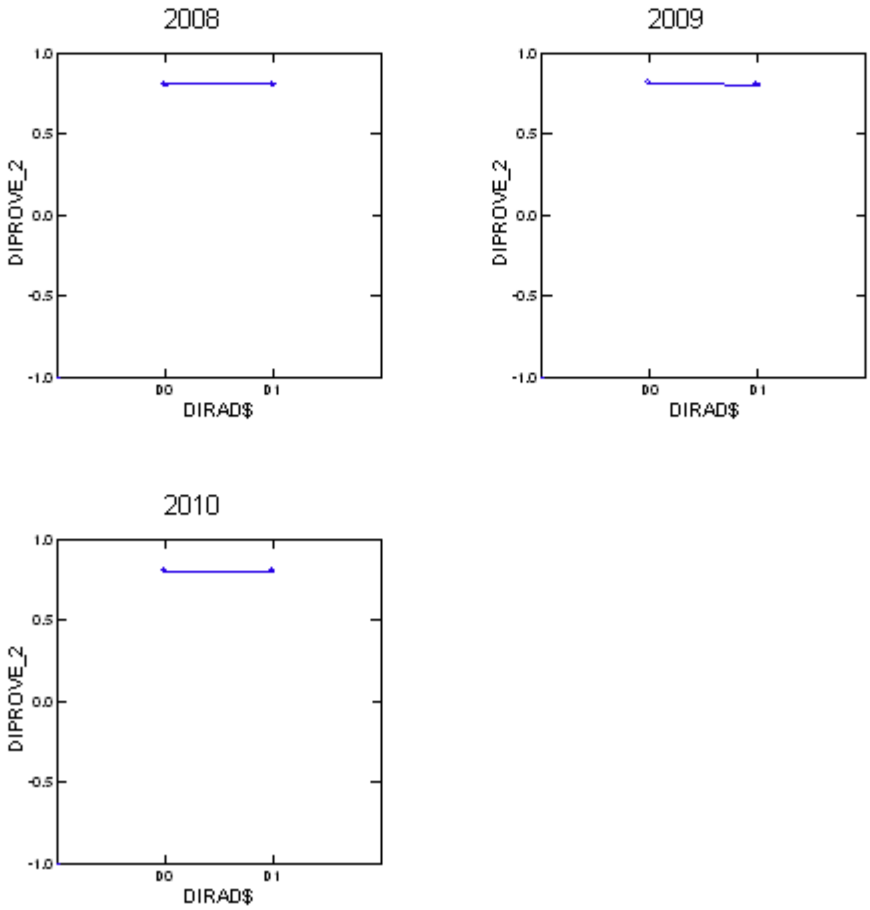
## Least Squares Means



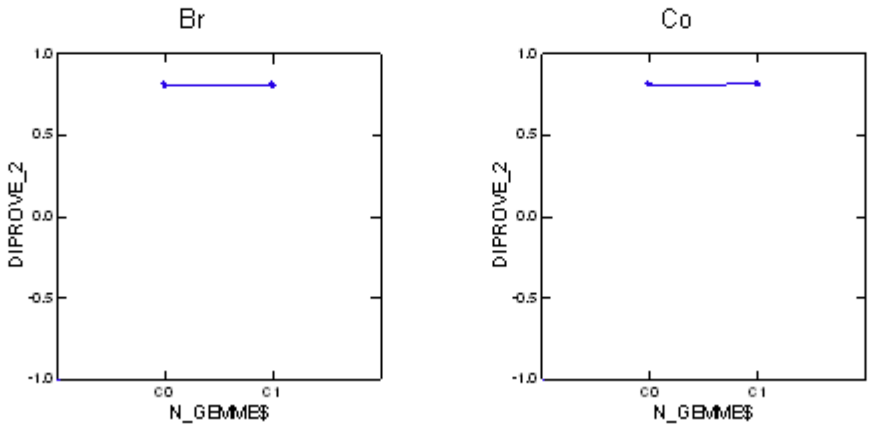
# Least Squares Means



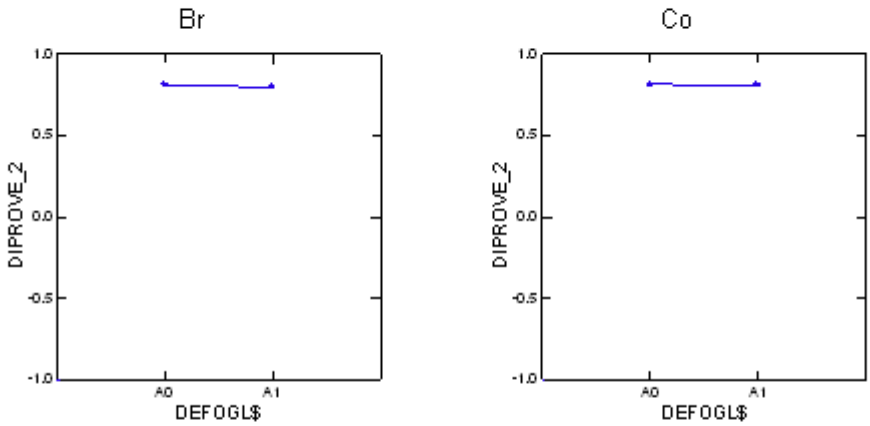
## Least Squares Means



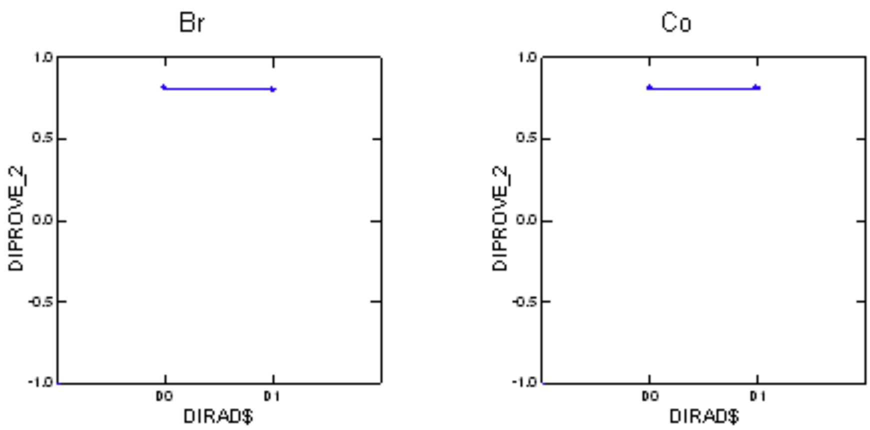

## Least Squares Means



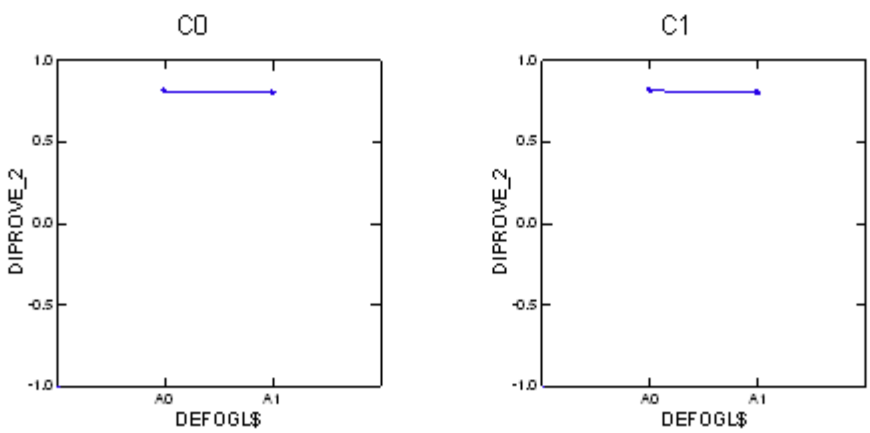
## Least Squares Means



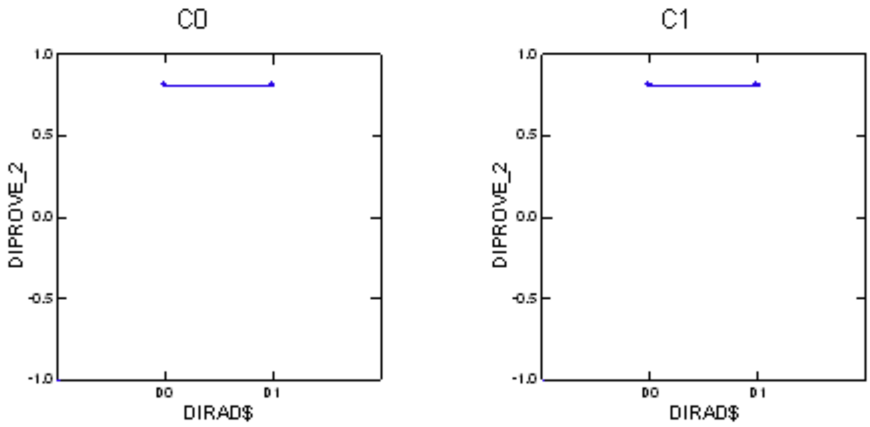

## Least Squares Means



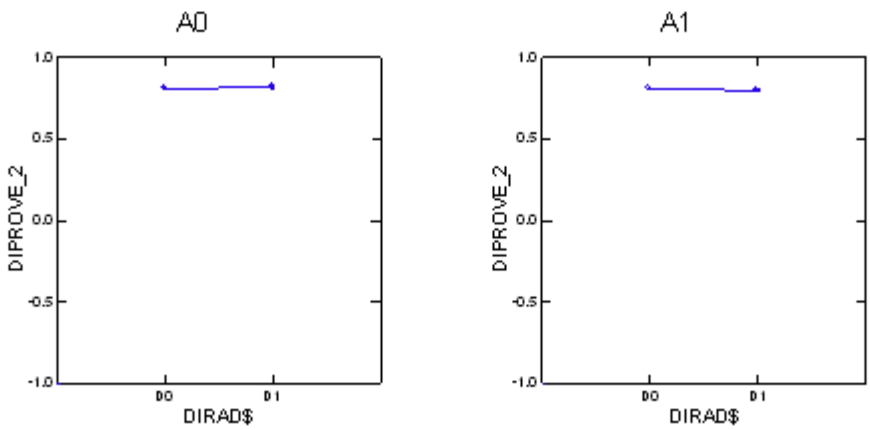

## Least Squares Means



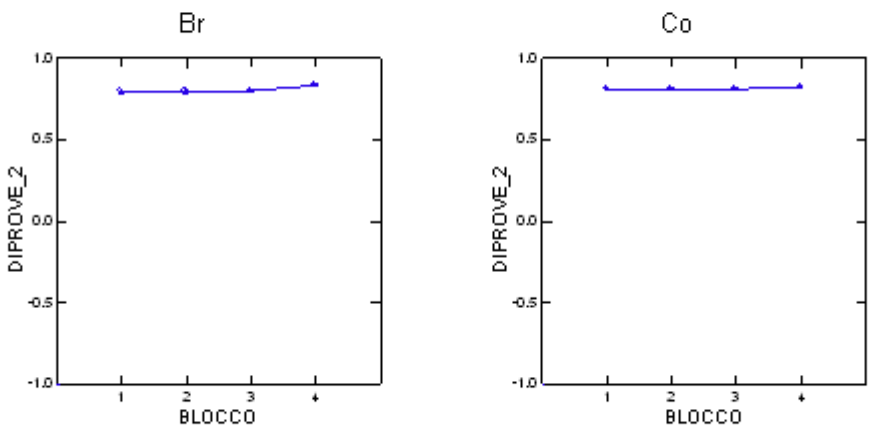
## Least Squares Means

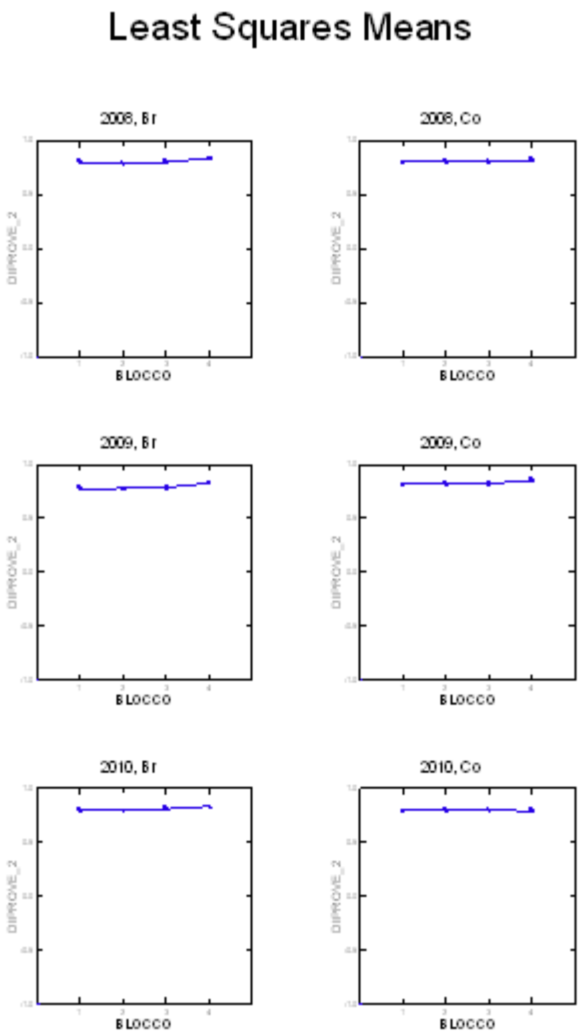



## Least Squares Means




## Least Squares Means






*** WARNING *** :

Case 48 is an Outlier (Studentized Residual : -5.115)
Case 49 is an Outlier (Studentized Residual : -3.837)

| | |
|---|---|
| Durbin-Watson D Statistic | 1.625 |
| First Order Autocorrelation | 0.187 |

**Information Criteria**

| | |
|---|---|
| AIC | -1,050.574 |
| AIC (Corrected) | -1,028.852 |
| Schwarz's BIC | -920.274 |

### ▼General Linear Model

## DIPROVE3 2008-2009-2010

Data for the following results were selected according to
      SELECT (VARIETA$ = 'Sangiovese')

Effects coding used for categorical variables in model.
The categorical values encountered during processing are

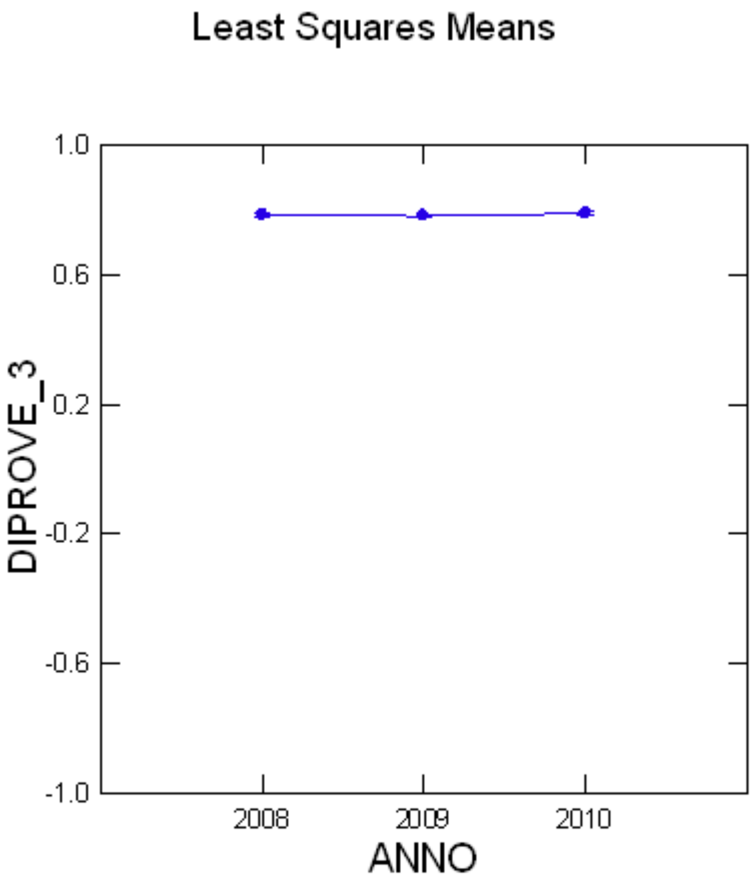
| Variables | Levels |
|---|---|

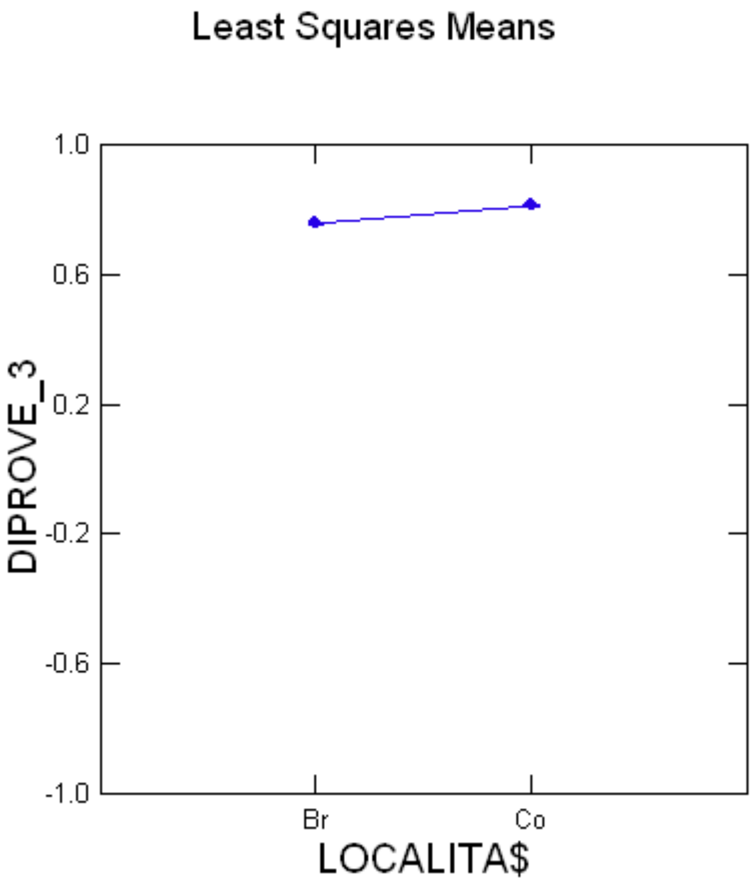
| | | | | | |
|---|---|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 | | |
| LOCALITA$ (2 levels) | Br | Co | | | |
| BLOCCO (4 levels) | 1.000 | 2.000 | 3.000 | 4.000 | |
| N_GEMME$ (2 levels) | C0 | C1 | | | |
| DEFOGL$ (2 levels) | A0 | A1 | | | |
| DIRAD$ (2 levels) | D0 | D1 | | | |

| | |
|---|---|
| Dependent Variable | DIPROVE_3 |
| N | 192 |
| Multiple R | 0.940 |
| Squared Multiple R | 0.884 |

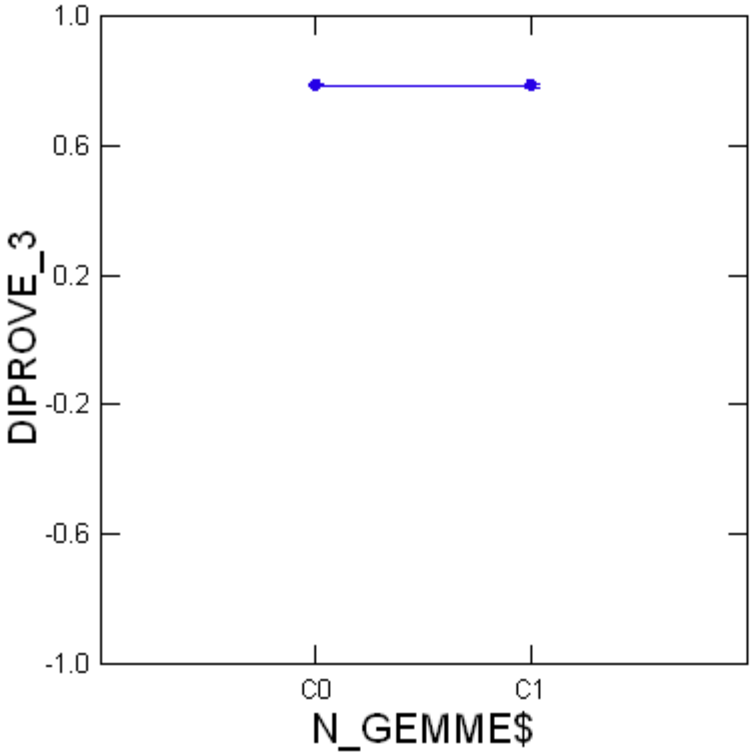
**Analysis of Variance**

| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.002 | 2 | 0.001 | 3.259 | 0.041 |
| LOCALITA$ | 0.106 | 1 | 0.106 | 395.054 | 0.000 |
| N_GEMME$ | 0.000 | 1 | 0.000 | 0.185 | 0.668 |
| DEFOGL$ | 0.000 | 1 | 0.000 | 1.251 | 0.265 |
| DIRAD$ | 0.000 | 1 | 0.000 | 0.031 | 0.861 |
| LOCALITA$*ANNO | 0.019 | 2 | 0.010 | 36.072 | 0.000 |
| N_GEMME$*ANNO | 0.001 | 2 | 0.001 | 1.971 | 0.143 |
| DEFOGL$*ANNO | 0.002 | 2 | 0.001 | 4.491 | 0.013 |
| DIRAD$*ANNO | 0.000 | 2 | 0.000 | 0.327 | 0.721 |
| N_GEMME$*LOCALITA$ | 0.001 | 1 | 0.001 | 3.686 | 0.057 |
| DEFOGL$*LOCALITA$ | 0.002 | 1 | 0.002 | 7.169 | 0.008 |
| DIRAD$*LOCALITA$ | 0.001 | 1 | 0.001 | 3.174 | 0.077 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.121 | 0.728 |
| DIRAD$*N_GEMME$ | 0.001 | 1 | 0.001 | 3.235 | 0.074 |
| DIRAD$*DEFOGL$ | 0.001 | 1 | 0.001 | 3.795 | 0.053 |
| BLOCCO(LOCALITA$) | 0.133 | 6 | 0.022 | 82.473 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.008 | 12 | 0.001 | 2.381 | 0.008 |
| Error | 0.041 | 153 | 0.000 | | |

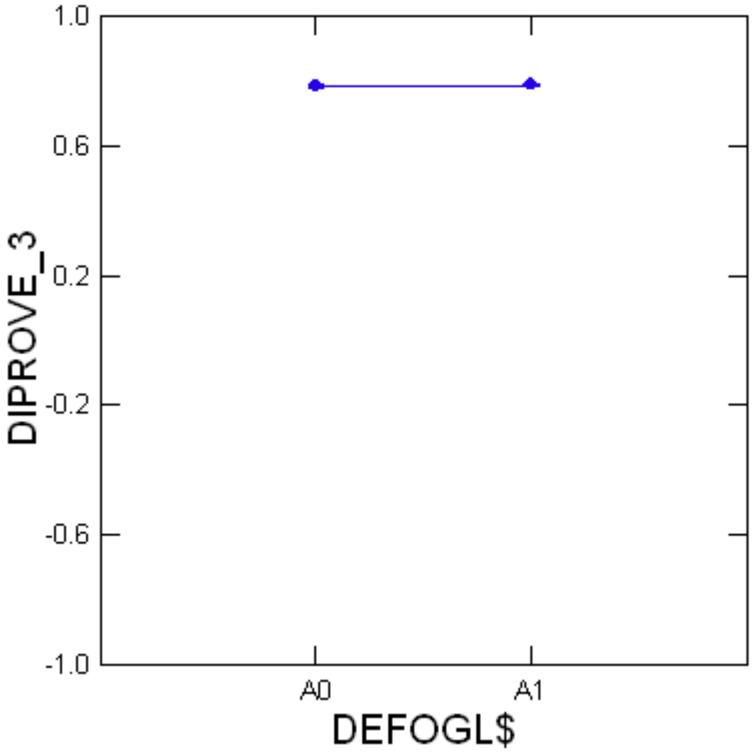

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_3
2008
2009
2010
ANNO

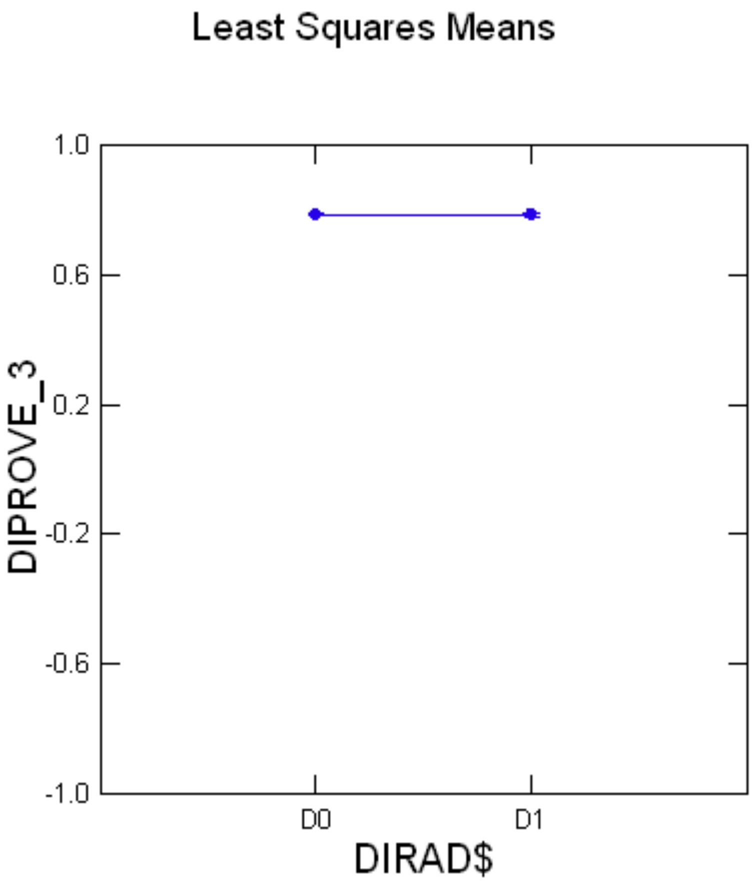

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_3
Br
Co
LOCALITA$

Least Squares Means



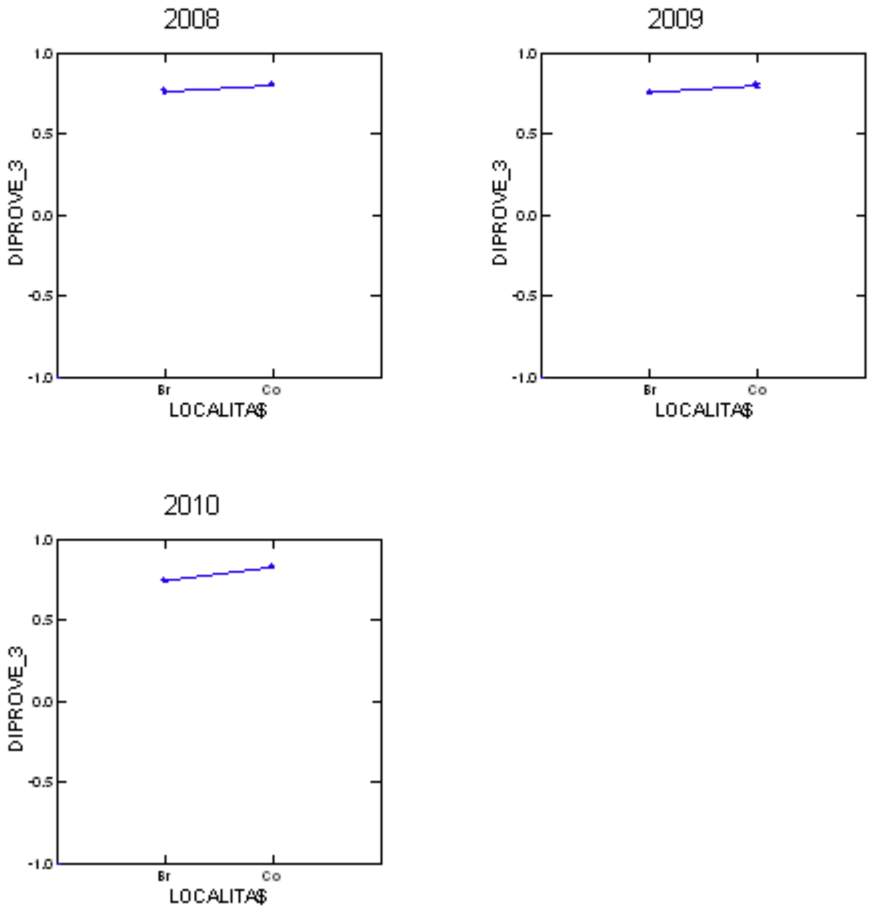

Least Squares Means



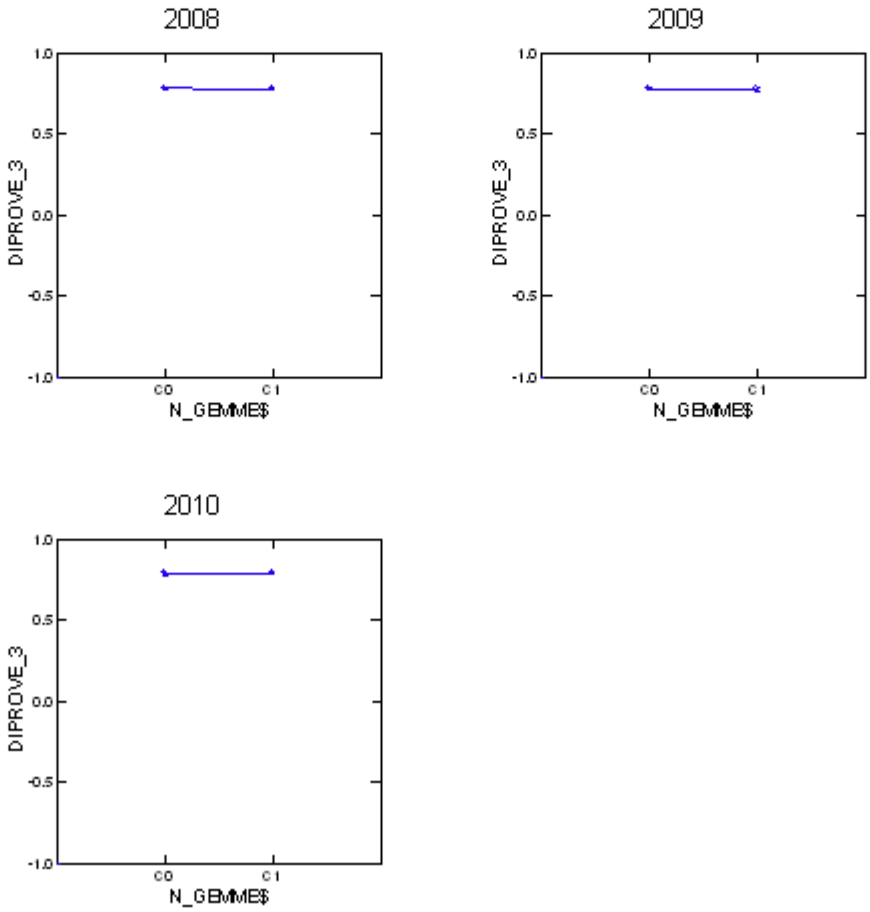


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_3
D0
D1
DIRAD$

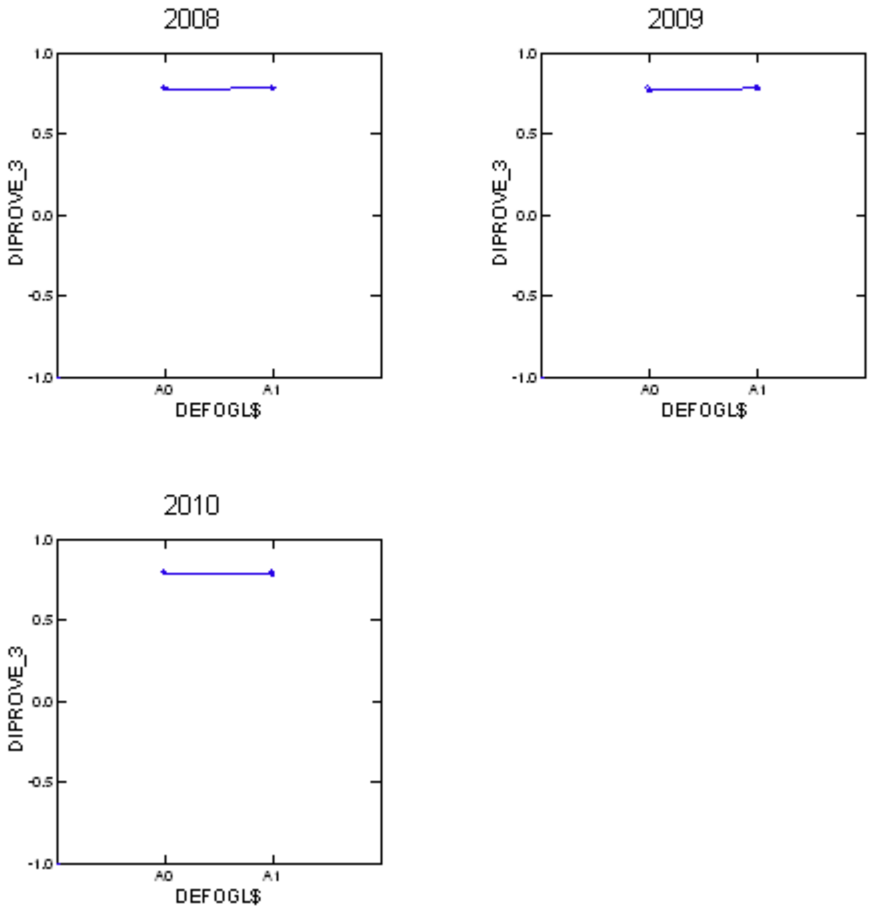
# Least Squares Means



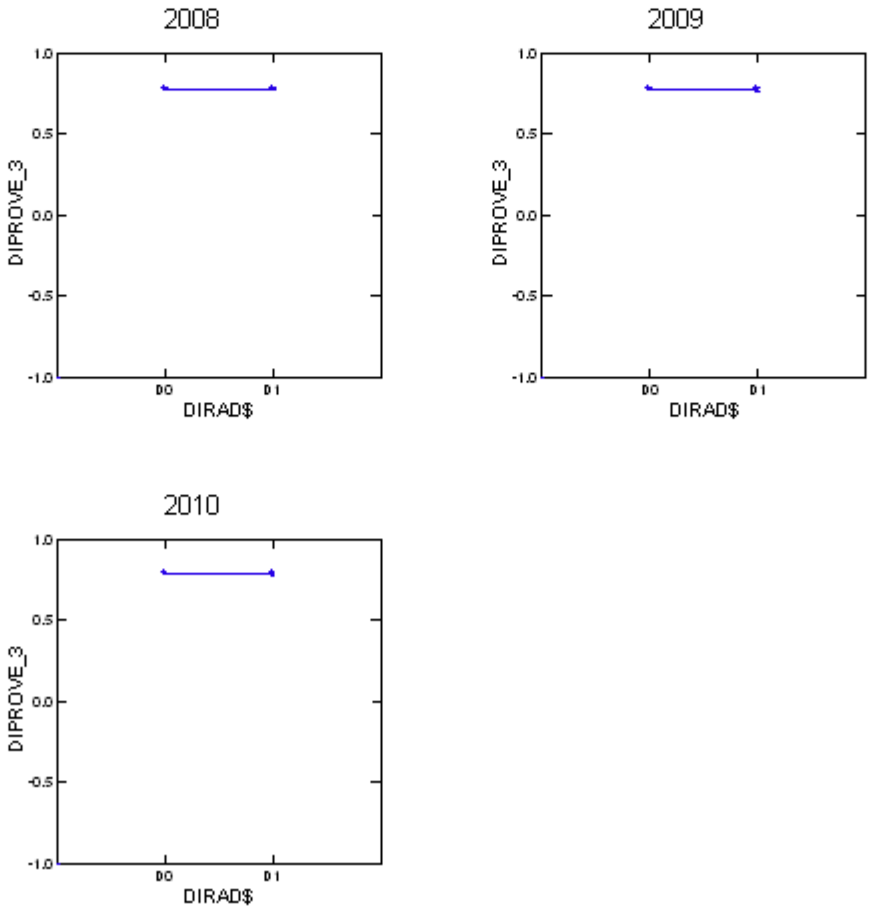
# Least Squares Means



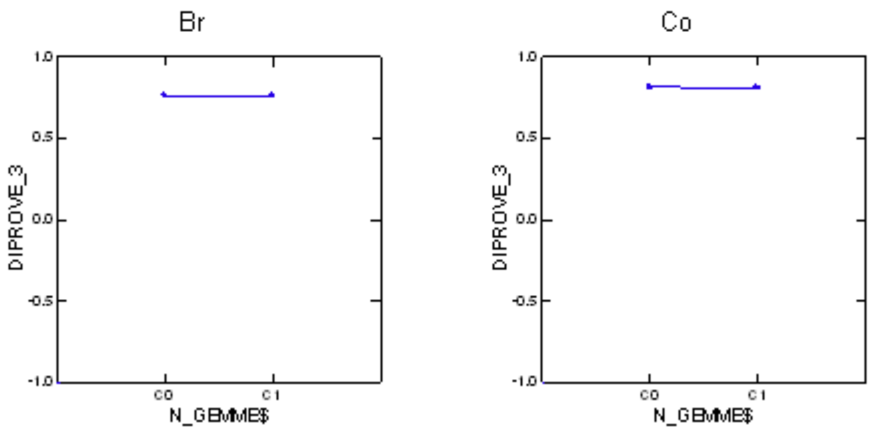
## Least Squares Means



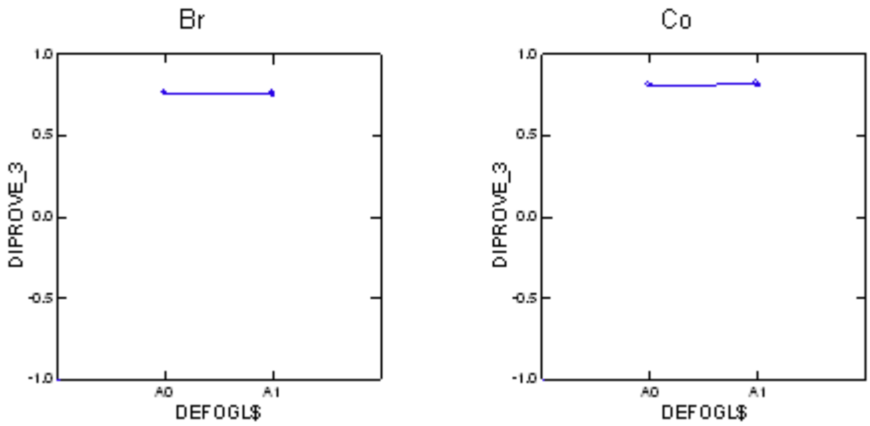
## Least Squares Means



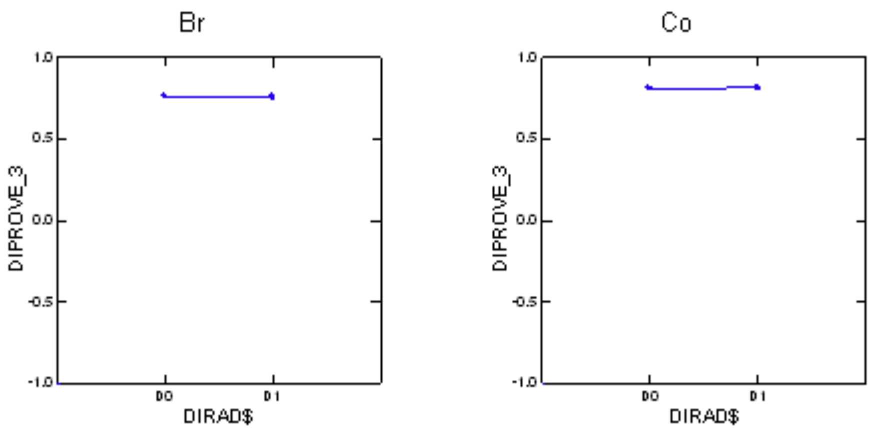

## Least Squares Means



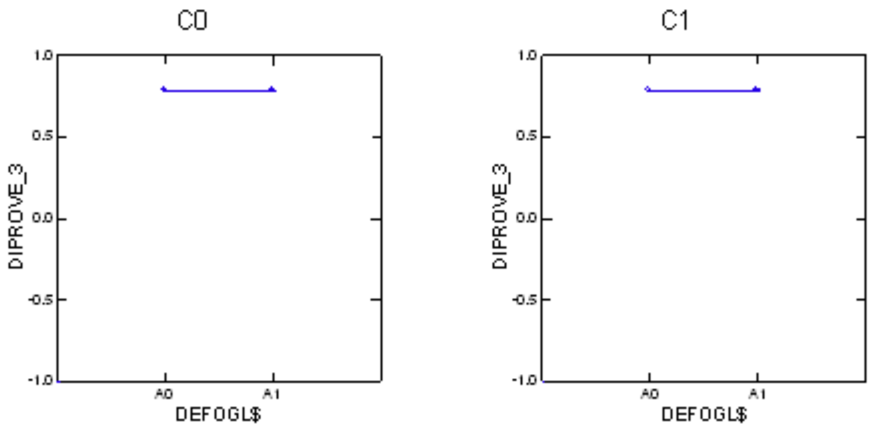
## Least Squares Means



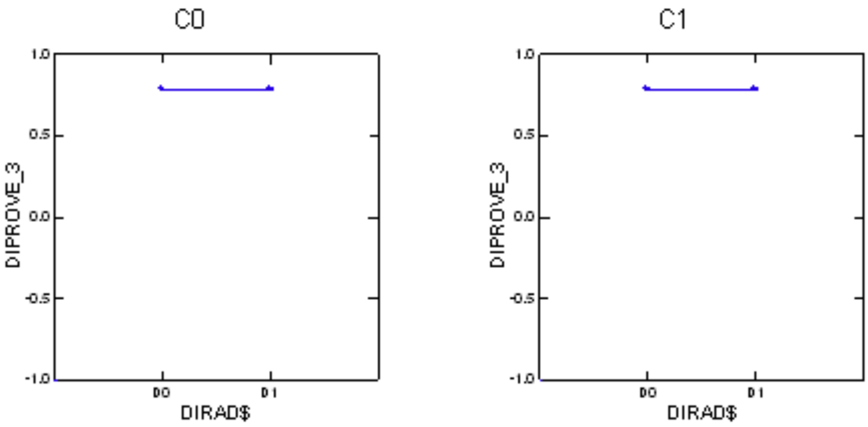

## Least Squares Means



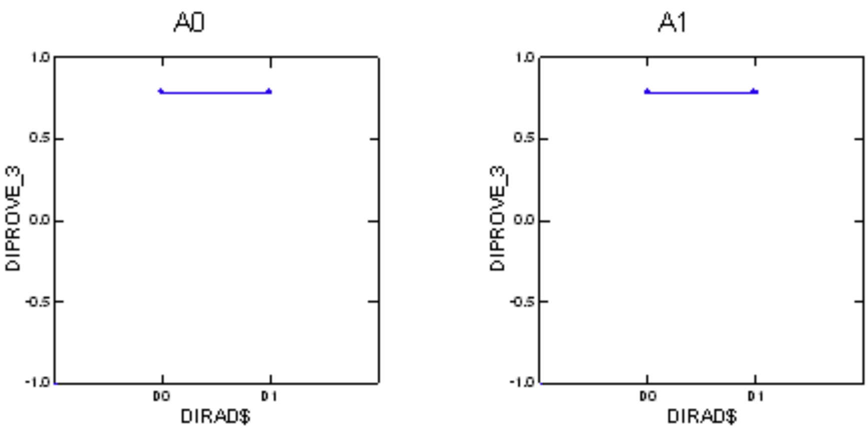

## Least Squares Means



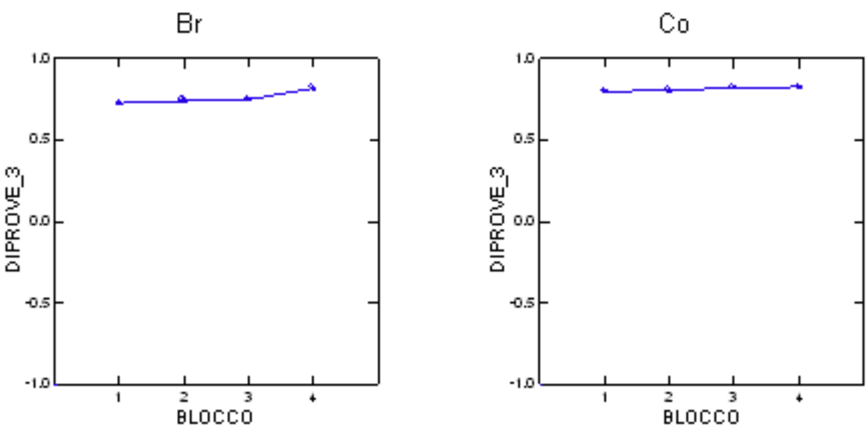
## Least Squares Means



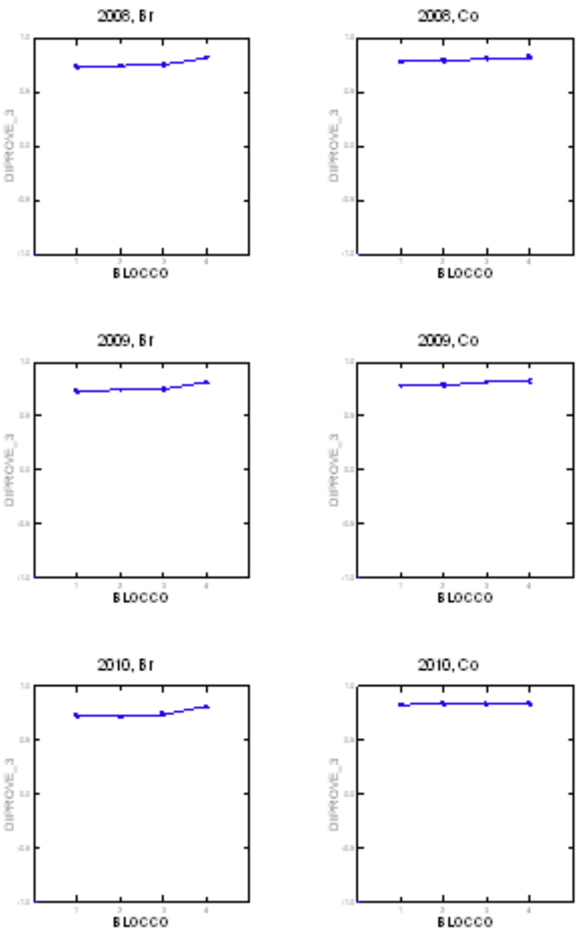

## Least Squares Means




## Least Squares Means



## Least Squares Means




```
*** WARNING *** :

Case 56 is an Outlier (Studentized Residual :  3.649)
Case 81 is an Outlier (Studentized Residual : -4.417)
Case 88 is an Outlier (Studentized Residual :  3.707)

Durbin-Watson D Statistic    ¦ 1.357
First Order Autocorrelation ¦ 0.321
```

**Information Criteria**

```
AIC               ¦ -997.659
AIC (Corrected)   ¦ -975.937
Schwarz's BIC     ¦ -867.359
```

# Allegato 2.2 – Anova Multiscala Cabernet

# ANOVA PER VIGNETI CABERNET SAUVIGNON (CACCIAGRANDE E DONNA OLIMPIA) NEGLI ANNI 2008-2009-2010

▼General Linear Model

**IBIMET 1 2009-2010**

Data for the following results were selected according to
SELECT (VARIETA$ = 'Cabernet') AND (ANNO <> 2008)

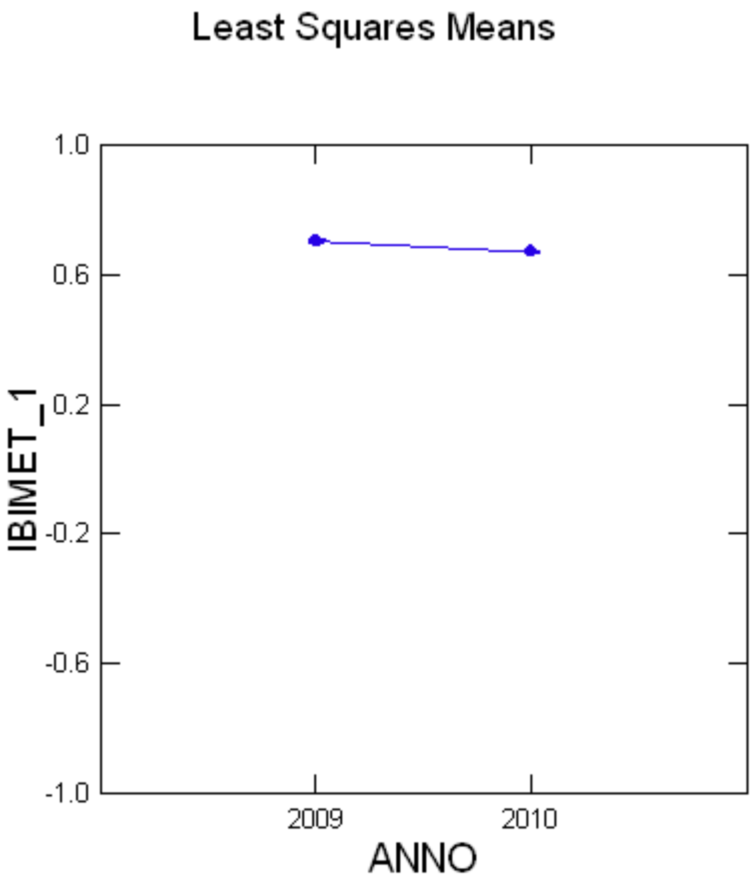
Effects coding used for categorical variables in model.
The categorical values encountered during processing are

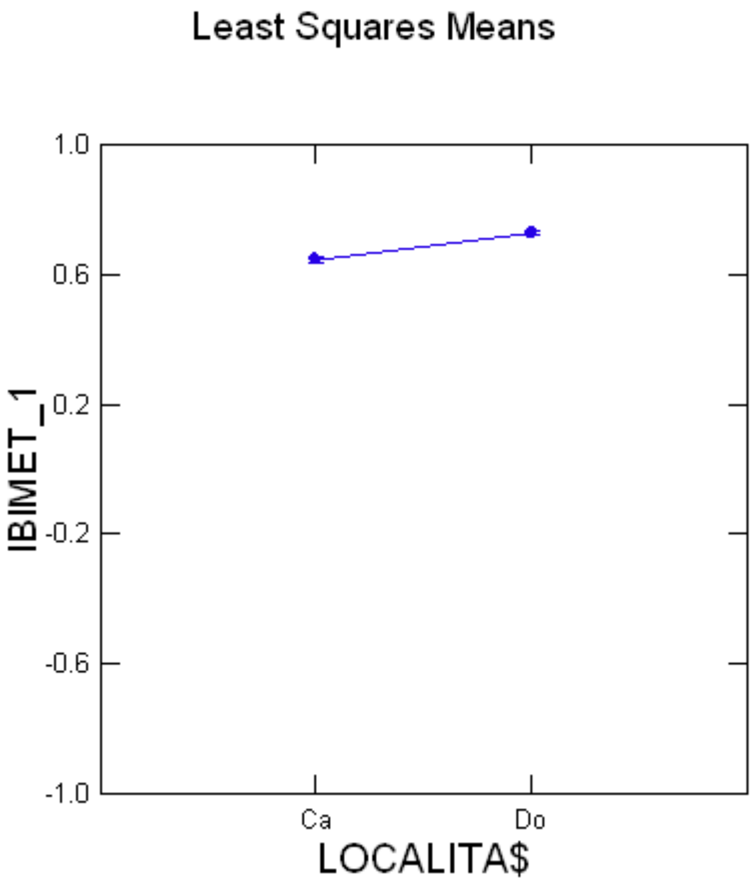
| Variables | Levels | | |
|---|---|---|---|
| ANNO (2 levels) | 2,009.000 | 2,010.000 | |
| LOCALITA$ (2 levels) | Ca | Do | |
| N_GEMME$ (2 levels) | C0 | C1 | |
| DEFOGL$ (2 levels) | A0 | A1 | |
| DIRAD$ (2 levels) | D0 | D1 | |
| BLOCCO (3 levels) | 1.000 | 2.000 | 3.000 |

| Dependent Variable | IBIMET_1 |
|---|---|
| N | 96 |
| Multiple R | 0.979 |
| Squared Multiple R | 0.959 |

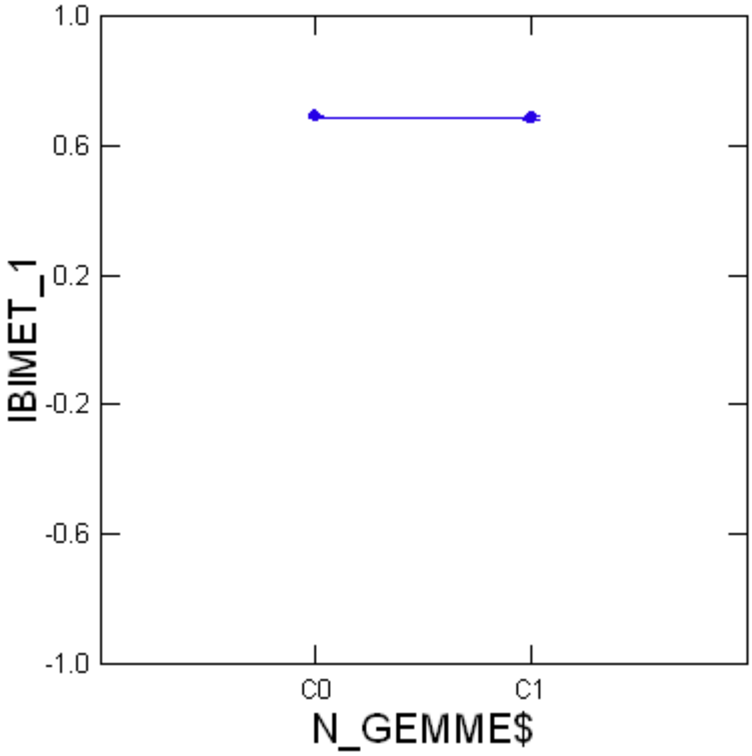
**Analysis of Variance**

| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.015 | 1 | 0.015 | 57.882 | 0.000 |
| LOCALITA$ | 0.095 | 1 | 0.095 | 357.575 | 0.000 |
| N_GEMME$ | 0.000 | 1 | 0.000 | 1.260 | 0.265 |
| DEFOGL$ | 0.006 | 1 | 0.006 | 21.270 | 0.000 |
| DIRAD$ | 0.001 | 1 | 0.001 | 2.820 | 0.097 |
| LOCALITA$*ANNO | 0.026 | 1 | 0.026 | 100.018 | 0.000 |
| N_GEMME$*ANNO | 0.000 | 1 | 0.000 | 0.185 | 0.668 |
| DEFOGL$*ANNO | 0.002 | 1 | 0.002 | 7.555 | 0.008 |
| DIRAD$*ANNO | 0.000 | 1 | 0.000 | 0.000 | 0.997 |
| N_GEMME$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.803 | 0.373 |
| DEFOGL$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.264 | 0.609 |
| DIRAD$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.824 | 0.367 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.897 | 0.347 |
| DIRAD$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.877 | 0.352 |
| DIRAD$*DEFOGL$ | 0.000 | 1 | 0.000 | 0.209 | 0.649 |
| BLOCCO(LOCALITA$) | 0.158 | 4 | 0.040 | 149.122 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.024 | 4 | 0.006 | 22.574 | 0.000 |
| Error | 0.019 | 72 | 0.000 | | |

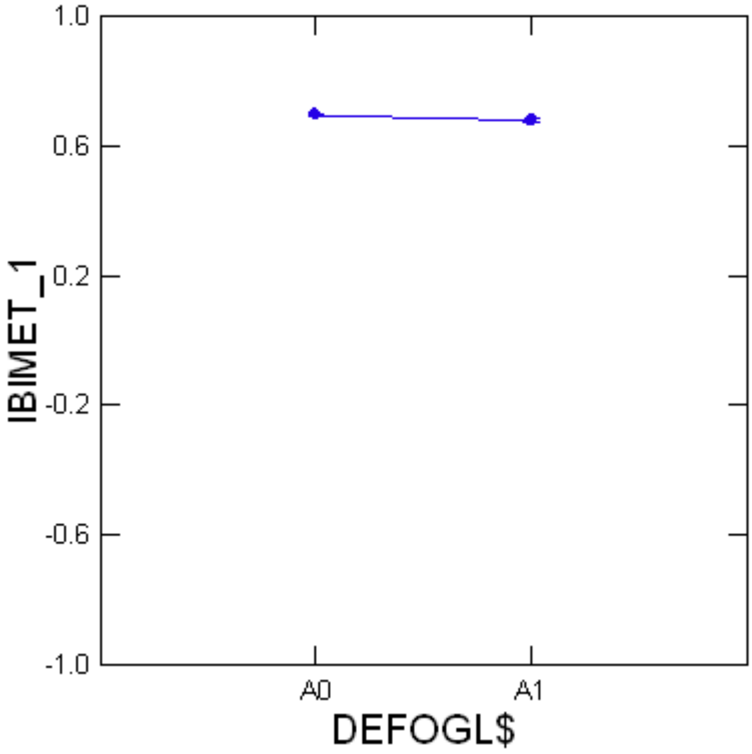

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_1
2009
2010
ANNO

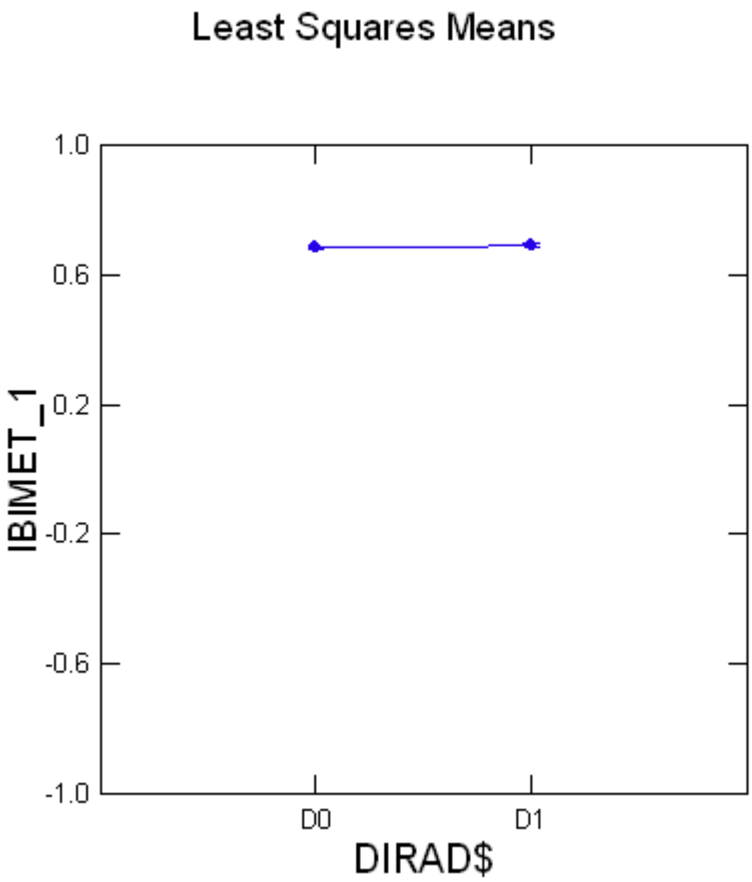

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_1
Ca
Do
LOCALITA$

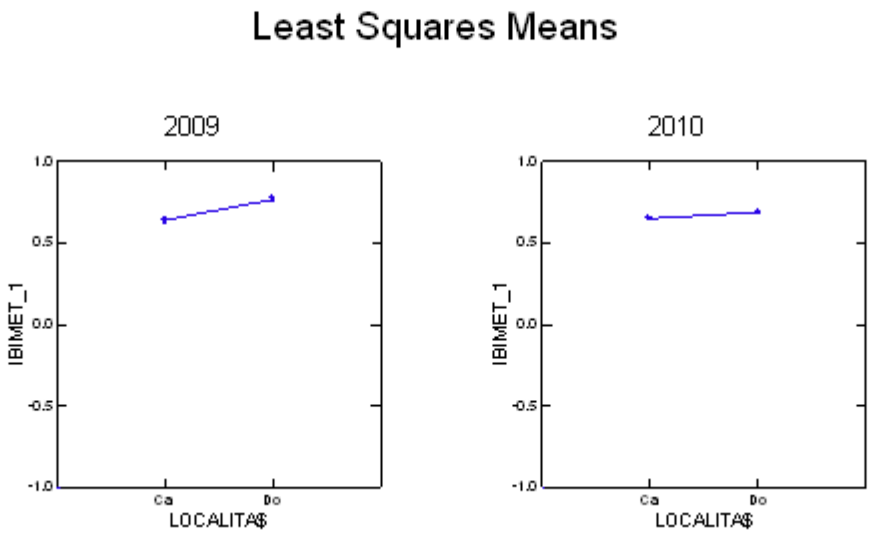
## Least Squares Means

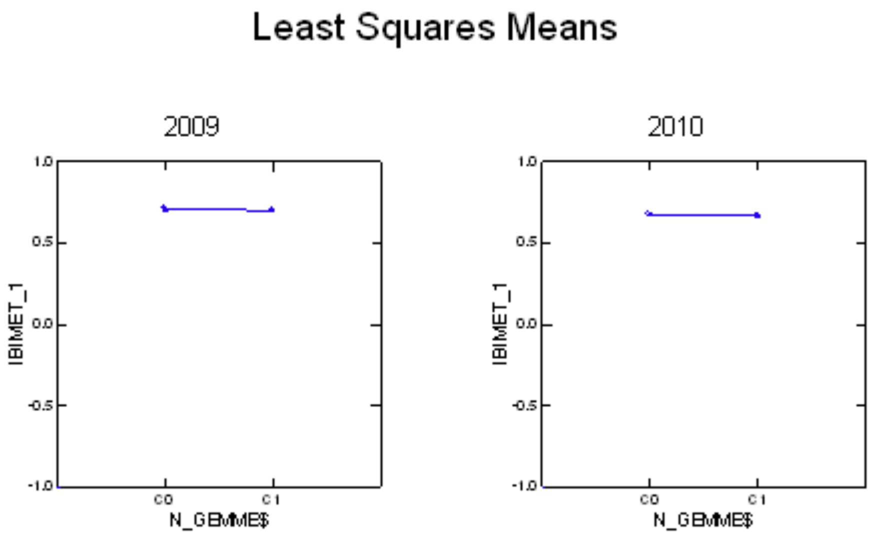


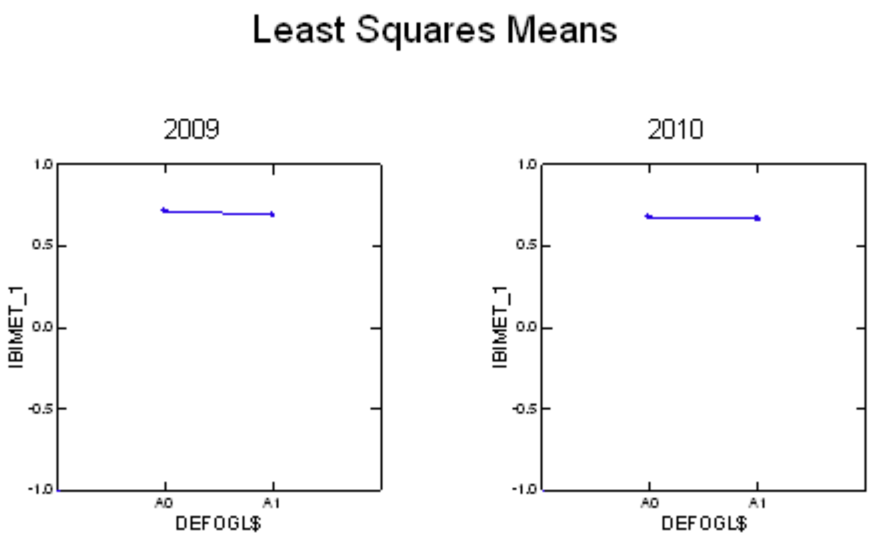

## Least Squares Means

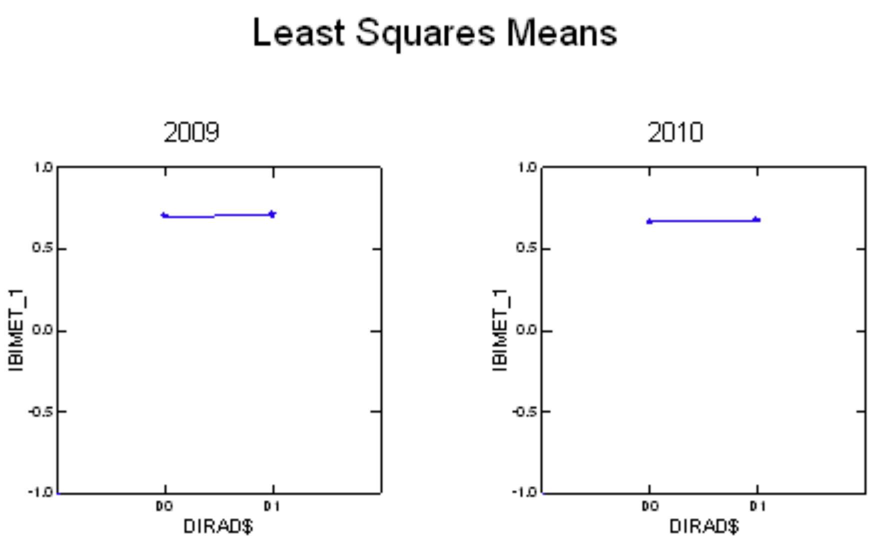



Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_1
D0
D1
DIRAD$

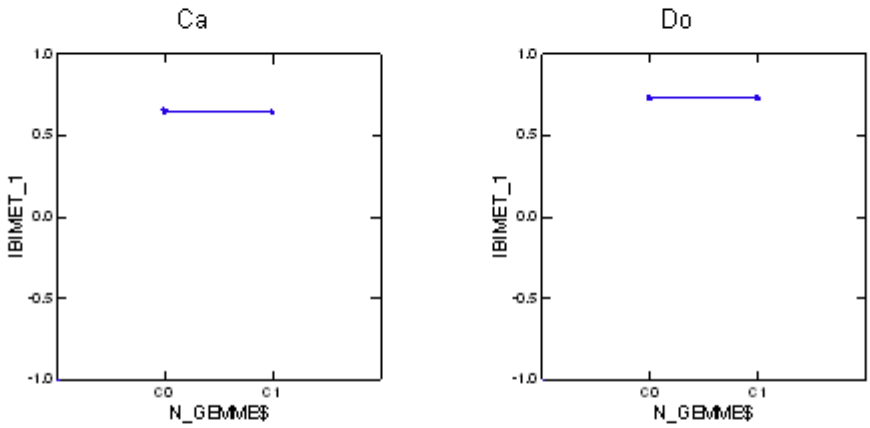

Least Squares Means
2009
2010
IBIMET_1
1.0
0.5
0.0
-0.5
-1.0
Ca
Do
LOCALITA$


Least Squares Means
2009
2010
IBIMET_1
1.0
0.5
0.0
-0.5
-1.0
C0
C1
N_GEMME$

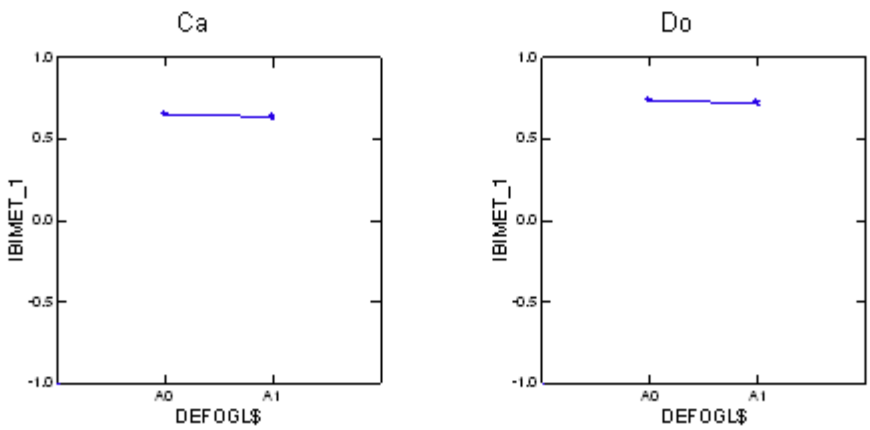

Least Squares Means
2009
2010
IBIMET_1
1.0
0.5
0.0
-0.5
-1.0
A0
A1
DEFOGL$


Least Squares Means
2009
2010
IBIMET_1
1.0
0.5
0.0
-0.5
-1.0
D0
D1
DIRAD$

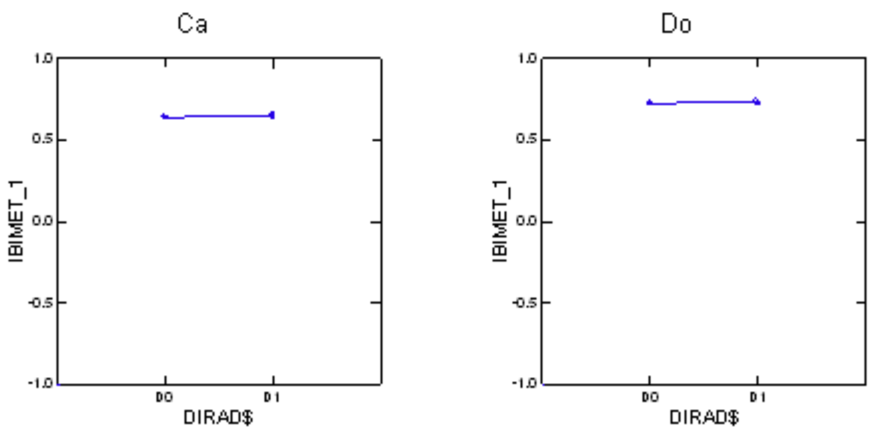
## Least Squares Means



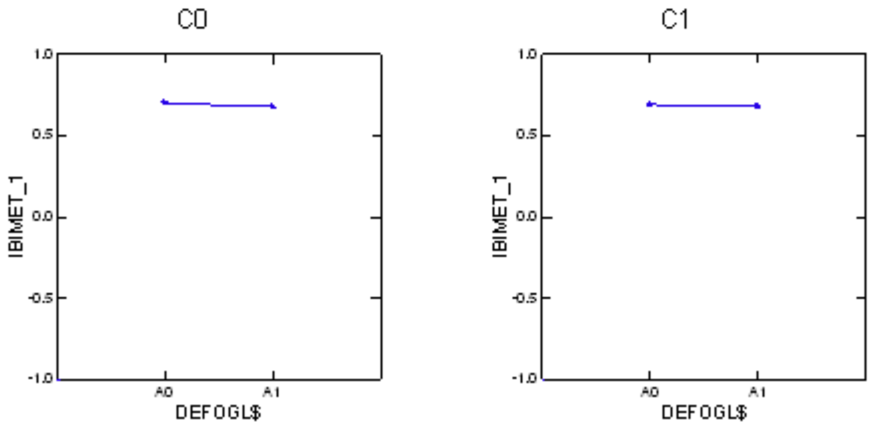

## Least Squares Means



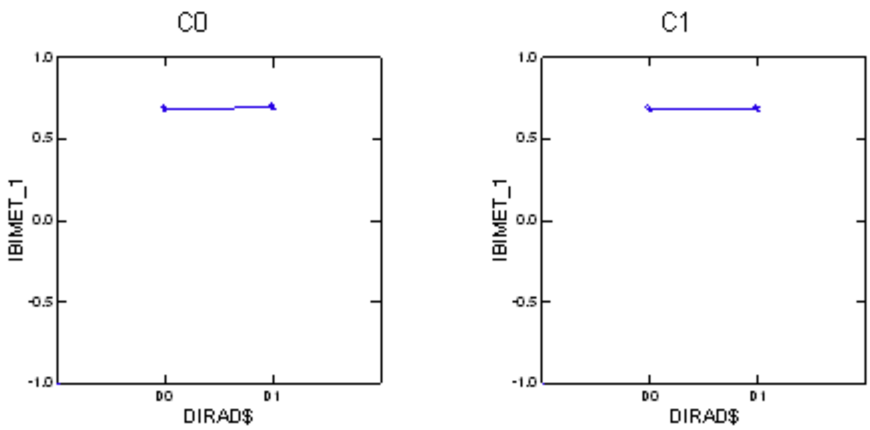

## Least Squares Means



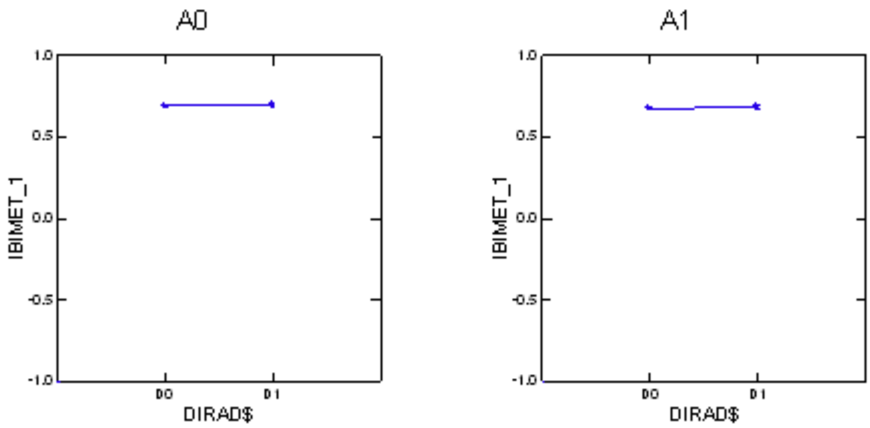
## Least Squares Means

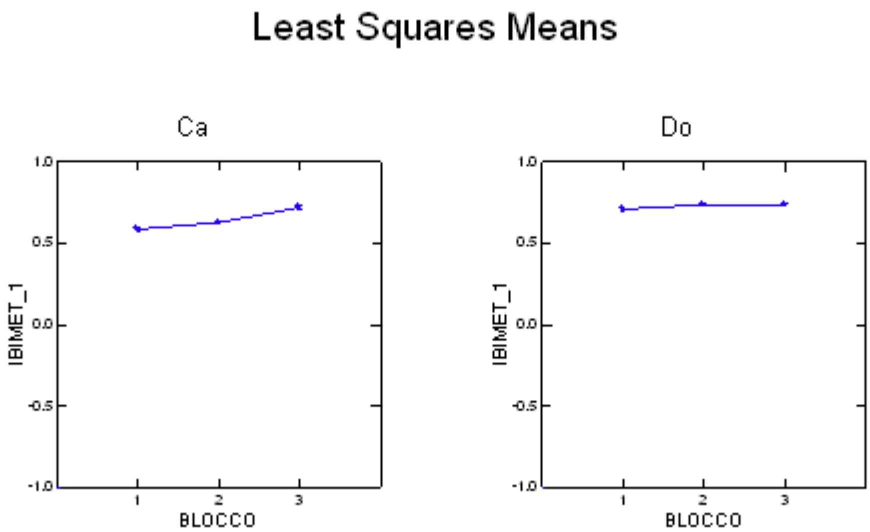


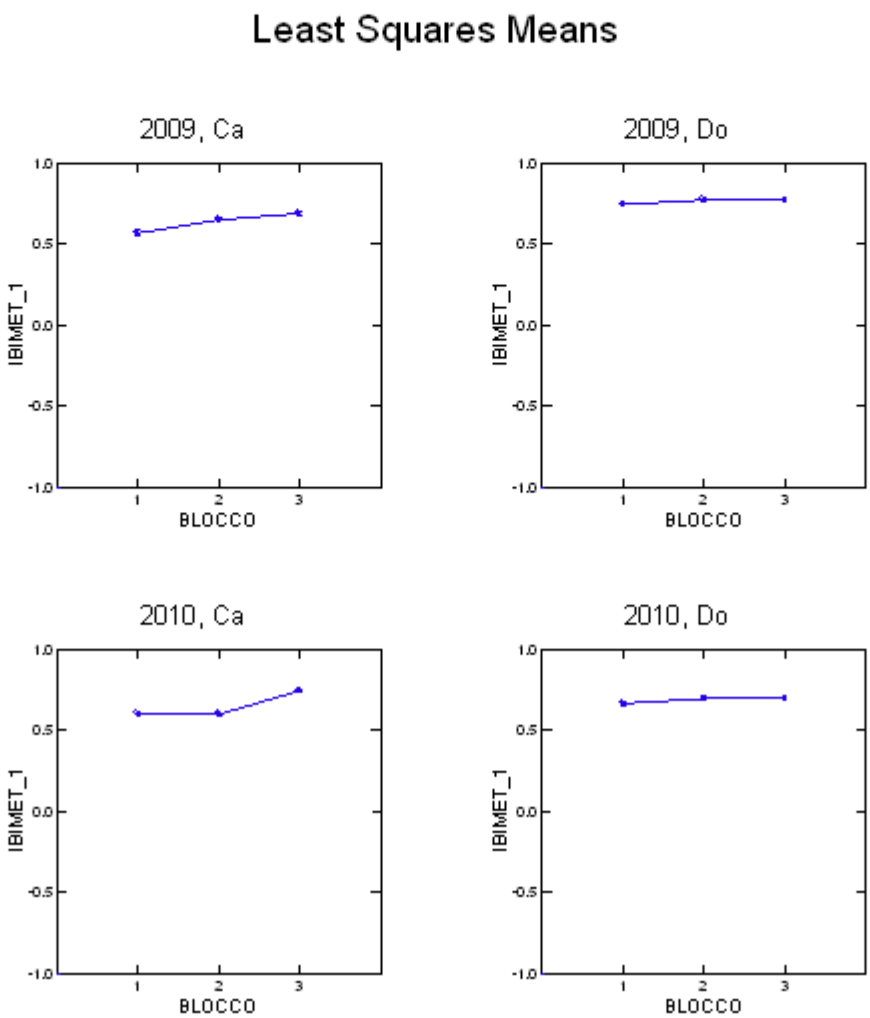

## Least Squares Means




## Least Squares Means






```
Durbin-Watson D Statistic   ¦ 1.899
First Order Autocorrelation ¦ 0.048
```

**Information Criteria**

```
AIC               ¦ -495.846
AIC (Corrected)   ¦ -477.274
Schwarz's BIC     ¦ -431.737
```

## ▼General Linear Model

## IBIMET2 2008- 2009-2010

Data for the following results were selected according to
SELECT (VARIETA$ = 'Cabernet')

Effects coding used for categorical variables in model.
The categorical values encountered during processing are

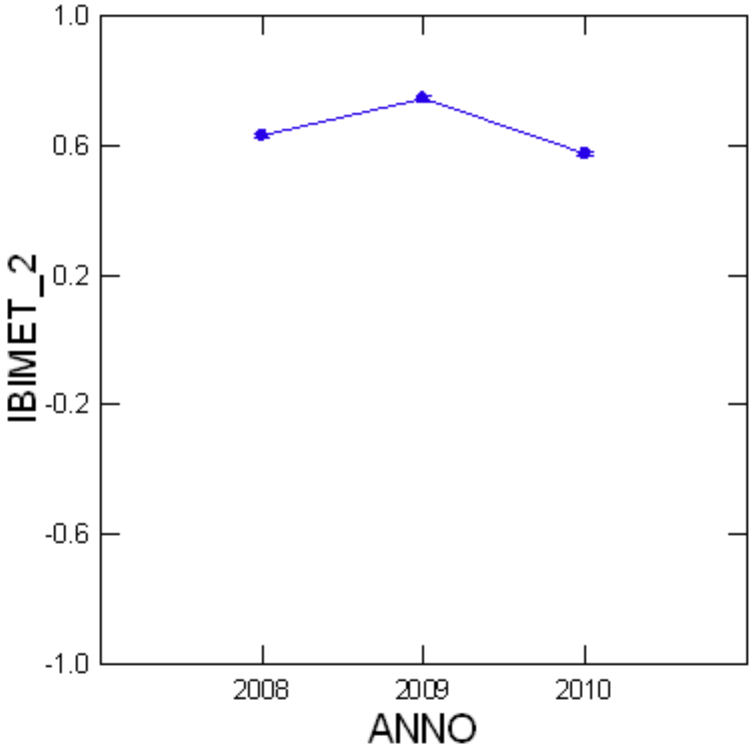
| Variables | Levels | | |
|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 |
| LOCALITA$ (2 levels) | Ca | Do | |
| N_GEMME$ (2 levels) | C0 | C1 | |
| DEFOGL$ (2 levels) | A0 | A1 | |
| DIRAD$ (2 levels) | D0 | D1 | |
| BLOCCO (3 levels) | 1.000 | 2.000 | 3.000 |

| | |
|---|---|
| Dependent Variable | IBIMET_2 |
| N | 144 |
| Multiple R | 0.992 |
| Squared Multiple R | 0.984 |

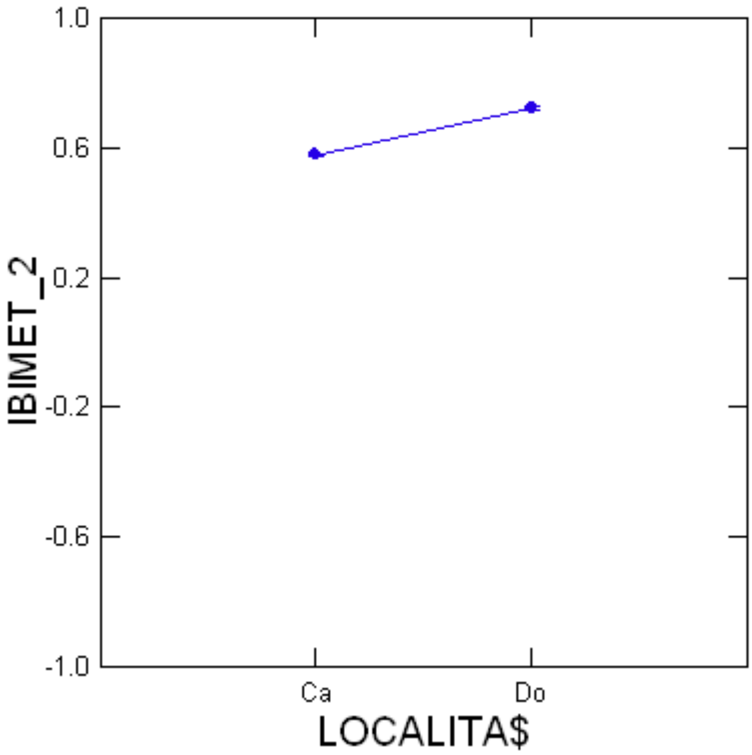
**Analysis of Variance**

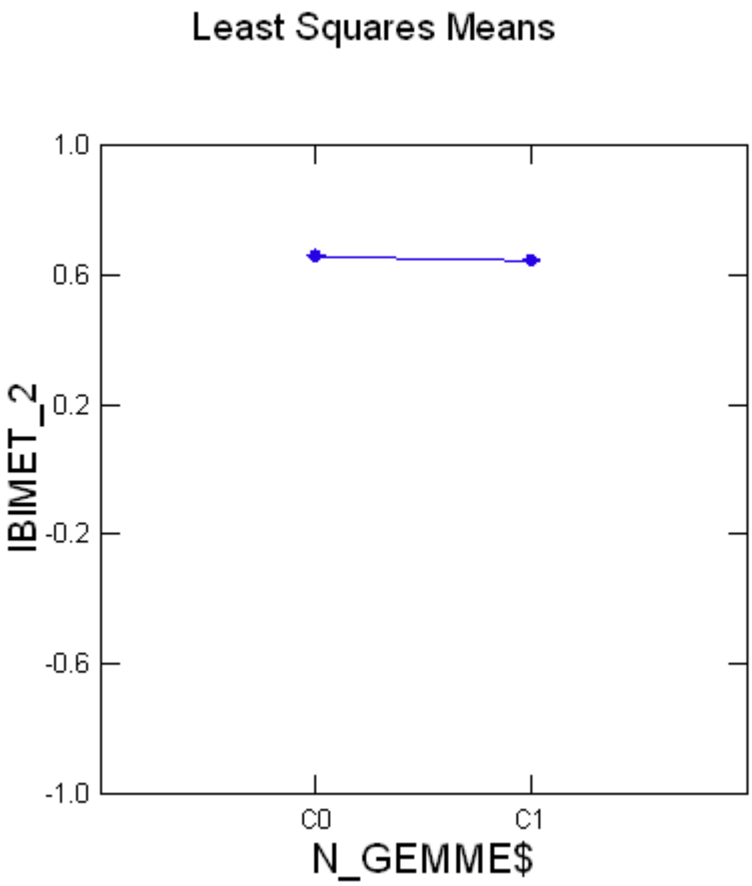
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.465 | 2 | 0.232 | 753.339 | 0.000 |
| LOCALITA$ | 0.572 | 1 | 0.572 | 1,853.964 | 0.000 |
| N_GEMME$ | 0.006 | 1 | 0.006 | 17.851 | 0.000 |
| DEFOGL$ | 0.000 | 1 | 0.000 | 0.352 | 0.554 |
| DIRAD$ | 0.000 | 1 | 0.000 | 0.029 | 0.864 |
| LOCALITA$*ANNO | 0.243 | 2 | 0.122 | 394.122 | 0.000 |
| N_GEMME$*ANNO | 0.000 | 2 | 0.000 | 0.274 | 0.761 |
| DEFOGL$*ANNO | 0.001 | 2 | 0.001 | 1.977 | 0.143 |
| DIRAD$*ANNO | 0.000 | 2 | 0.000 | 0.256 | 0.775 |
| N_GEMME$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.016 | 0.901 |
| DEFOGL$*LOCALITA$ | 0.001 | 1 | 0.001 | 3.785 | 0.054 |
| DIRAD$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.375 | 0.541 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 1.028 | 0.313 |
| DIRAD$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.047 | 0.829 |
| DIRAD$*DEFOGL$ | 0.000 | 1 | 0.000 | 0.727 | 0.396 |
| BLOCCO(LOCALITA$) | 0.225 | 4 | 0.056 | 182.201 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.025 | 8 | 0.003 | 10.130 | 0.000 |
| Error | 0.034 | 111 | 0.000 | | |

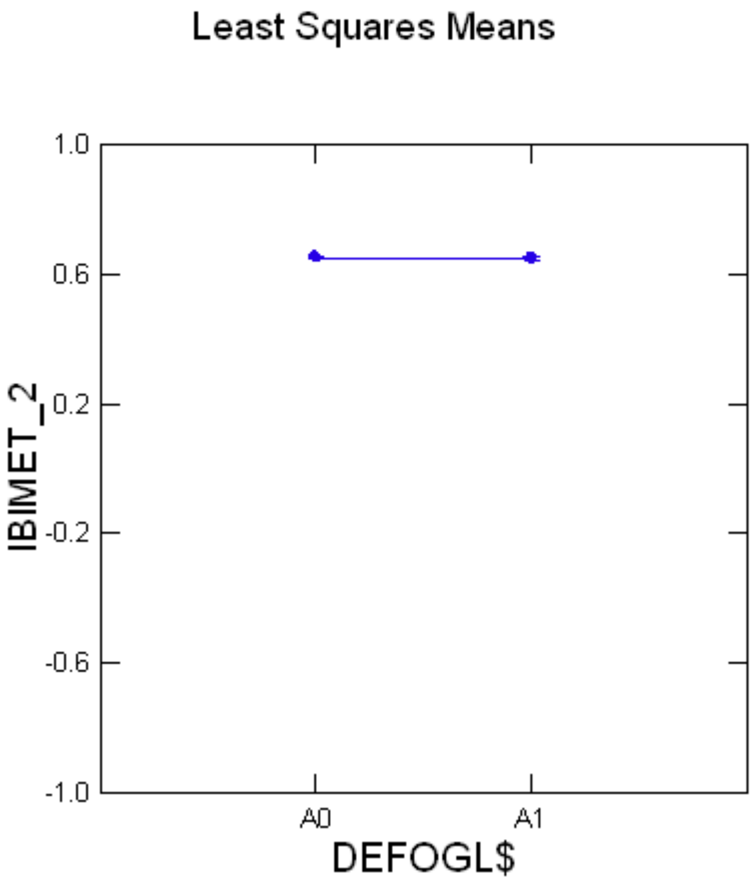
Least Squares Means

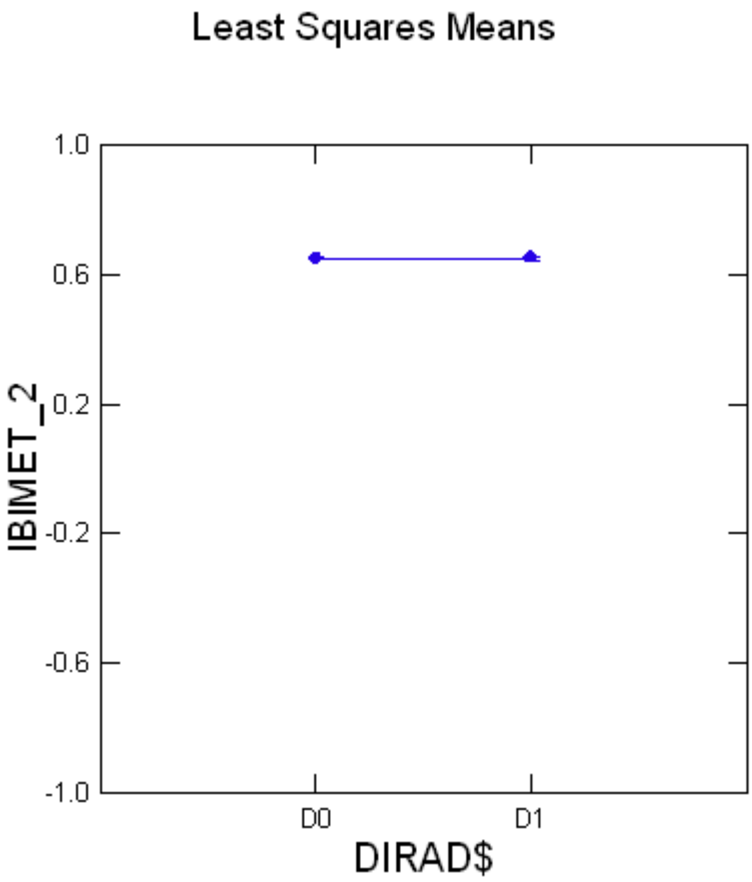



Least Squares Means



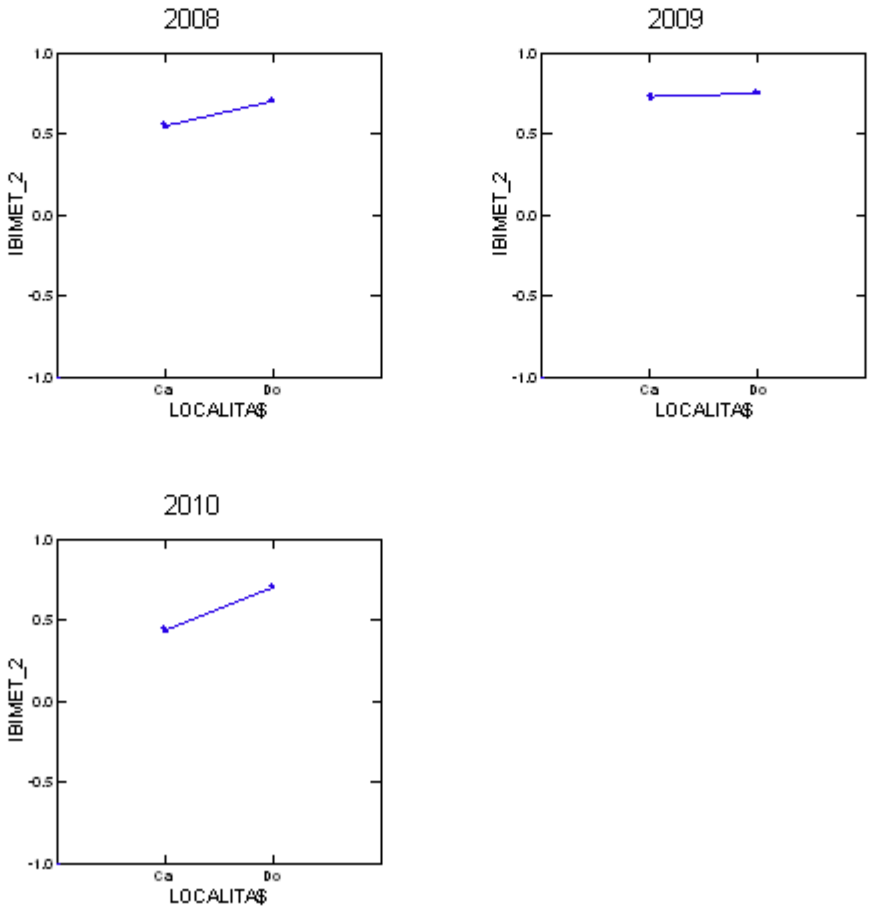

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_2
C0
C1
N_GEMME$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_2
A0
A1
DEFOGL$

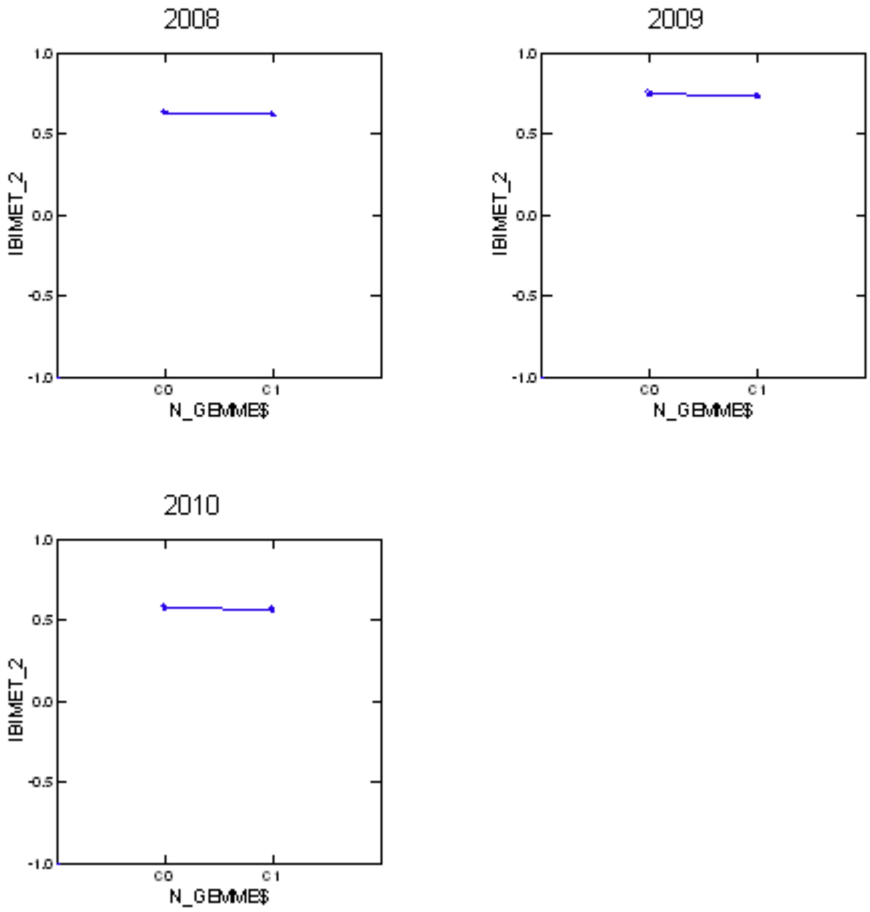


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_2
D0
D1
DIRAD$

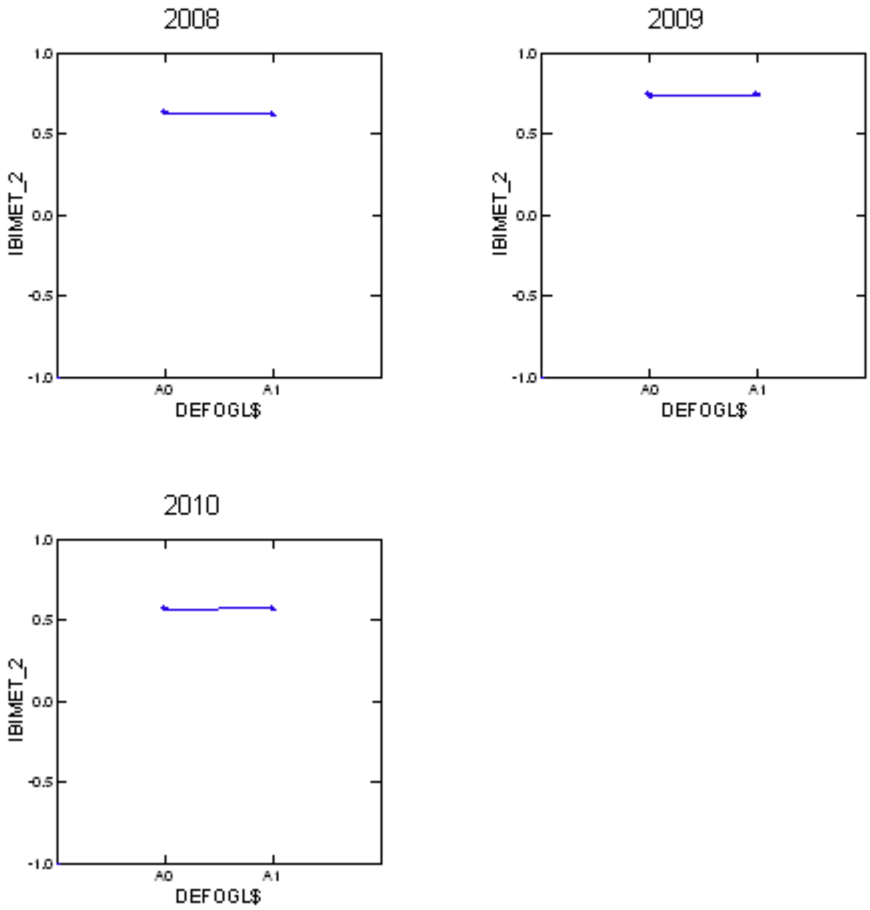
## Least Squares Means

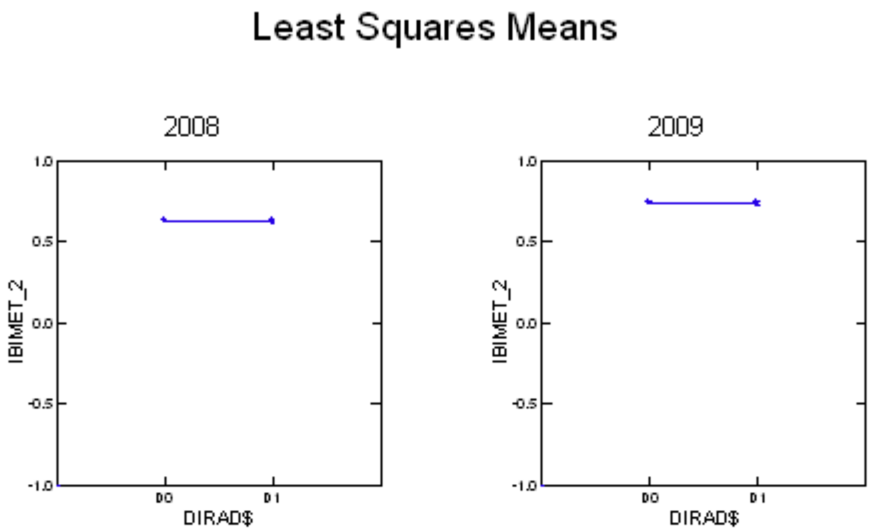


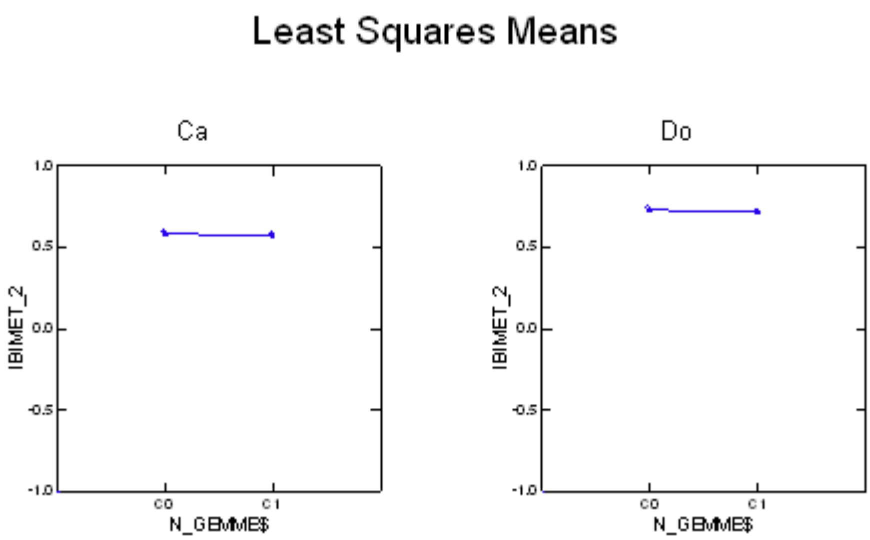
## Least Squares Means



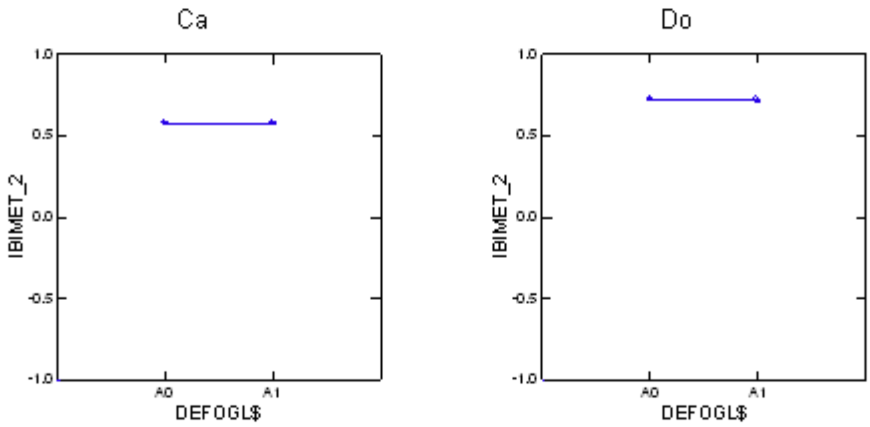
# Least Squares Means



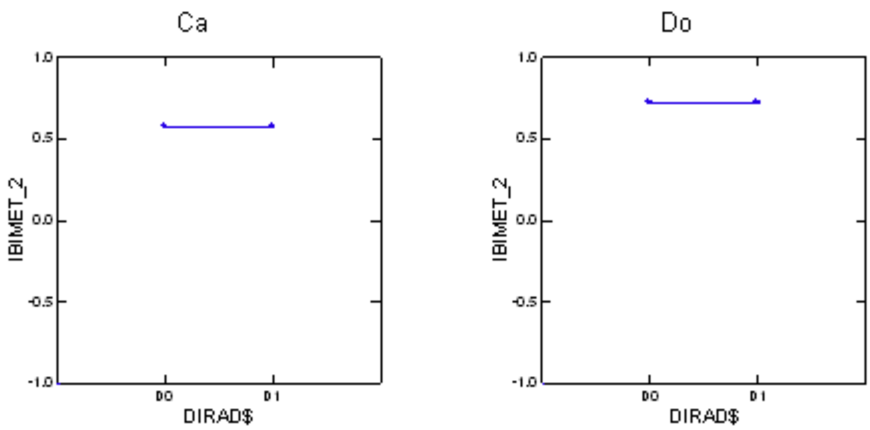

Least Squares Means
2008
2009
2010
IBIMET_2
1.0
0.5
0.0
-0.5
-1.0
D0
D1
DIRAD$


Least Squares Means
Ca
Do
IBIMET_2
1.0
0.5
0.0
-0.5
-1.0
C0
C1
N_GEMME$

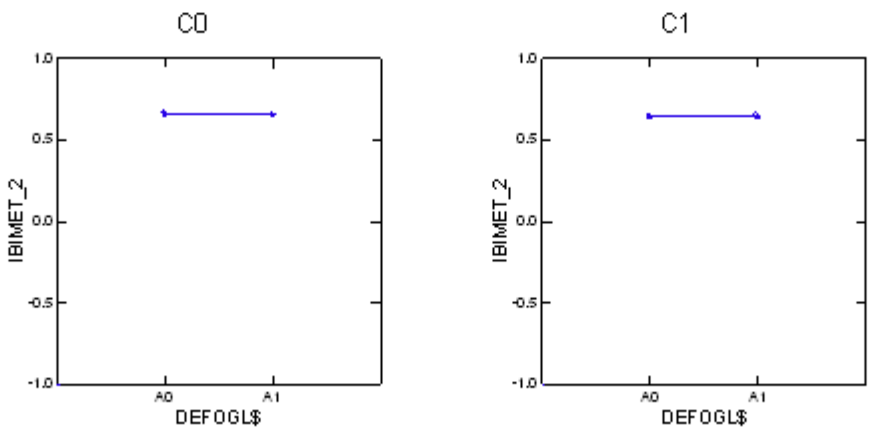
## Least Squares Means



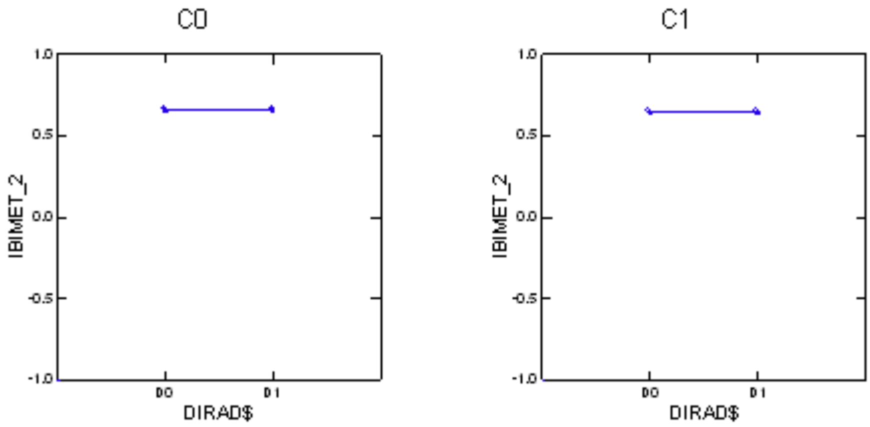

## Least Squares Means



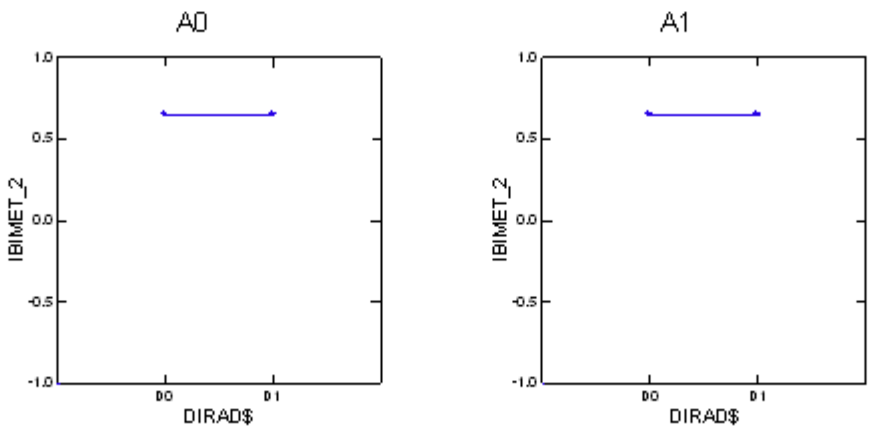

## Least Squares Means



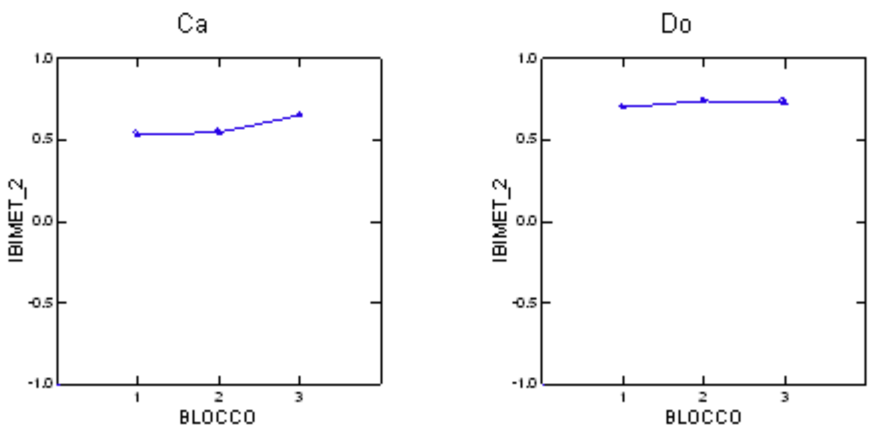
## Least Squares Means



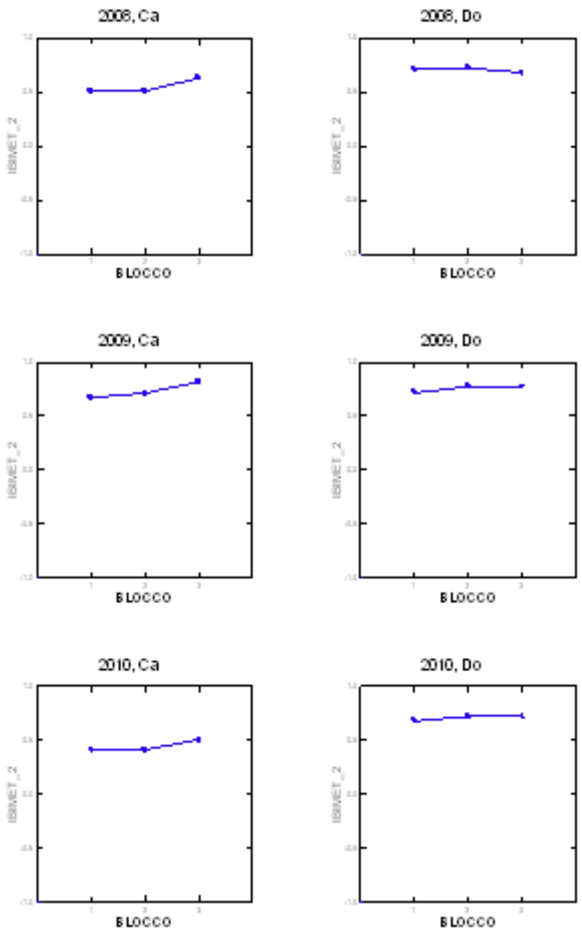

## Least Squares Means




## Least Squares Means



## Least Squares Means




*** WARNING *** :

Case 113 is an Outlier (Studentized Residual : -3.584)
Case 118 is an Outlier (Studentized Residual :  3.504)

| | |
|---|---|
| Durbin-Watson D Statistic | 1.181 |
| First Order Autocorrelation | 0.405 |

**Information Criteria**

| | |
|---|---|
| AIC | -724.891 |
| AIC (Corrected) | -703.056 |
| Schwarz's BIC | -623.917 |

### ▼General Linear Model

## IBIMET3 2008- 2009-2010

Data for the following results were selected according to
SELECT (VARIETA$ = 'Cabernet')

Effects coding used for categorical variables in model.
The categorical values encountered during processing are

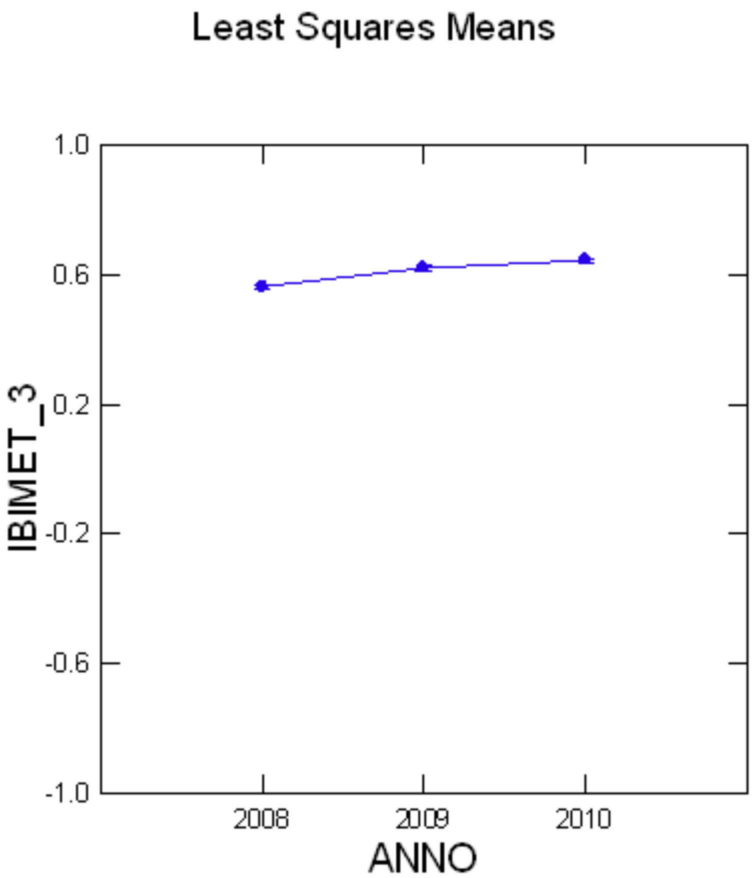
| Variables | Levels | | |
|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 |

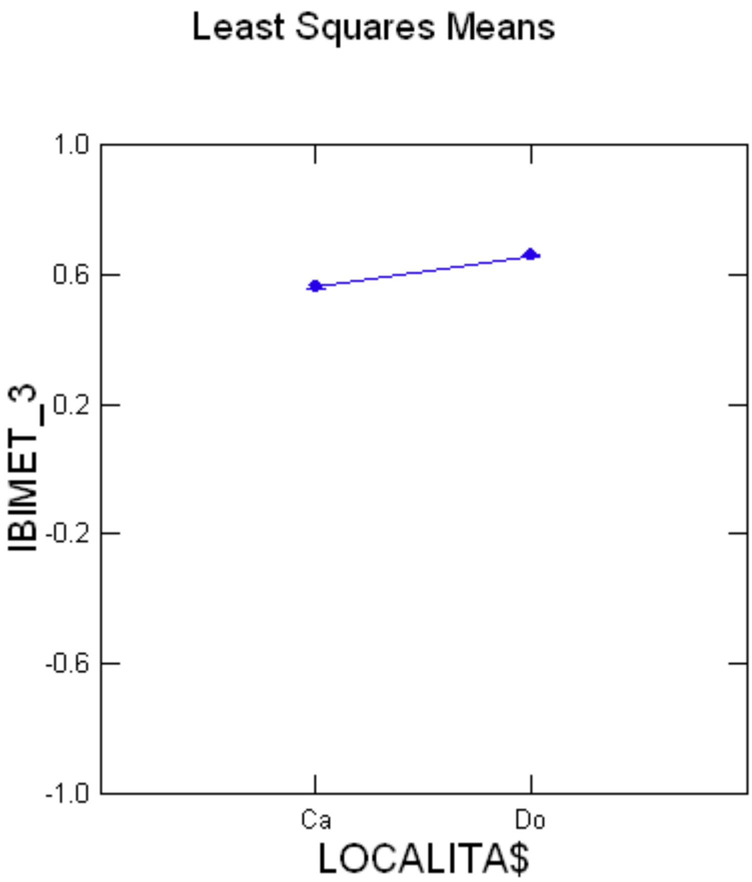
| | | | |
|---|---|---|---|
| LOCALITA$ (2 levels) | Ca | Do | |
| N_GEMME$ (2 levels) | C0 | C1 | |
| DEFOGL$ (2 levels) | A0 | A1 | |
| DIRAD$ (2 levels) | D0 | D1 | |
| BLOCCO (3 levels) | 1.000 | 2.000 | 3.000 |

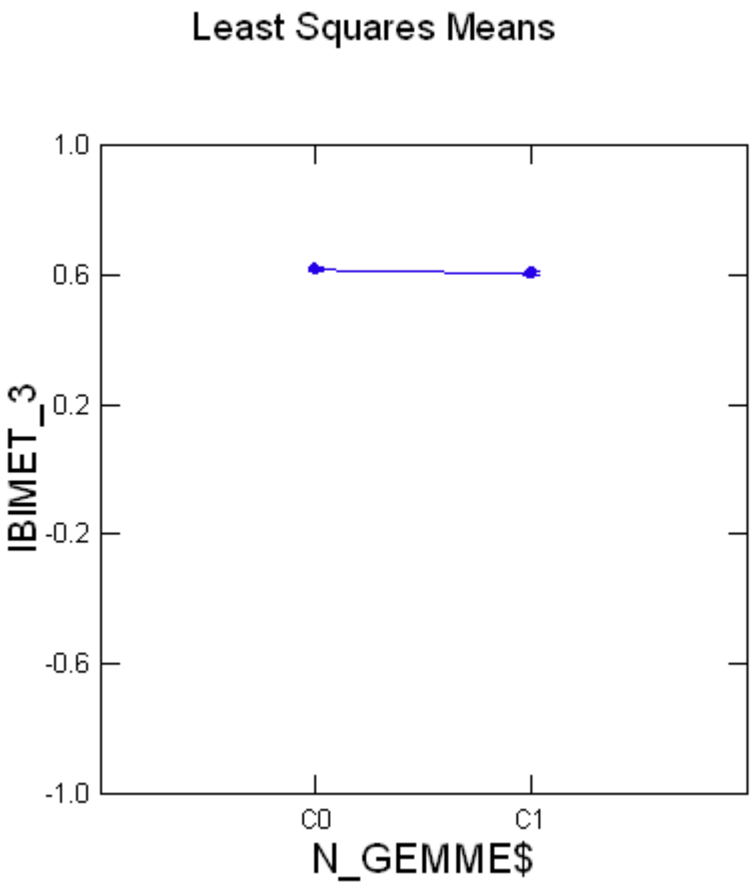
| | |
|---|---|
| Dependent Variable | IBIMET_3 |
| N | 144 |
| Multiple R | 0.978 |
| Squared Multiple R | 0.956 |

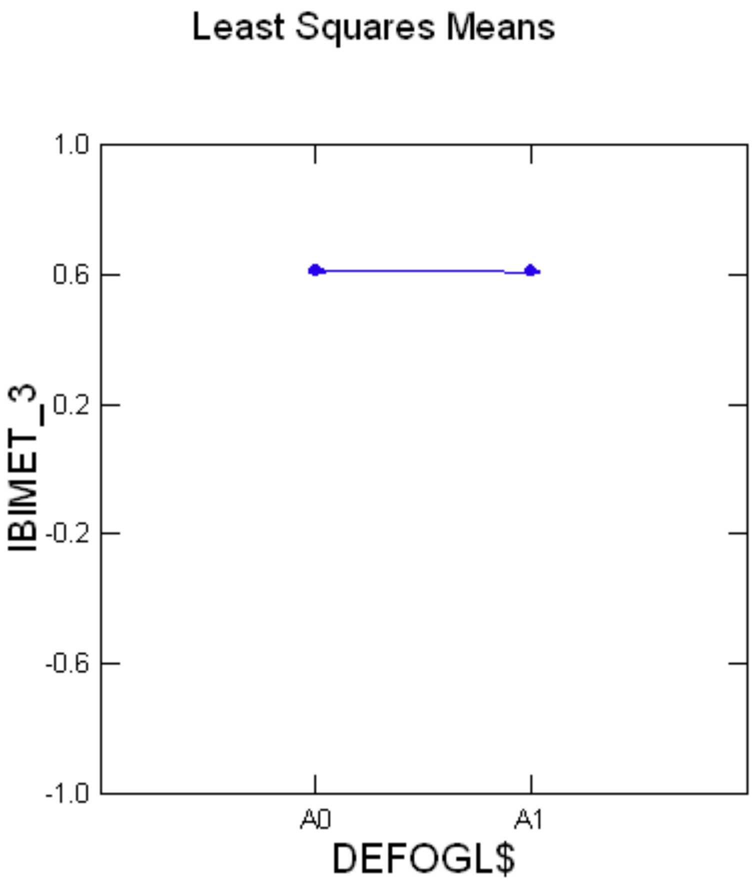
**Analysis of Variance**

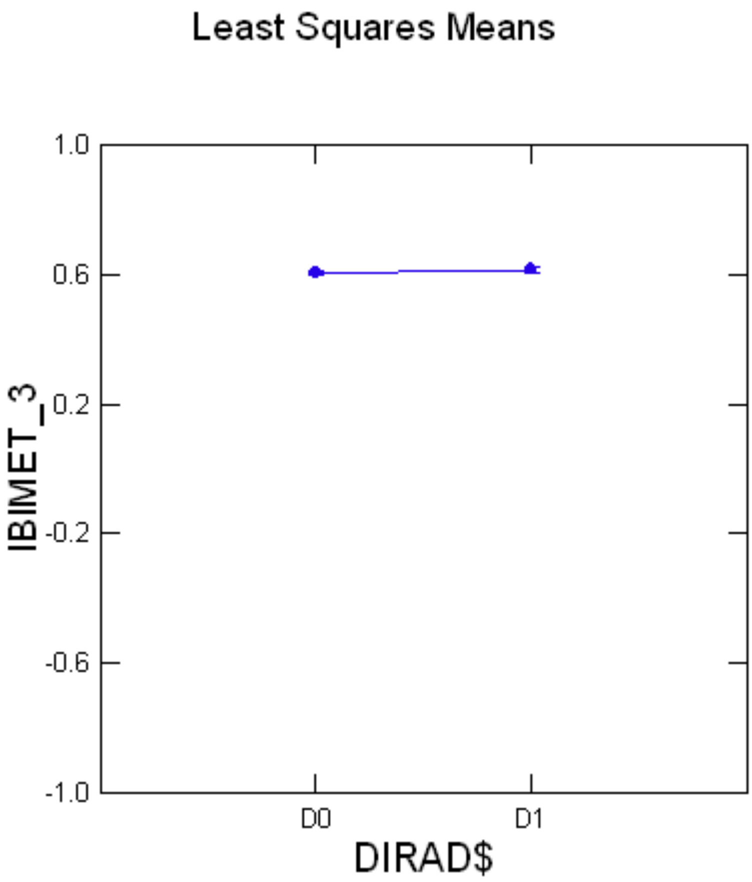
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.163 | 2 | 0.082 | 174.616 | 0.000 |
| LOCALITA$ | 0.239 | 1 | 0.239 | 512.030 | 0.000 |
| N_GEMME$ | 0.005 | 1 | 0.005 | 10.727 | 0.001 |
| DEFOGL$ | 0.000 | 1 | 0.000 | 0.807 | 0.371 |
| DIRAD$ | 0.002 | 1 | 0.002 | 4.966 | 0.028 |
| LOCALITA$*ANNO | 0.258 | 2 | 0.129 | 275.576 | 0.000 |
| N_GEMME$*ANNO | 0.000 | 2 | 0.000 | 0.074 | 0.929 |
| DEFOGL$*ANNO | 0.001 | 2 | 0.001 | 1.325 | 0.270 |
| DIRAD$*ANNO | 0.000 | 2 | 0.000 | 0.176 | 0.839 |
| N_GEMME$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.159 | 0.690 |
| DEFOGL$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.286 | 0.594 |
| DIRAD$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.382 | 0.538 |
| DEFOGL$*N_GEMME$ | 0.001 | 1 | 0.001 | 2.107 | 0.149 |
| DIRAD$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.801 | 0.373 |
| DIRAD$*DEFOGL$ | 0.001 | 1 | 0.001 | 2.955 | 0.088 |
| BLOCCO(LOCALITA$) | 0.267 | 4 | 0.067 | 142.776 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.026 | 8 | 0.003 | 7.024 | 0.000 |
| Error | 0.052 | 111 | 0.000 | | |


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_3
2008
2009
2010
ANNO

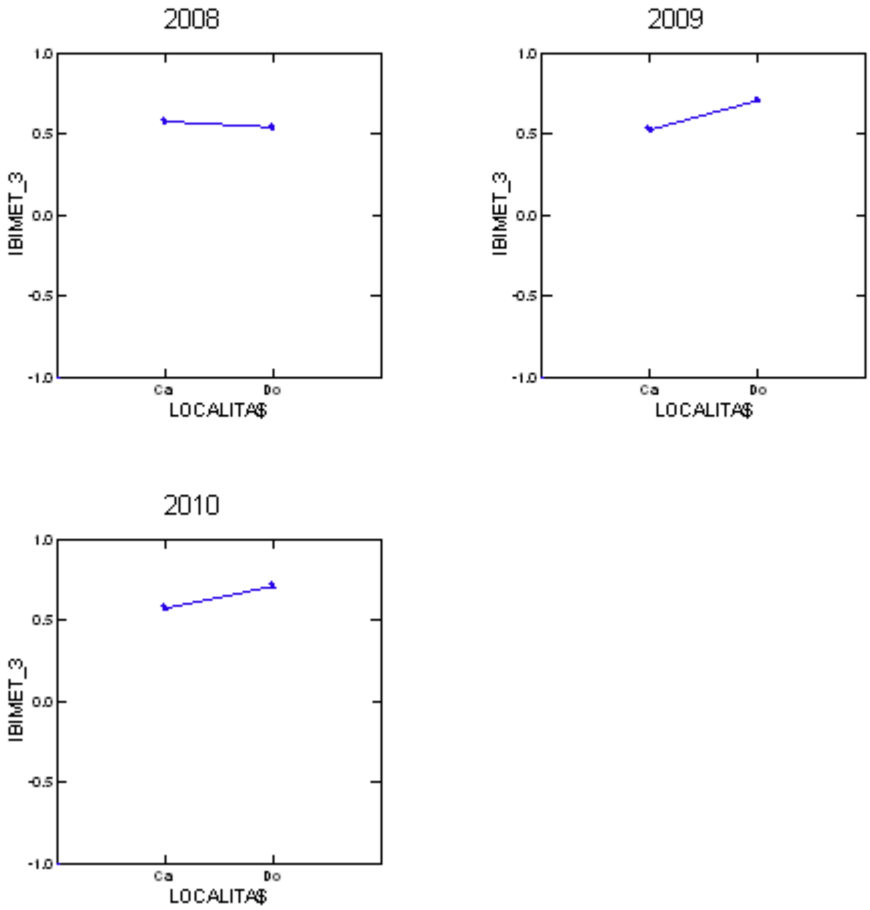

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_3
Ca
Do
LOCALITA$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_3
C0
C1
N_GEMME$

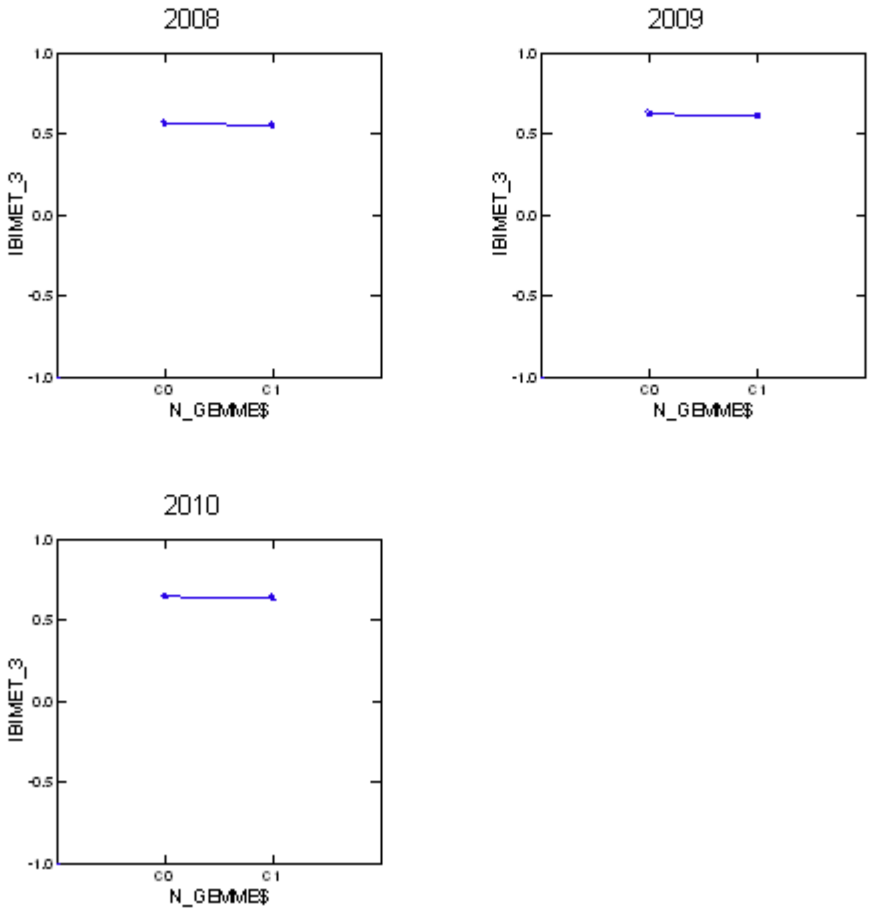

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_3
A0
A1
DEFOGL$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IBIMET_3
D0
D1
DIRAD$

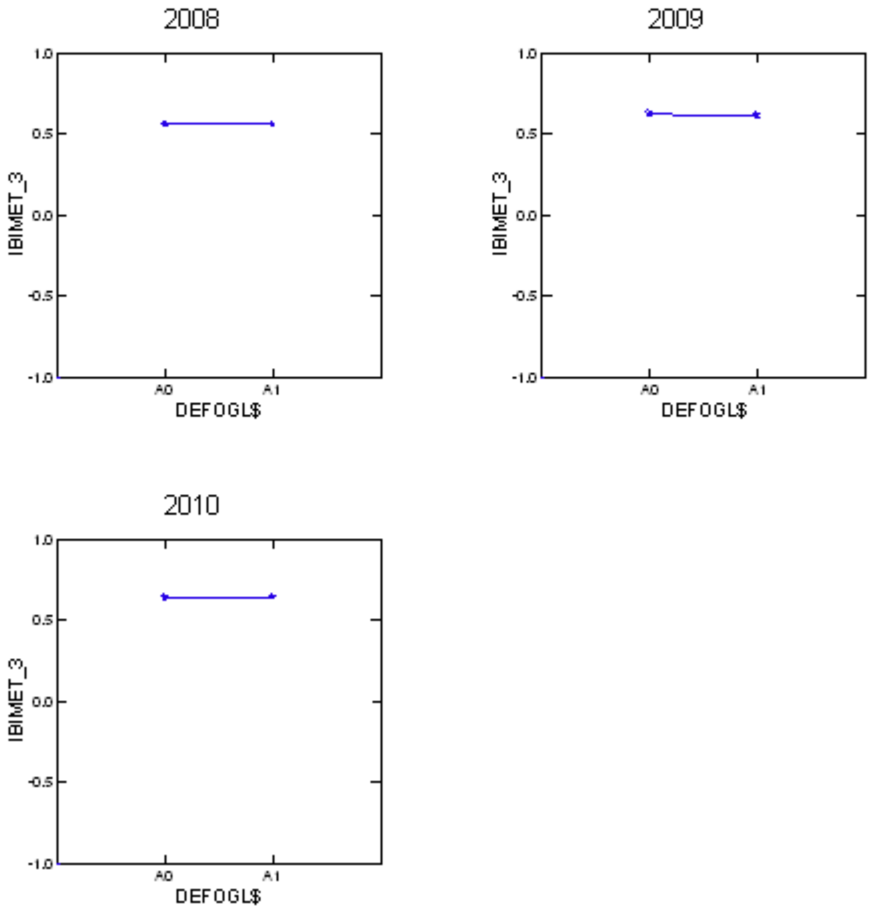
# Least Squares Means

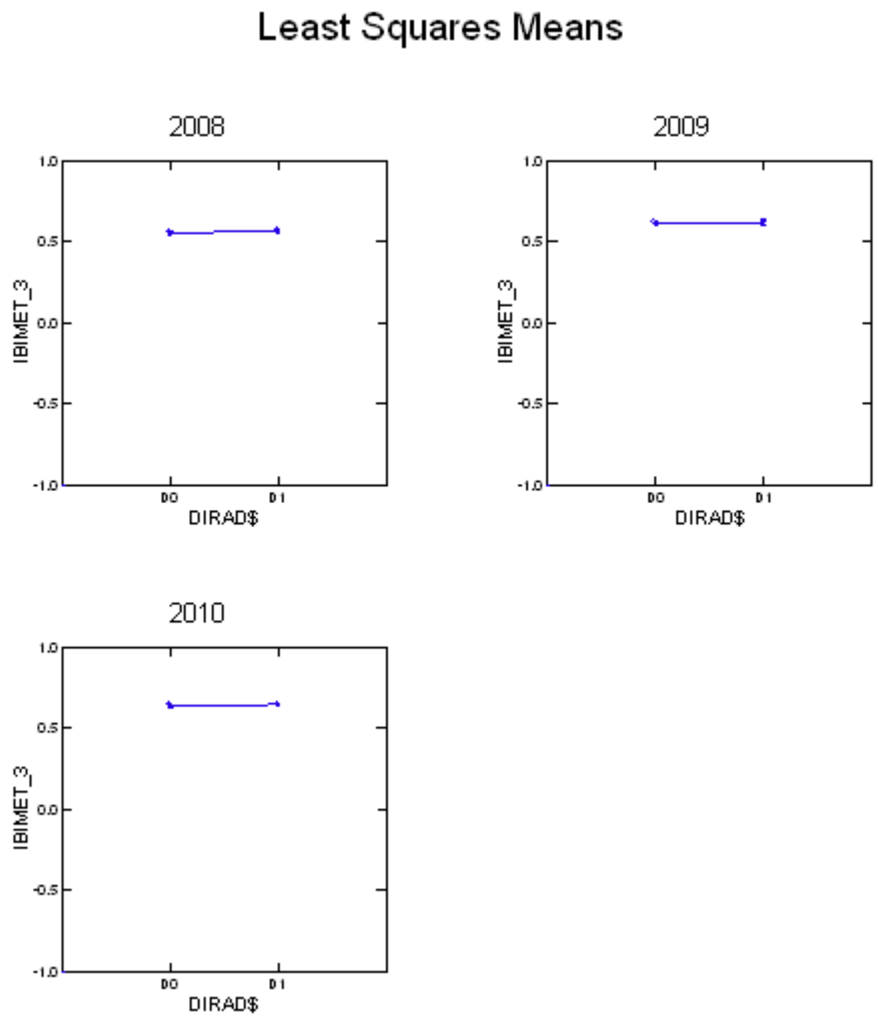


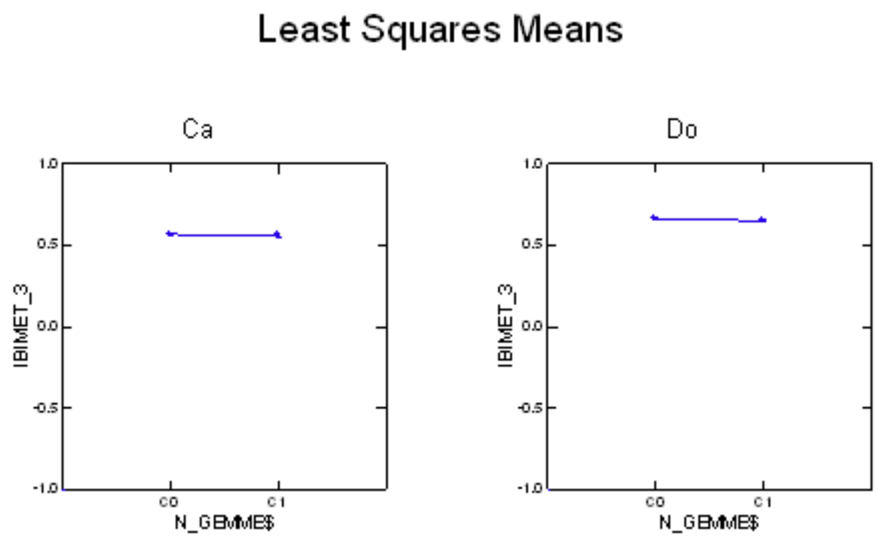
# Least Squares Means

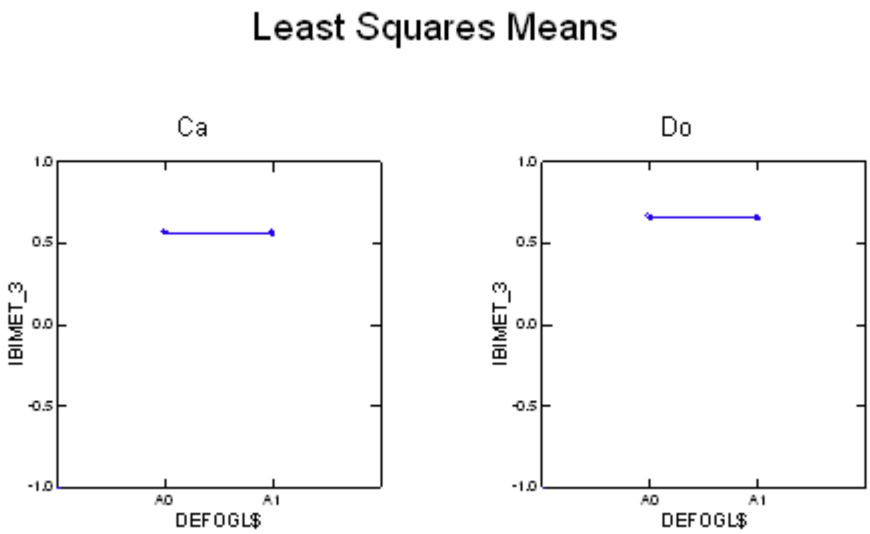


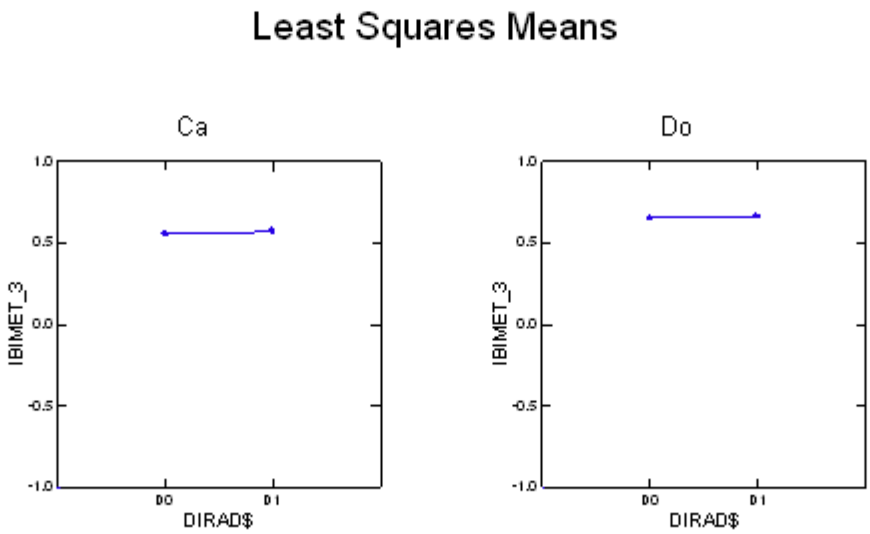
# Least Squares Means

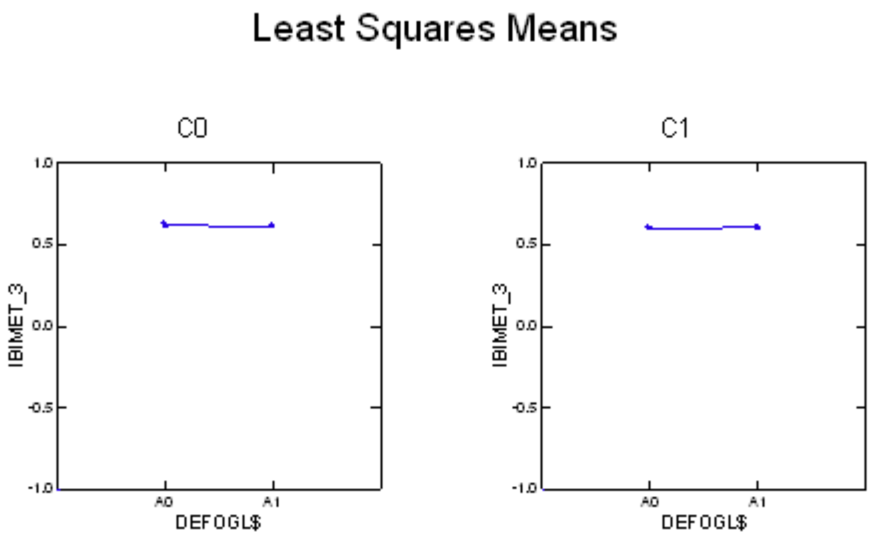



Least Squares Means
2008
2009
2010
IBIMET_3
1.0
0.5
0.0
-0.5
-1.0
D0
D1
DIRAD$

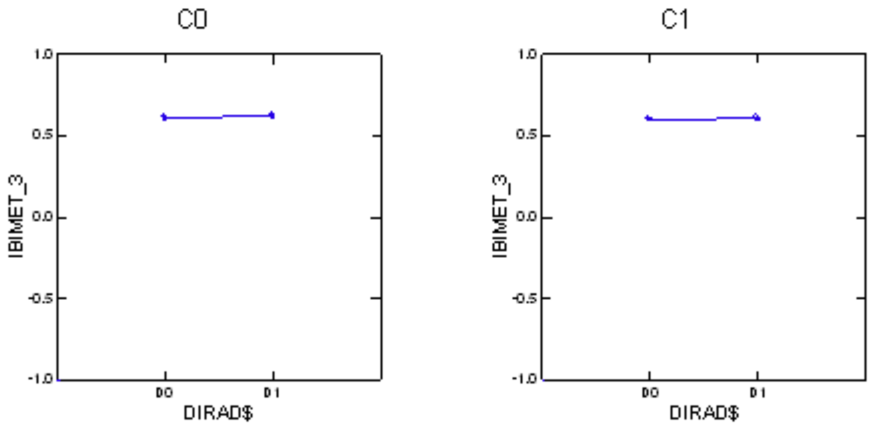

Least Squares Means
Ca
Do
IBIMET_3
1.0
0.5
0.0
-0.5
-1.0
C0
C1
N_GEMME$


Least Squares Means
Ca
Do
IBIMET_3
1.0
0.5
0.0
-0.5
-1.0
A0
A1
DEFOGL$

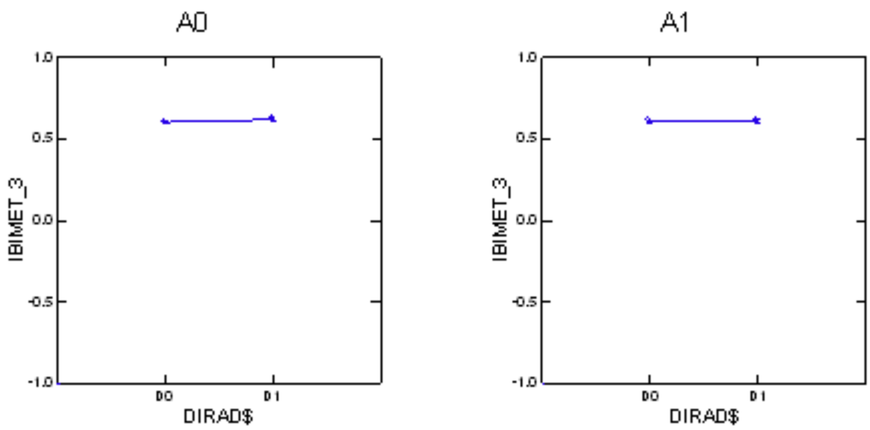

Least Squares Means
Ca
Do
IBIMET_3
1.0
0.5
0.0
-0.5
-1.0
D0
D1
DIRAD$


Least Squares Means
C0
C1
IBIMET_3
1.0
0.5
0.0
-0.5
-1.0
A0
A1
DEFOGL$

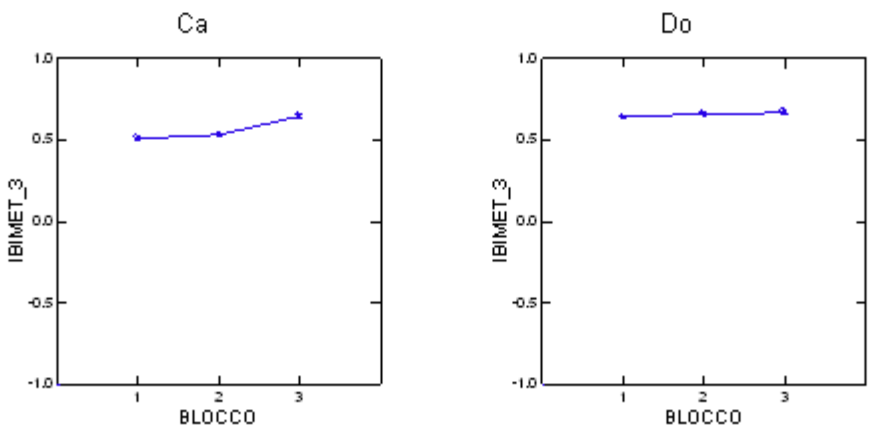
## Least Squares Means



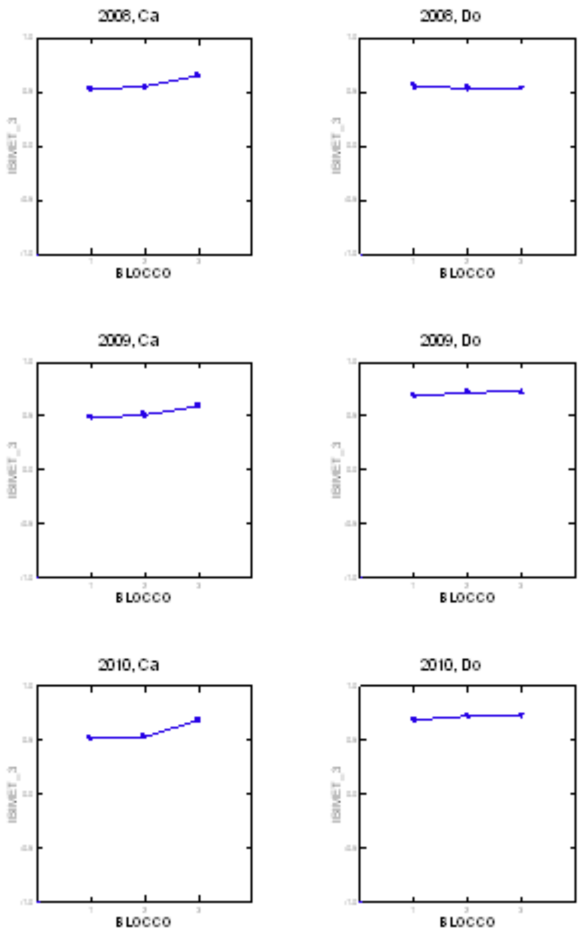

## Least Squares Means




## Least Squares Means



## Least Squares Means




| | |
|---|---|
| Durbin-Watson D Statistic | 1.271 |
| First Order Autocorrelation | 0.360 |

**Information Criteria**

| | |
|---|---|
| AIC | -665.037 |
| AIC (Corrected) | -643.203 |
| Schwarz's BIC | -564.064 |

### ▼General Linear Model

### IASMA1 2008- 2009-2010

Data for the following results were selected according to
SELECT (VARIETA$ = 'Cabernet')

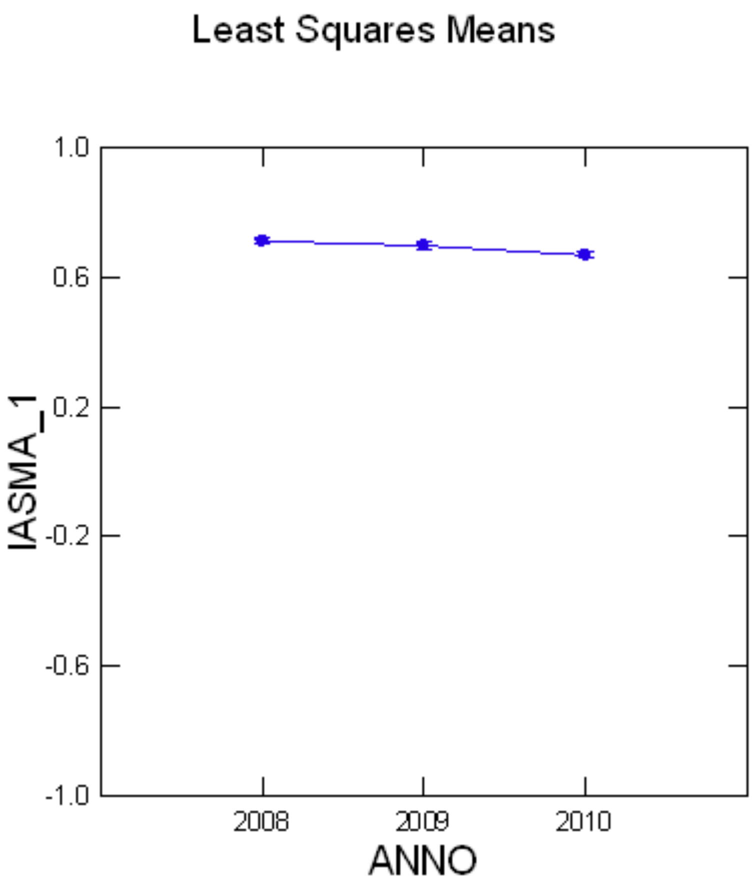
Effects coding used for categorical variables in model.
The categorical values encountered during processing are

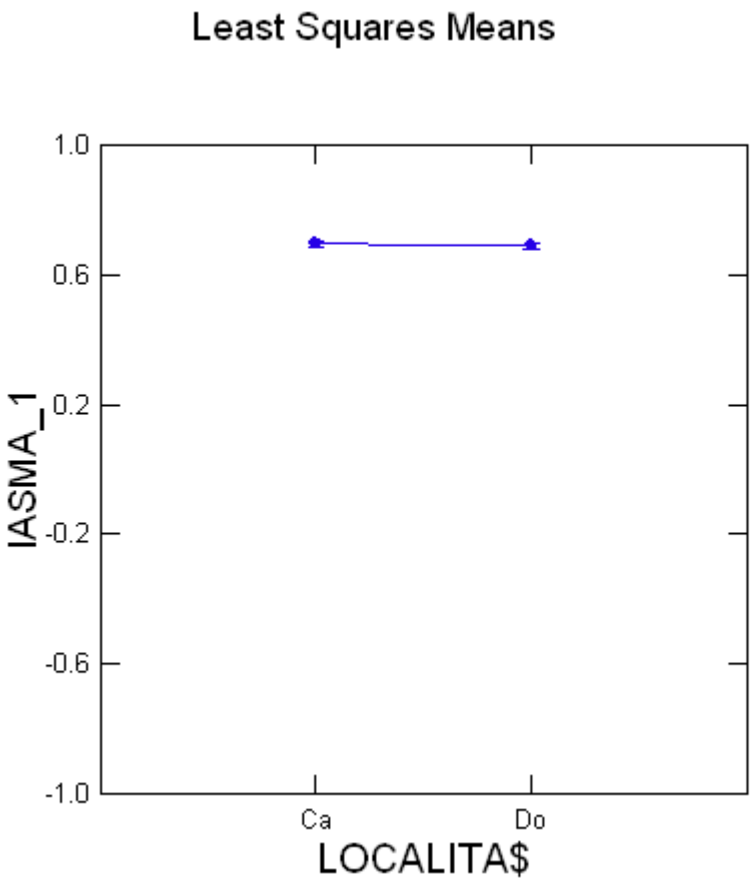
| Variables | Levels | | |
|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 |
| LOCALITA$ (2 levels) | Ca | Do | |
| N_GEMME$ (2 levels) | C0 | C1 | |
| DEFOGL$ (2 levels) | A0 | A1 | |
| DIRAD$ (2 levels) | D0 | D1 | |
| BLOCCO (3 levels) | 1.000 | 2.000 | 3.000 |

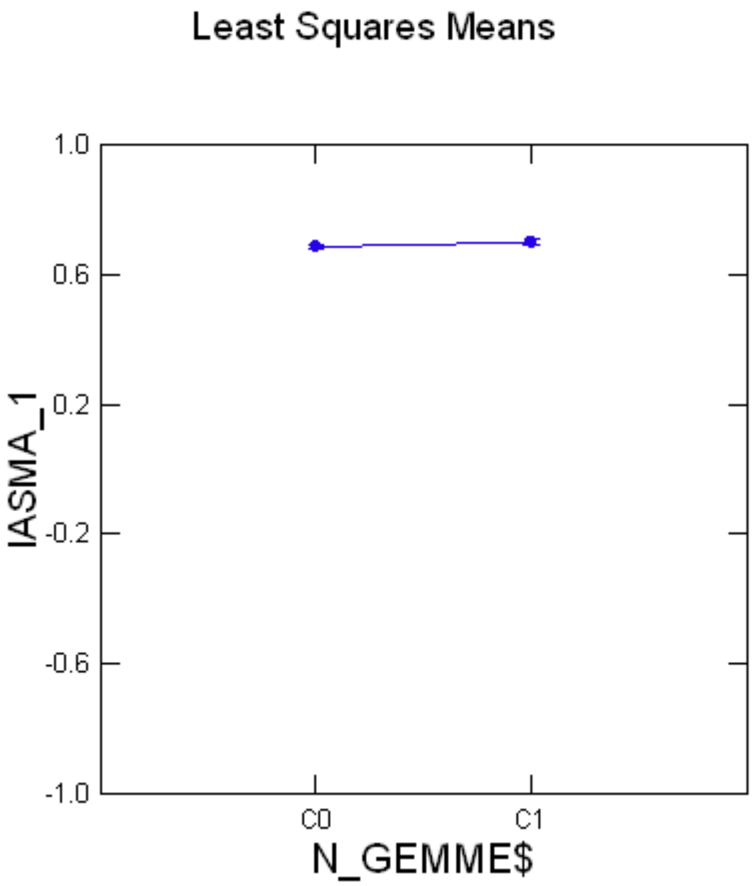
| | |
|---|---|
| Dependent Variable | IASMA_1 |
| N | 144 |
| Multiple R | 0.808 |
| Squared Multiple R | 0.653 |

**Analysis of Variance**

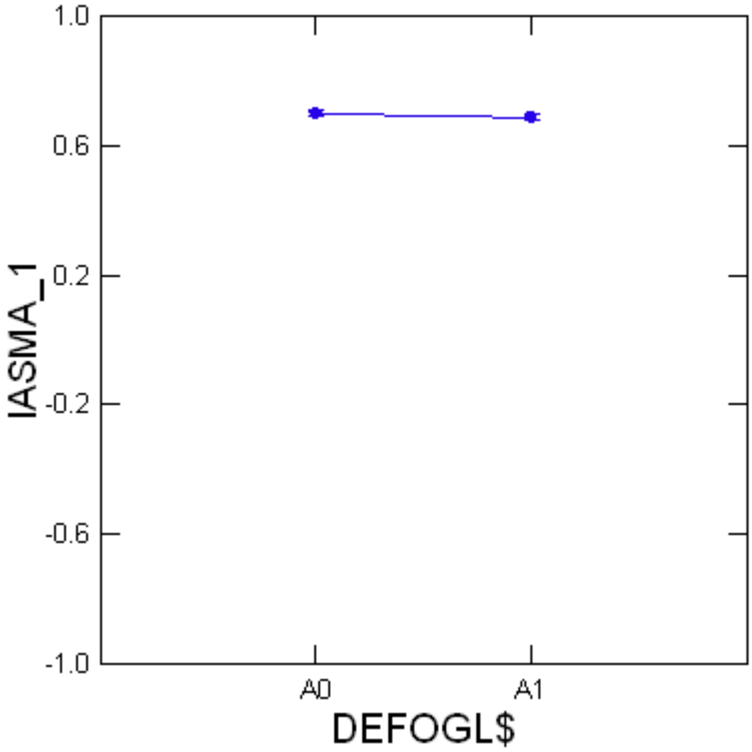
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.047 | 2 | 0.024 | 20.819 | 0.000 |
| LOCALITA$ | 0.002 | 1 | 0.002 | 1.565 | 0.214 |
| N_GEMME$ | 0.007 | 1 | 0.007 | 6.163 | 0.015 |
| DEFOGL$ | 0.006 | 1 | 0.006 | 4.961 | 0.028 |
| DIRAD$ | 0.000 | 1 | 0.000 | 0.226 | 0.636 |
| LOCALITA$*ANNO | 0.053 | 2 | 0.026 | 23.248 | 0.000 |
| N_GEMME$*ANNO | 0.004 | 2 | 0.002 | 1.763 | 0.176 |
| DEFOGL$*ANNO | 0.001 | 2 | 0.001 | 0.520 | 0.596 |
| DIRAD$*ANNO | 0.000 | 2 | 0.000 | 0.004 | 0.996 |
| N_GEMME$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.131 | 0.718 |
| DEFOGL$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.087 | 0.769 |
| DIRAD$*LOCALITA$ | 0.005 | 1 | 0.005 | 4.270 | 0.041 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.130 | 0.719 |
| DIRAD$*N_GEMME$ | 0.002 | 1 | 0.002 | 2.161 | 0.144 |
| DIRAD$*DEFOGL$ | 0.002 | 1 | 0.002 | 2.118 | 0.148 |
| BLOCCO(LOCALITA$) | 0.039 | 4 | 0.010 | 8.616 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.024 | 8 | 0.003 | 2.706 | 0.009 |
| Error | 0.126 | 111 | 0.001 | | |



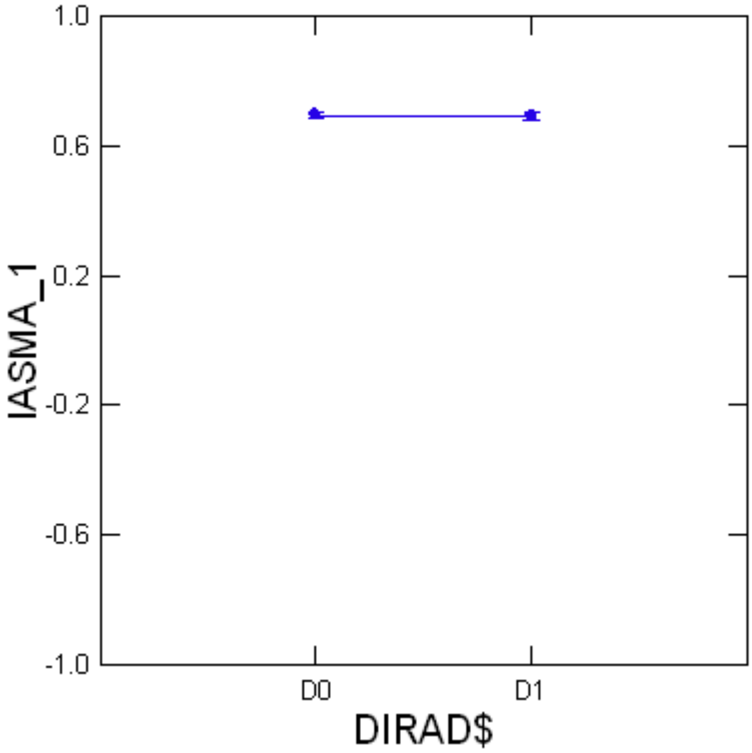

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_1
Ca
Do
LOCALITA$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_1
C0
C1
N_GEMME$

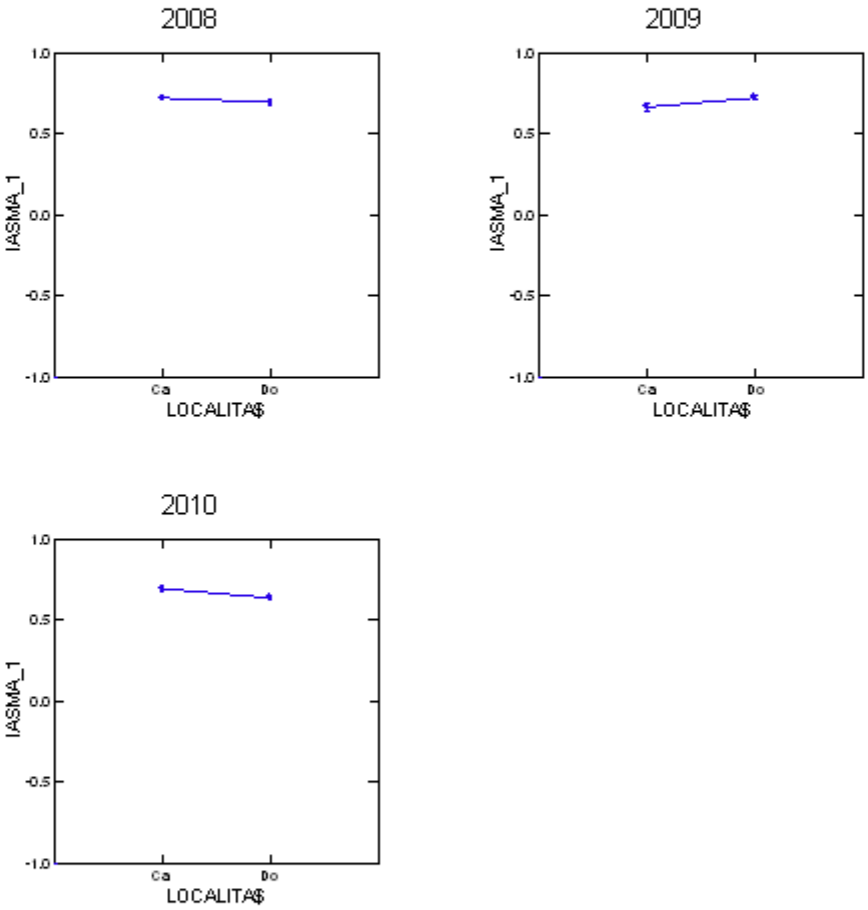
Least Squares Means



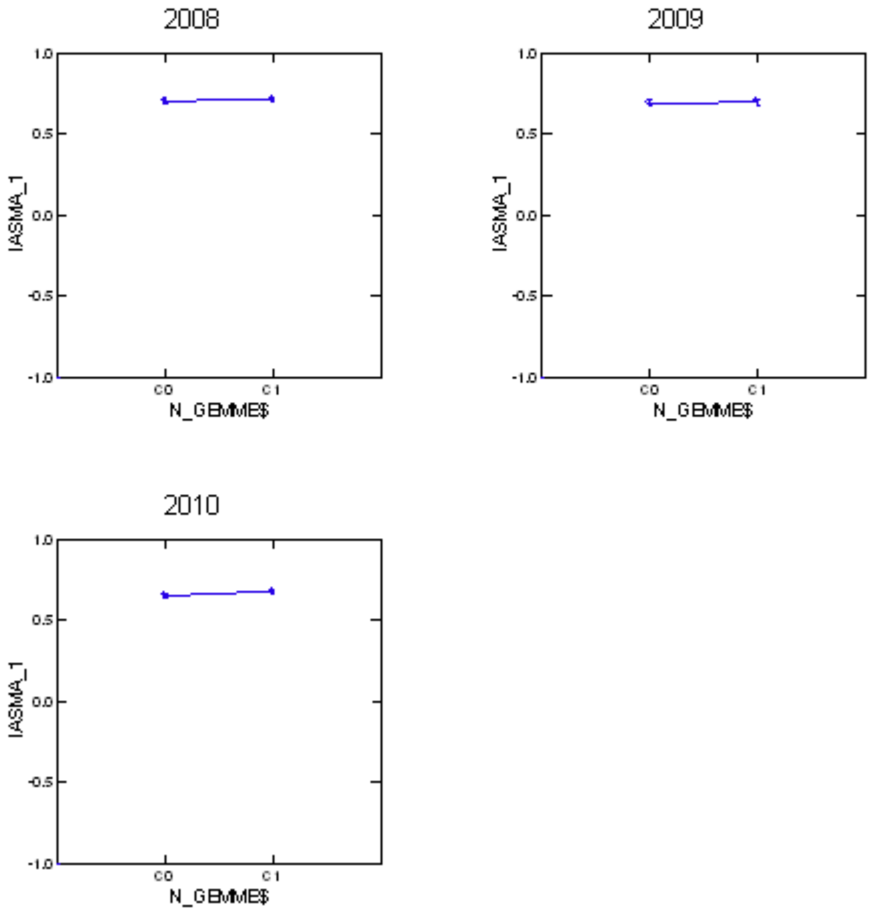

Least Squares Means



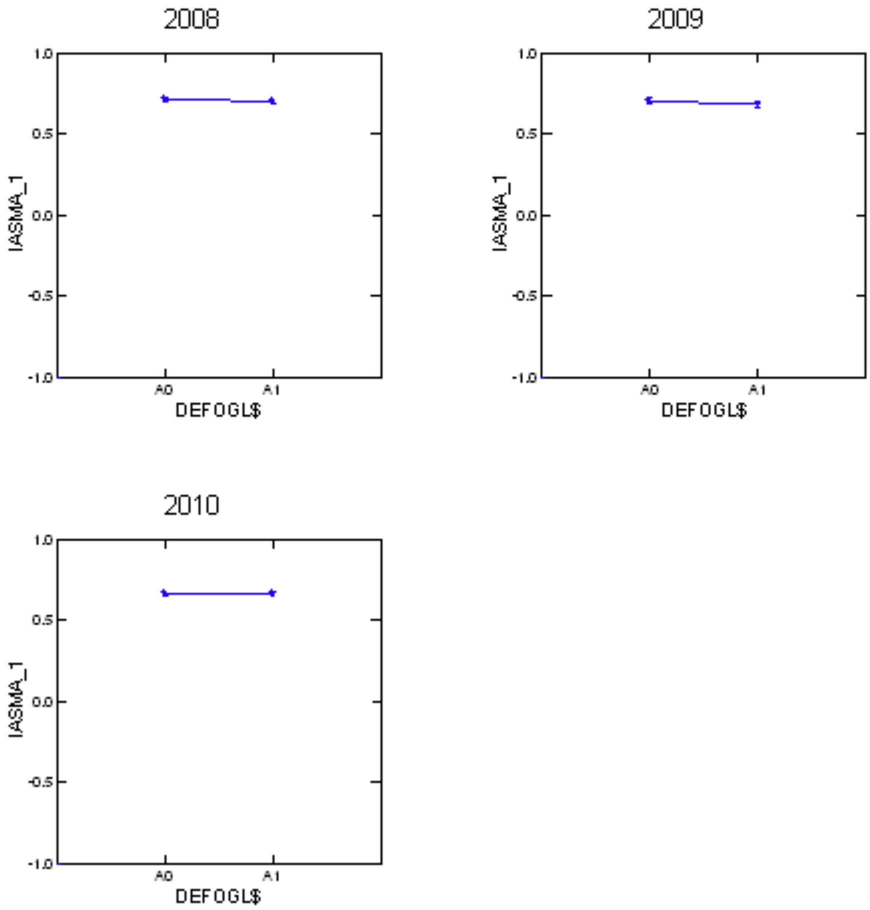
# Least Squares Means



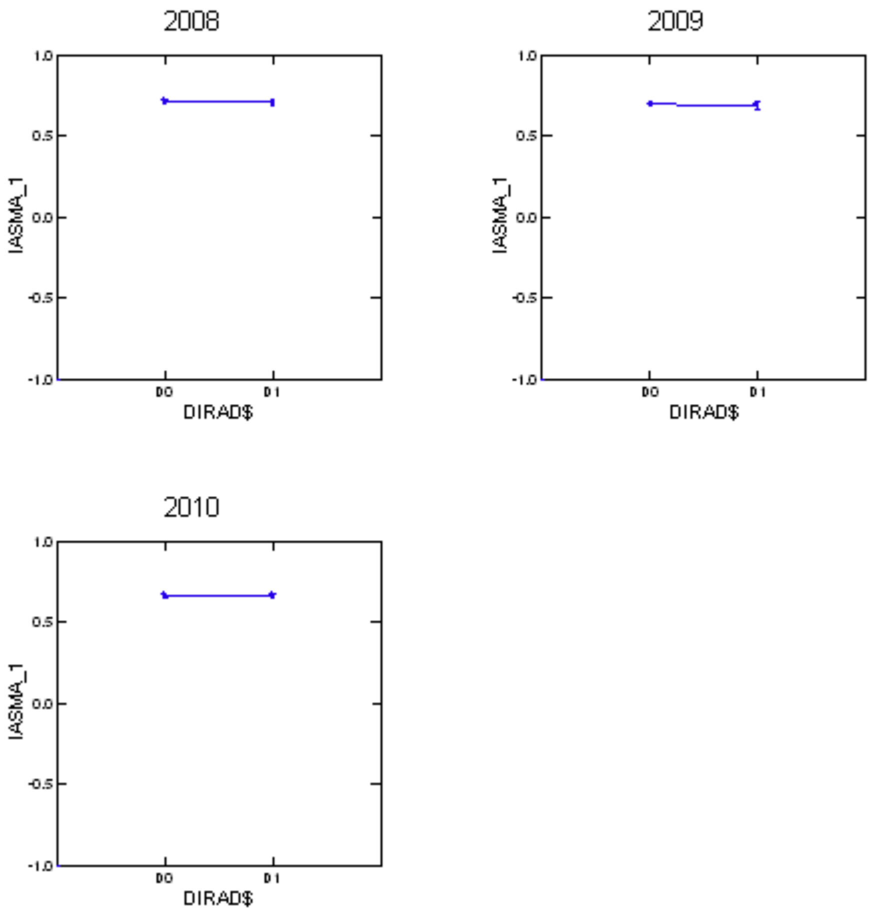
# Least Squares Means



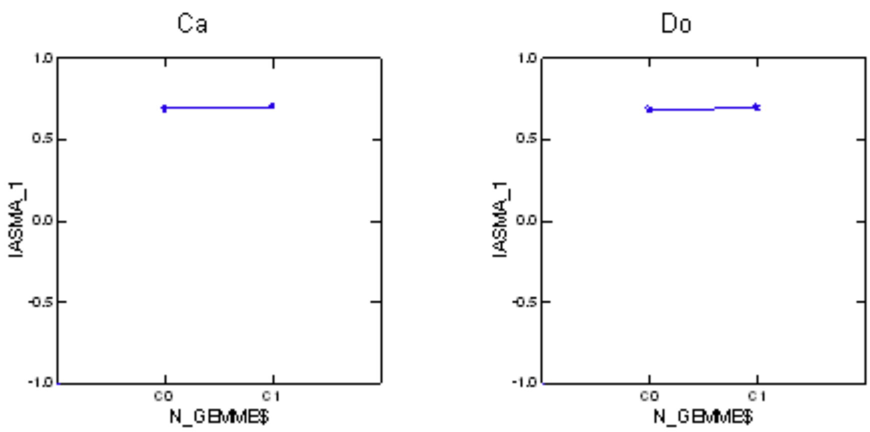
## Least Squares Means

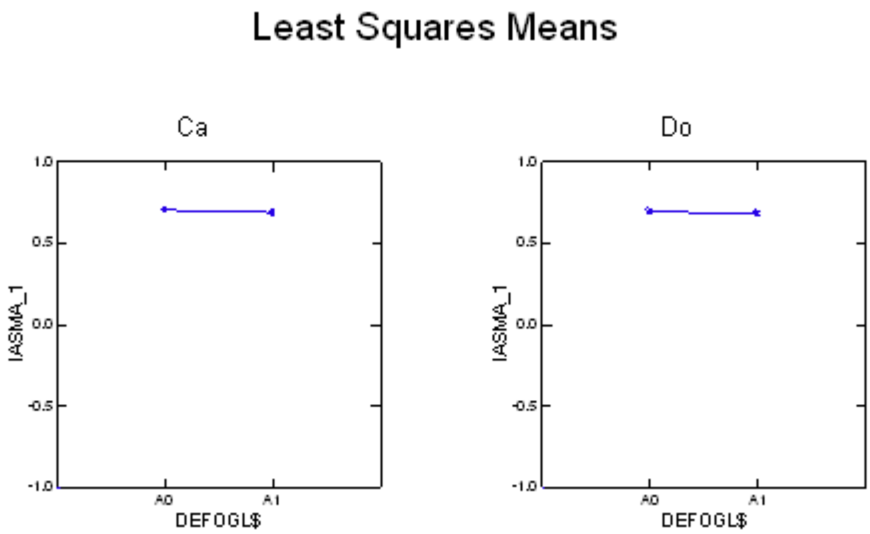


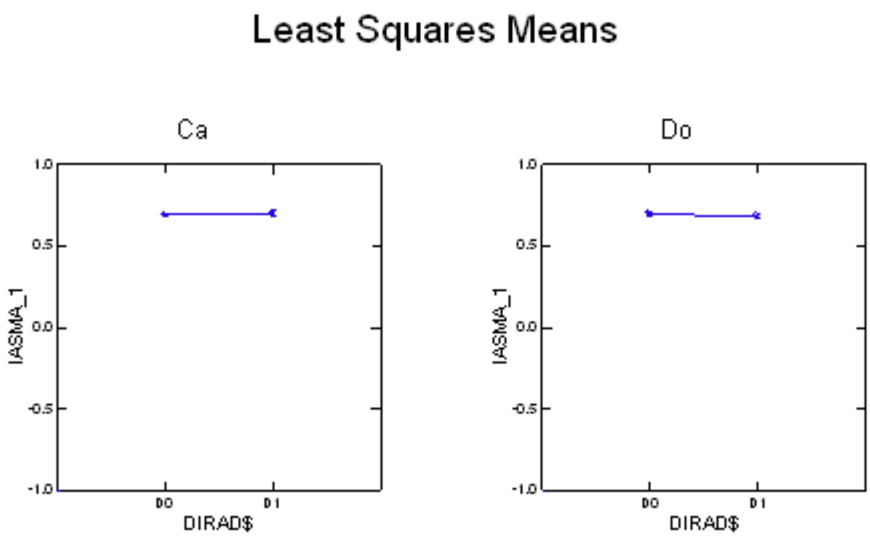
## Least Squares Means

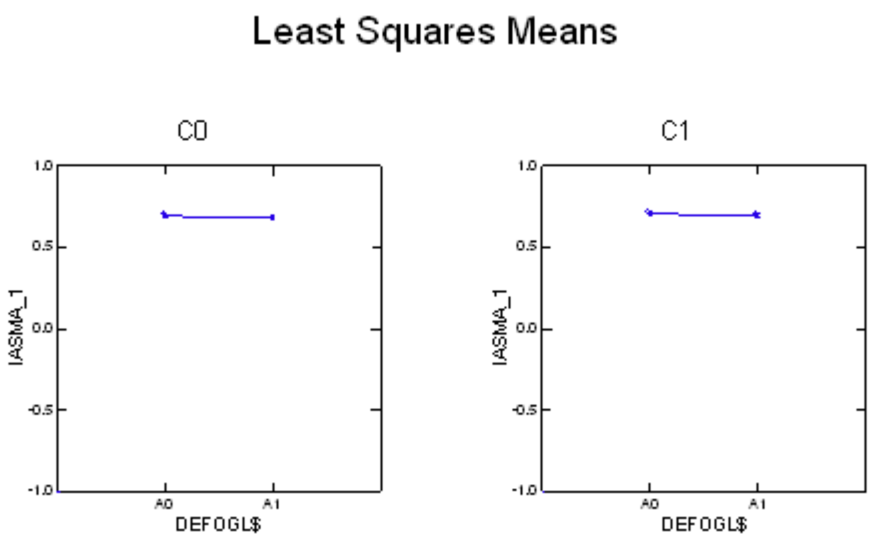



## Least Squares Means

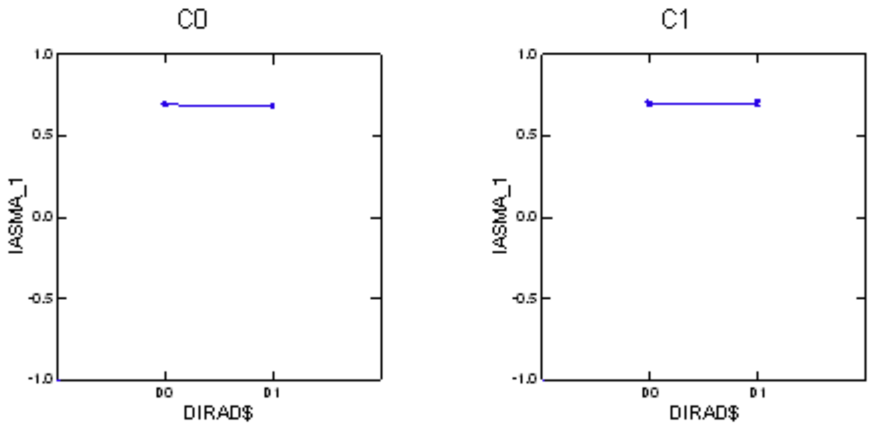



Least Squares Means
Ca
Do
IASMA_1
1.0
0.5
0.0
-0.5
-1.0
A0
A1
DEFOGL$

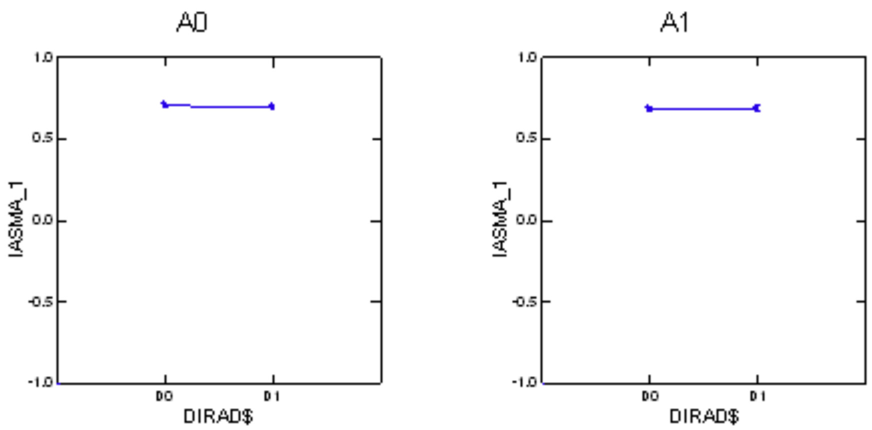

Least Squares Means
Ca
Do
IASMA_1
1.0
0.5
0.0
-0.5
-1.0
D0
D1
DIRAD$


Least Squares Means
C0
C1
IASMA_1
1.0
0.5
0.0
-0.5
-1.0
A0
A1
DEFOGL$

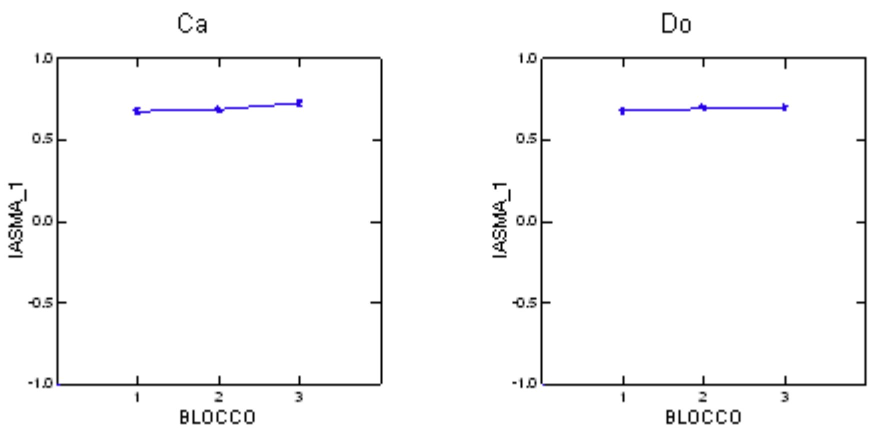
## Least Squares Means



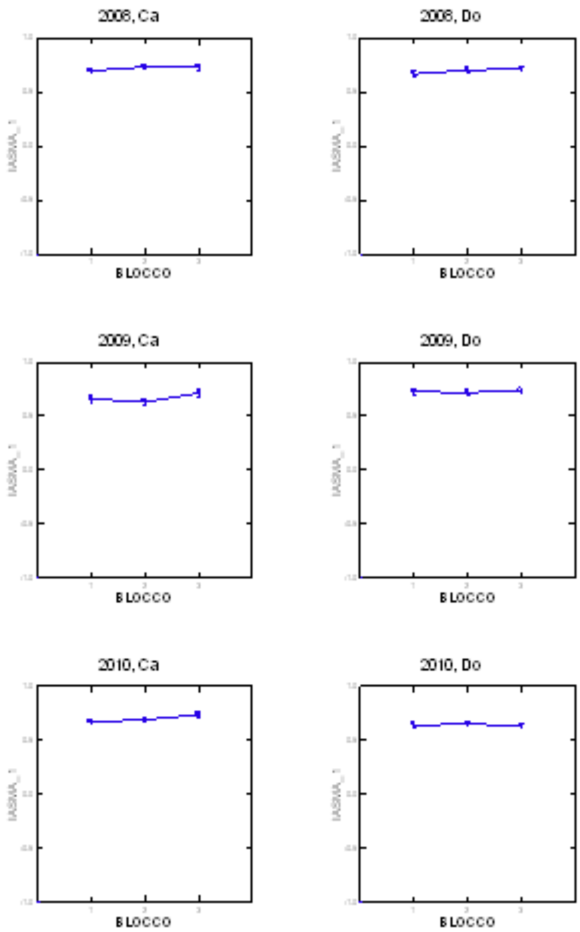

## Least Squares Means




## Least Squares Means



Least Squares Means




*** WARNING *** :

Case 266 is an Outlier (Studentized Residual : -4.355)

| | |
|---|---|
| Durbin-Watson D Statistic | 1.916 |
| First Order Autocorrelation | 0.022 |

**Information Criteria**

| | |
|---|---|
| AIC | -537.762 |
| AIC (Corrected) | -515.927 |
| Schwarz's BIC | -436.788 |

## ▼General Linear Model
## IASMA2 2008- 2009-2010

Data for the following results were selected according to
SELECT (VARIETA$ = 'Cabernet')

Effects coding used for categorical variables in model.
The categorical values encountered during processing are

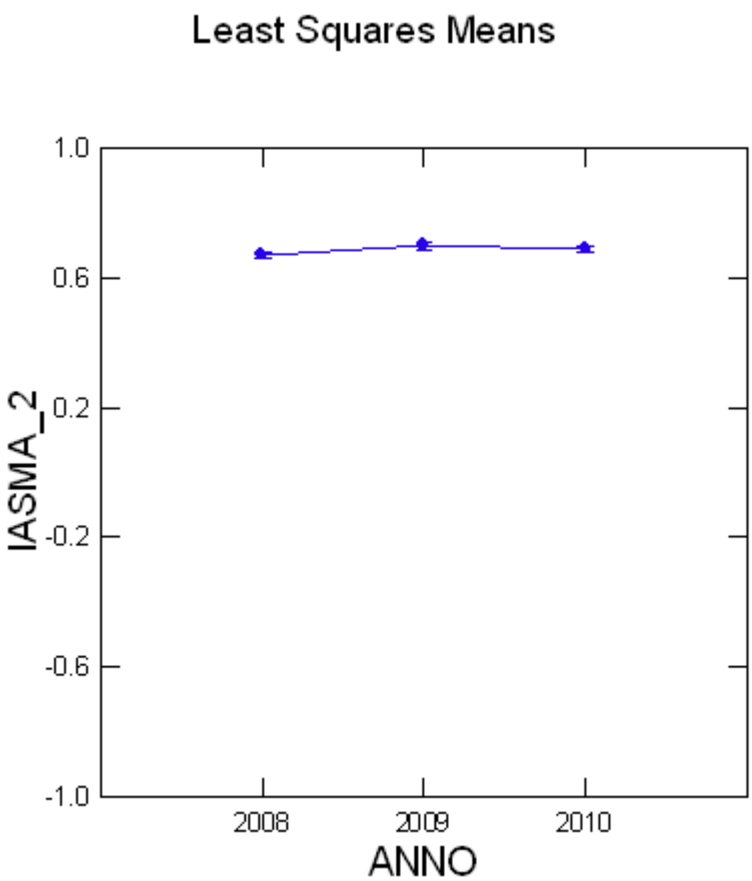
| Variables | Levels | | |
|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 |
| LOCALITA$ (2 levels) | Ca | Do | |

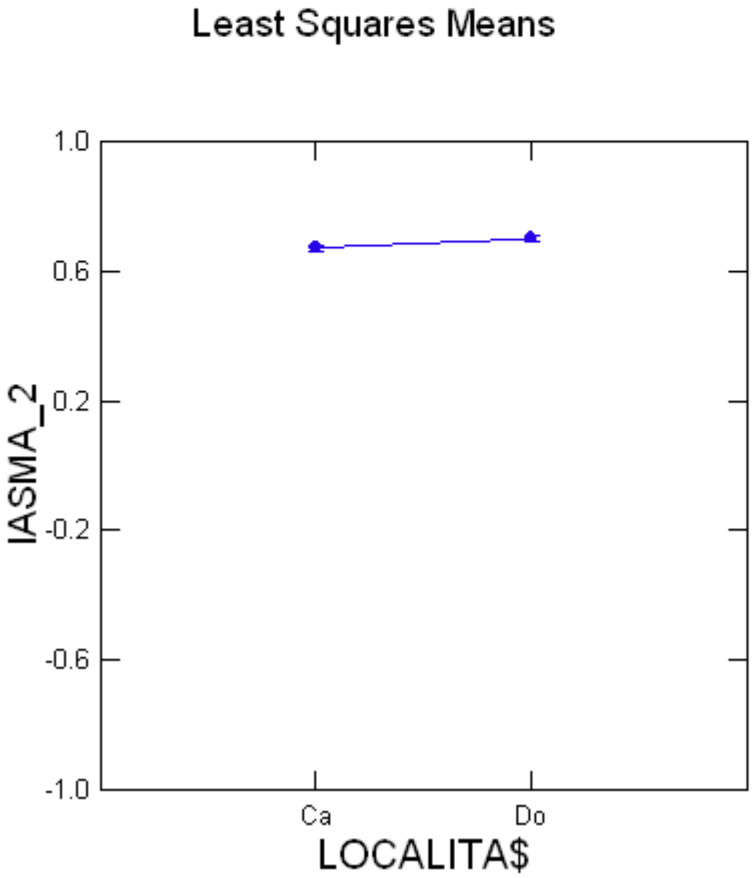
| | | | |
|---|---|---|---|
| N_GEMME$ (2 levels) | C0 | C1 | |
| DEFOGL$ (2 levels) | A0 | A1 | |
| DIRAD$ (2 levels) | D0 | D1 | |
| BLOCCO (3 levels) | 1.000 | 2.000 | 3.000 |

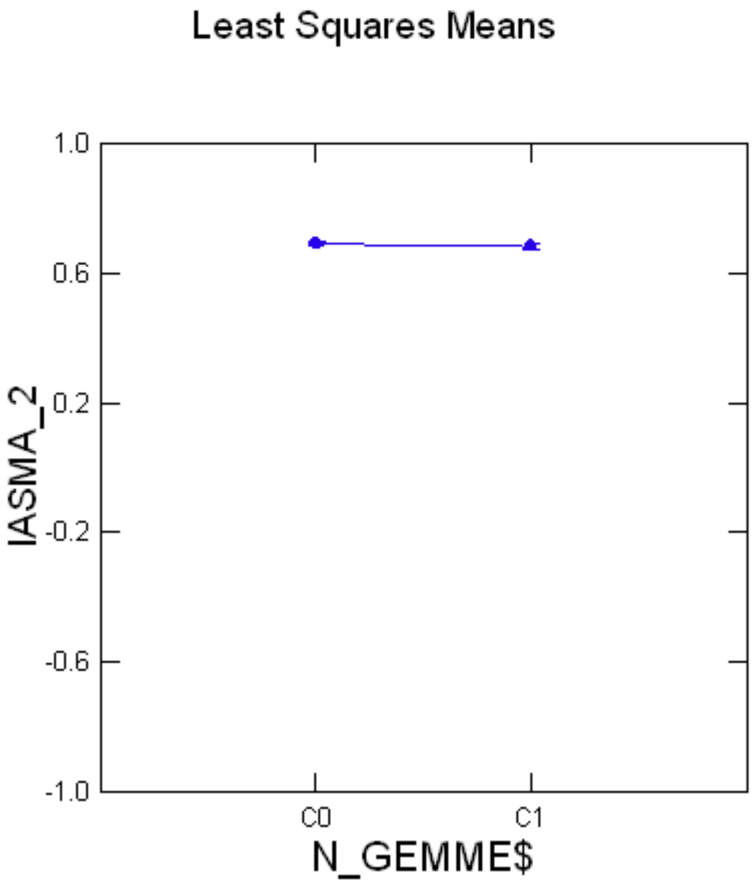
| | |
|---|---|
| Dependent Variable | IASMA_2 |
| N | 144 |
| Multiple R | 0.841 |
| Squared Multiple R | 0.707 |

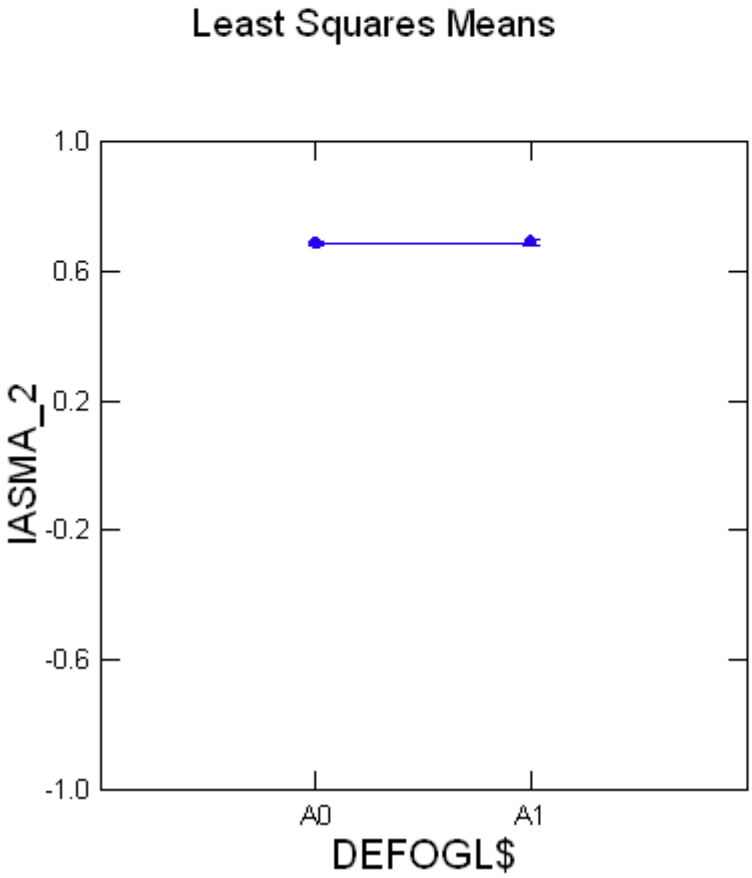
**Analysis of Variance**

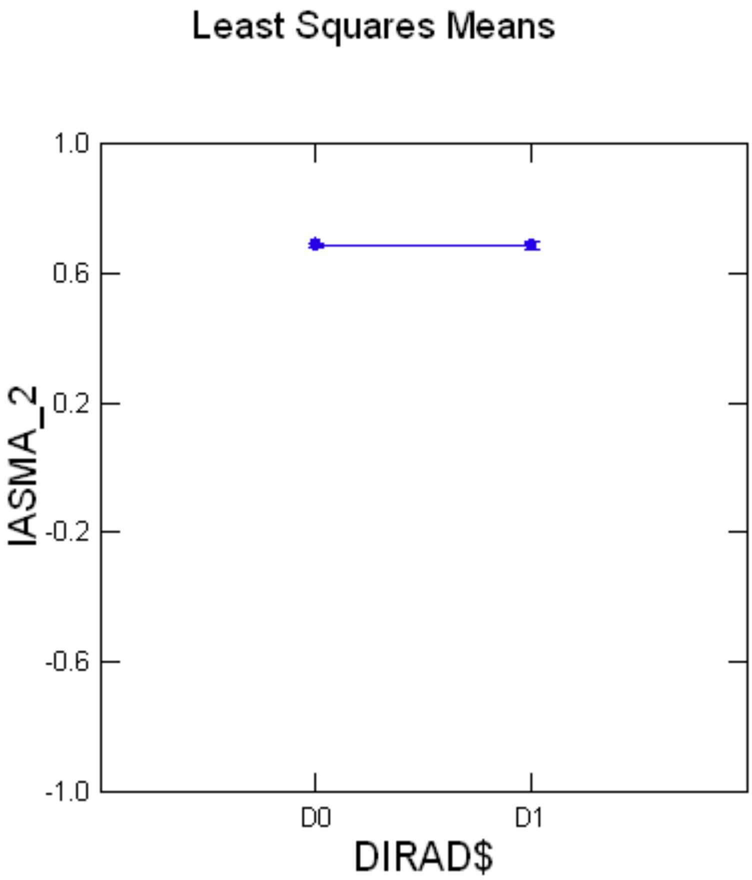
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.017 | 2 | 0.008 | 9.077 | 0.000 |
| LOCALITA$ | 0.021 | 1 | 0.021 | 22.409 | 0.000 |
| N_GEMME$ | 0.003 | 1 | 0.003 | 2.952 | 0.089 |
| DEFOGL$ | 0.000 | 1 | 0.000 | 0.375 | 0.541 |
| DIRAD$ | 0.000 | 1 | 0.000 | 0.076 | 0.783 |
| LOCALITA$*ANNO | 0.051 | 2 | 0.026 | 27.701 | 0.000 |
| N_GEMME$*ANNO | 0.000 | 2 | 0.000 | 0.101 | 0.904 |
| DEFOGL$*ANNO | 0.005 | 2 | 0.003 | 2.776 | 0.067 |
| DIRAD$*ANNO | 0.000 | 2 | 0.000 | 0.009 | 0.991 |
| N_GEMME$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.513 | 0.475 |
| DEFOGL$*LOCALITA$ | 0.002 | 1 | 0.002 | 1.922 | 0.168 |
| DIRAD$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.112 | 0.738 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.191 | 0.663 |
| DIRAD$*N_GEMME$ | 0.002 | 1 | 0.002 | 2.488 | 0.118 |
| DIRAD$*DEFOGL$ | 0.004 | 1 | 0.004 | 4.842 | 0.030 |
| BLOCCO(LOCALITA$) | 0.086 | 4 | 0.022 | 23.421 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.045 | 8 | 0.006 | 6.052 | 0.000 |
| Error | 0.102 | 111 | 0.001 | | |



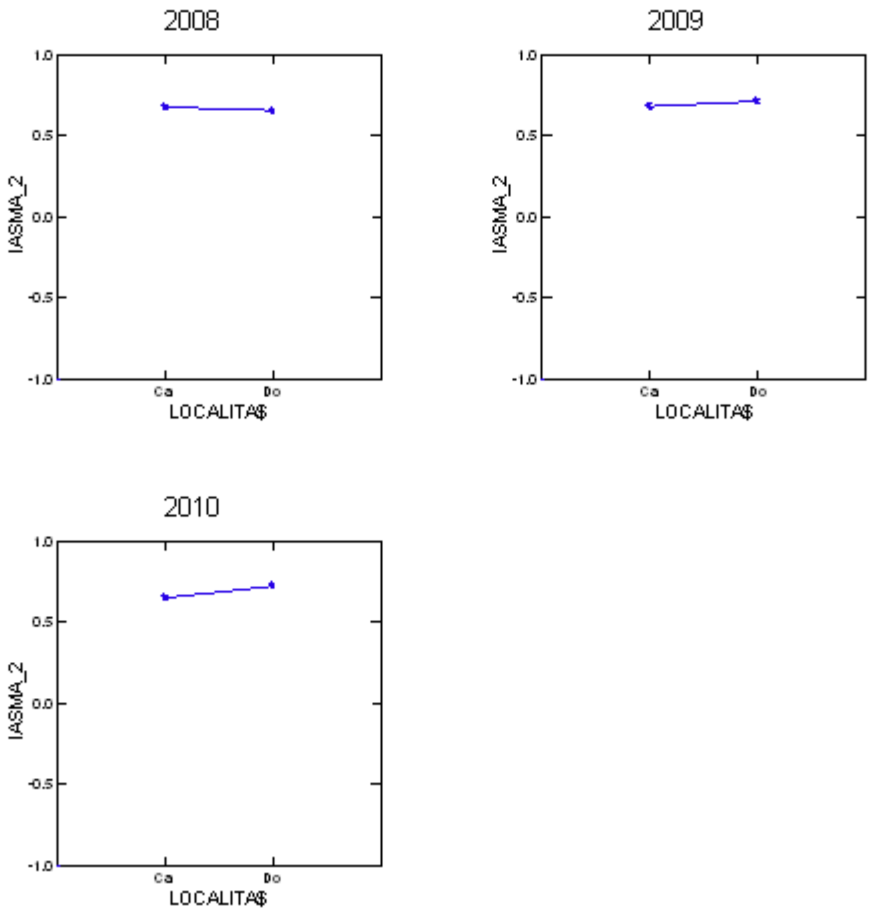

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_2
Ca
Do
LOCALITA$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_2
C0
C1
N_GEMME$

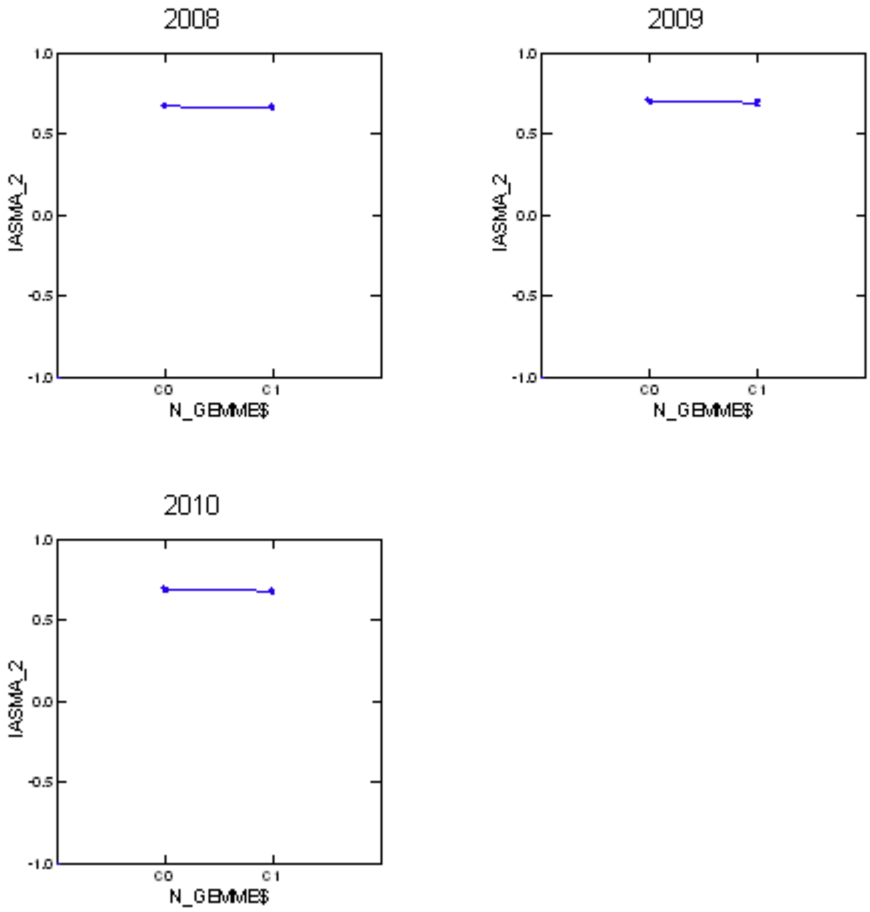

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_2
A0
A1
DEFOGL$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_2
D0
D1
DIRAD$

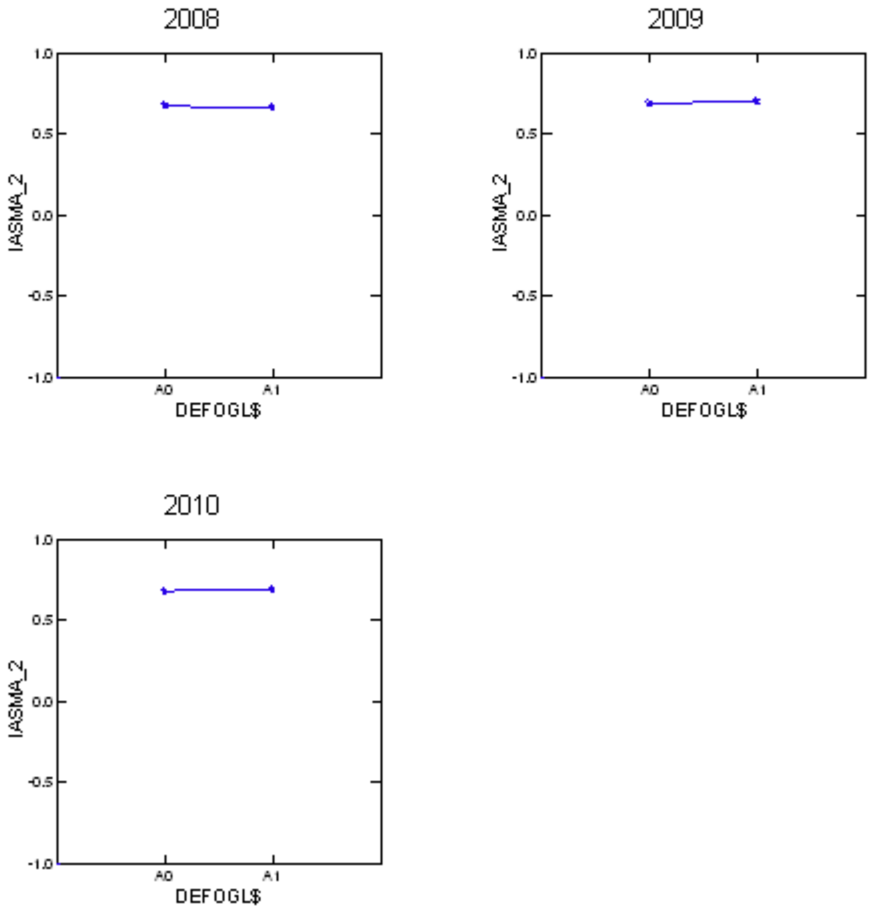
## Least Squares Means



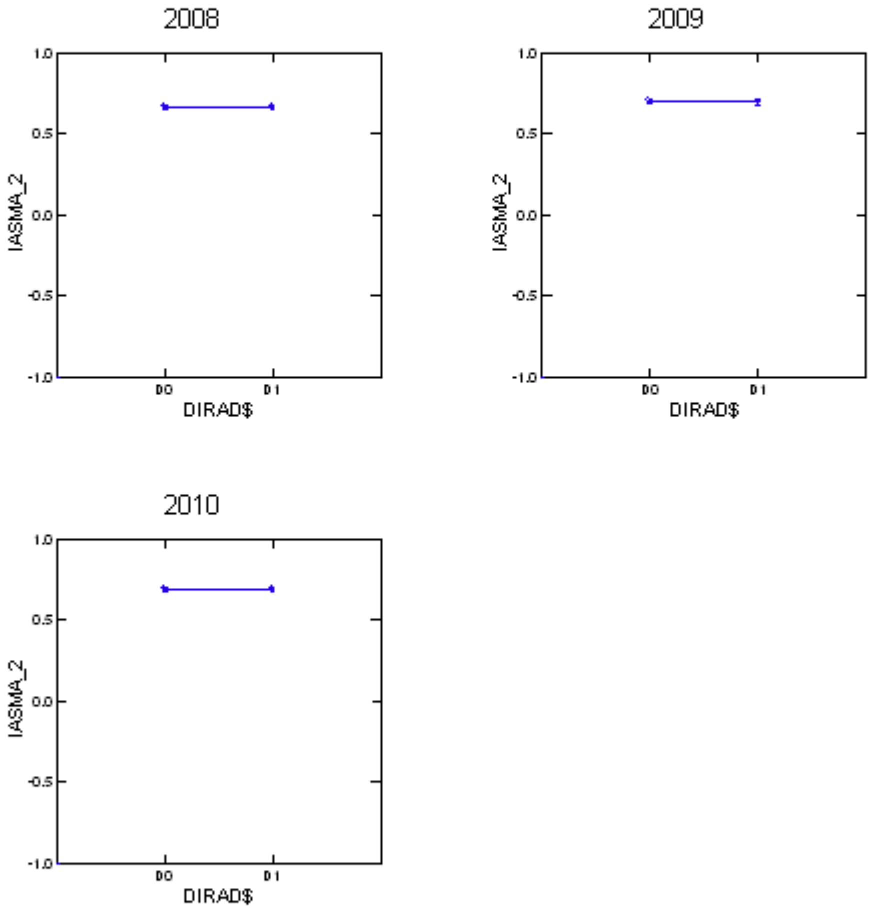
# Least Squares Means



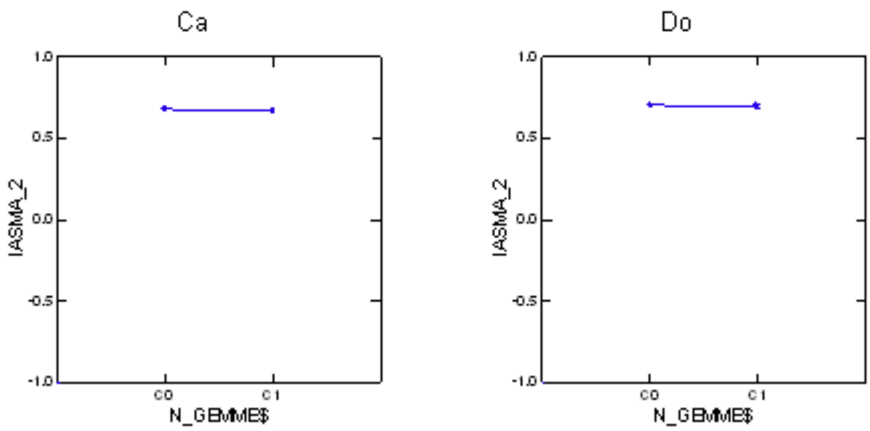
# Least Squares Means



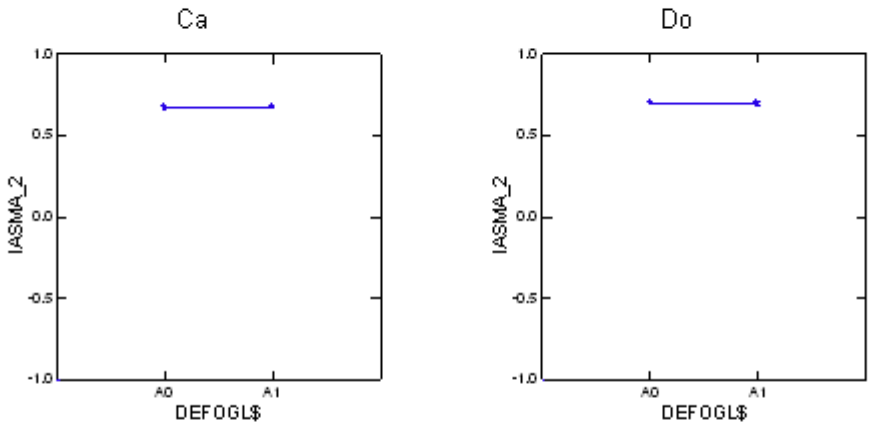
## Least Squares Means



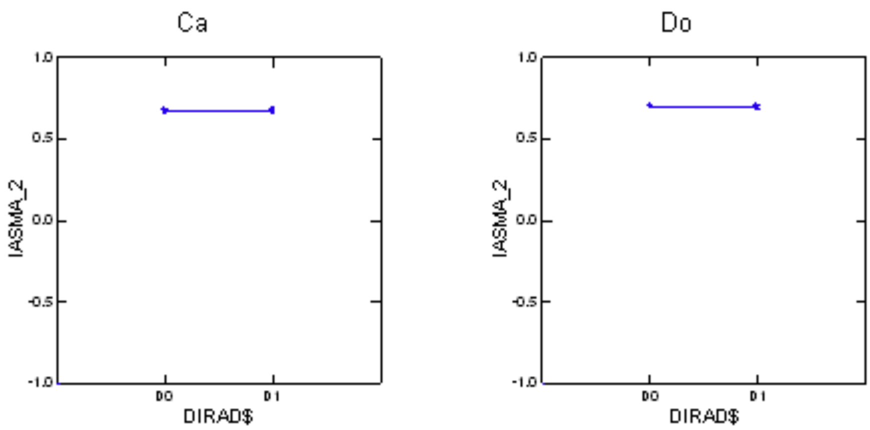

## Least Squares Means



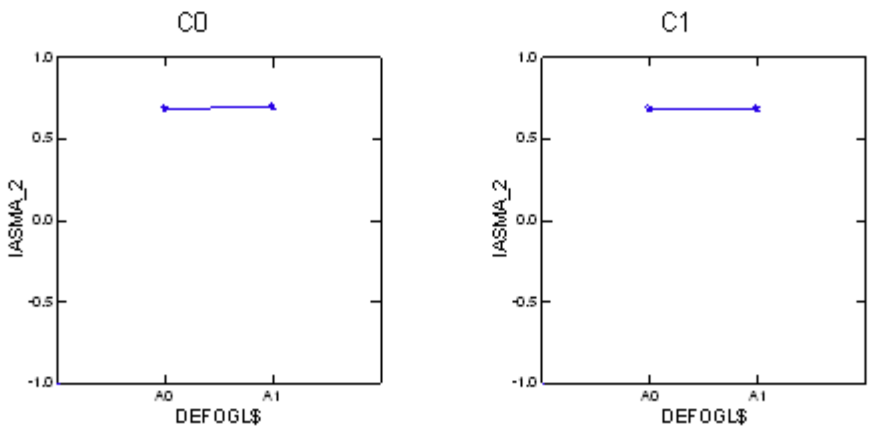
## Least Squares Means

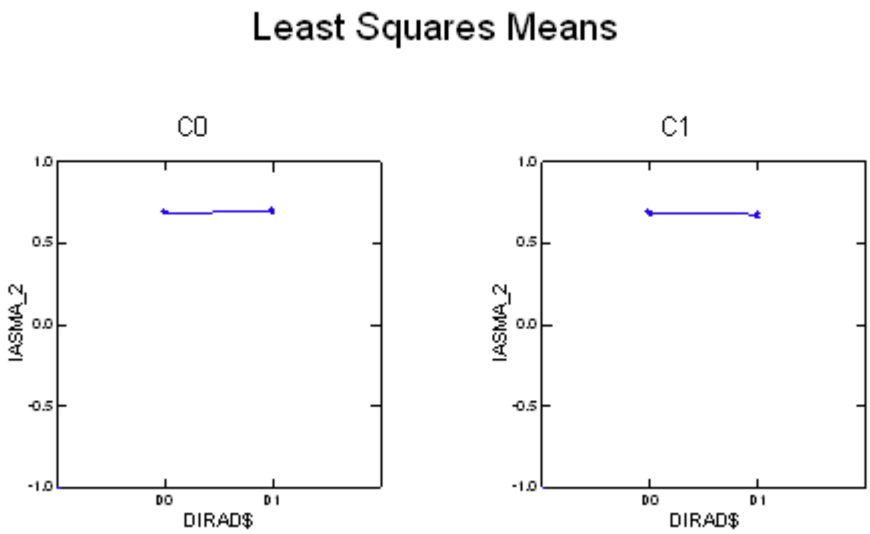


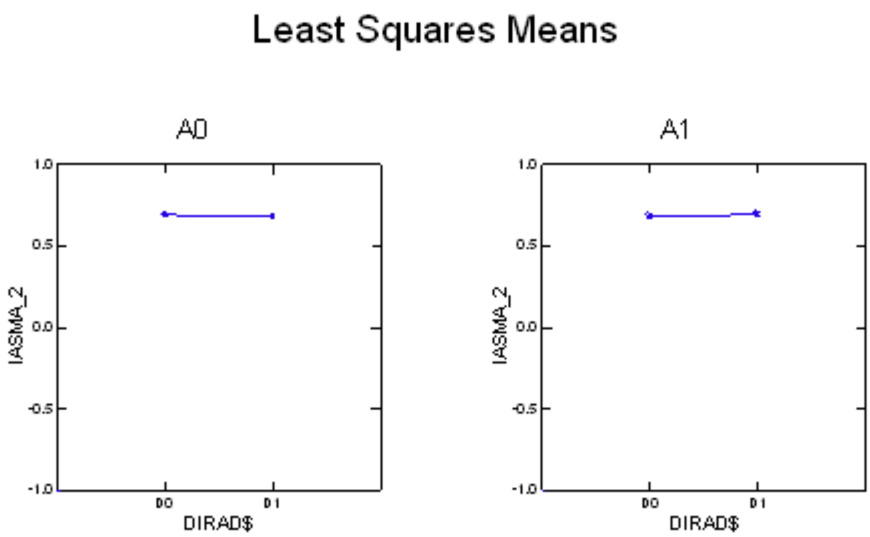

## Least Squares Means

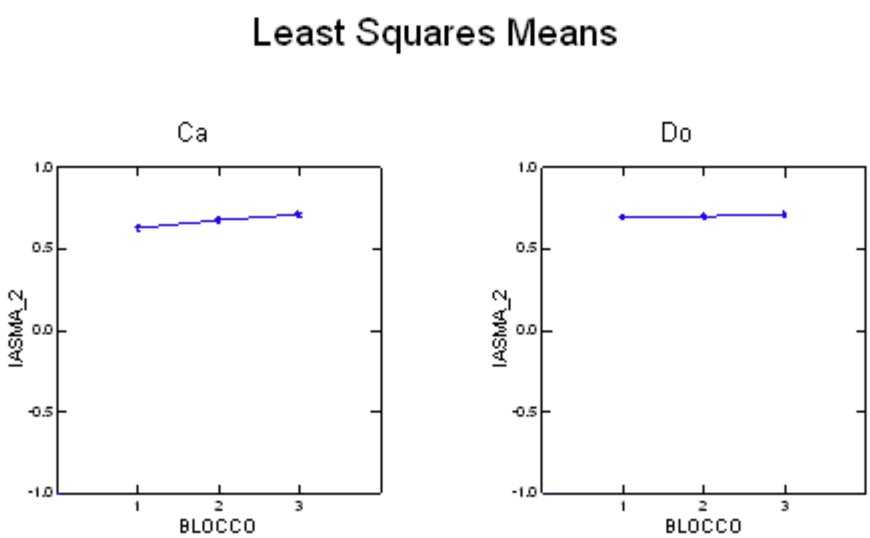



## Least Squares Means

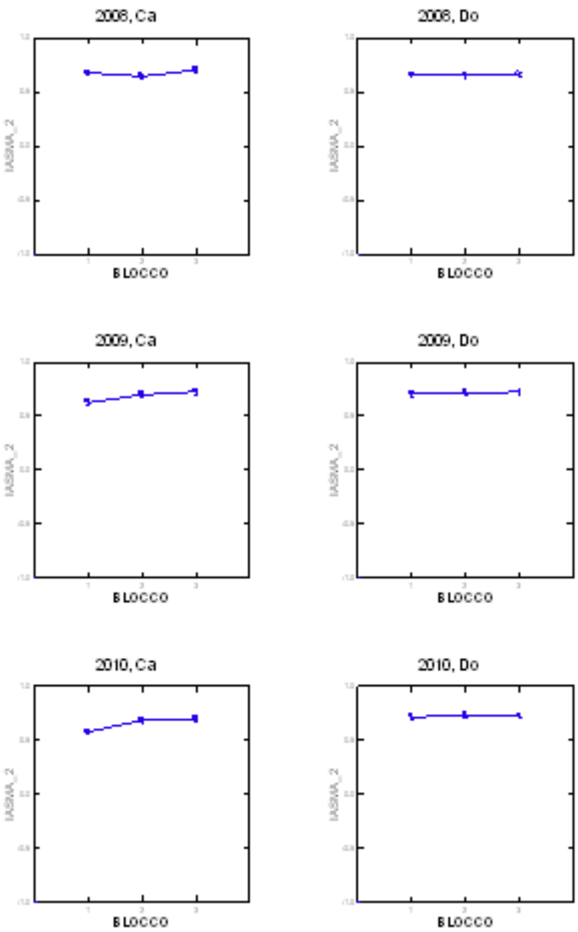



Least Squares Means
C0
C1
IASMA_2
DIRAD$
D0
D1
1.0
0.5
0.0
-0.5
-1.0


Least Squares Means
A0
A1
IASMA_2
DIRAD$
D0
D1
1.0
0.5
0.0
-0.5
-1.0


Least Squares Means
Ca
Do
IASMA_2
BLOCCO
1
2
3
1.0
0.5
0.0
-0.5
-1.0

## Least Squares Means




```
Durbin-Watson D Statistic     ¦  2.090
First Order Autocorrelation ¦ -0.049
```

**Information Criteria**

```
AIC              ¦ -567.198
AIC (Corrected) ¦ -545.364
Schwarz's BIC    ¦ -466.225
```

▼General Linear Model

**IASMA3 2008- 2009-2010**

```
Data for the following results were selected according to
      SELECT (VARIETA$ = 'Cabernet')

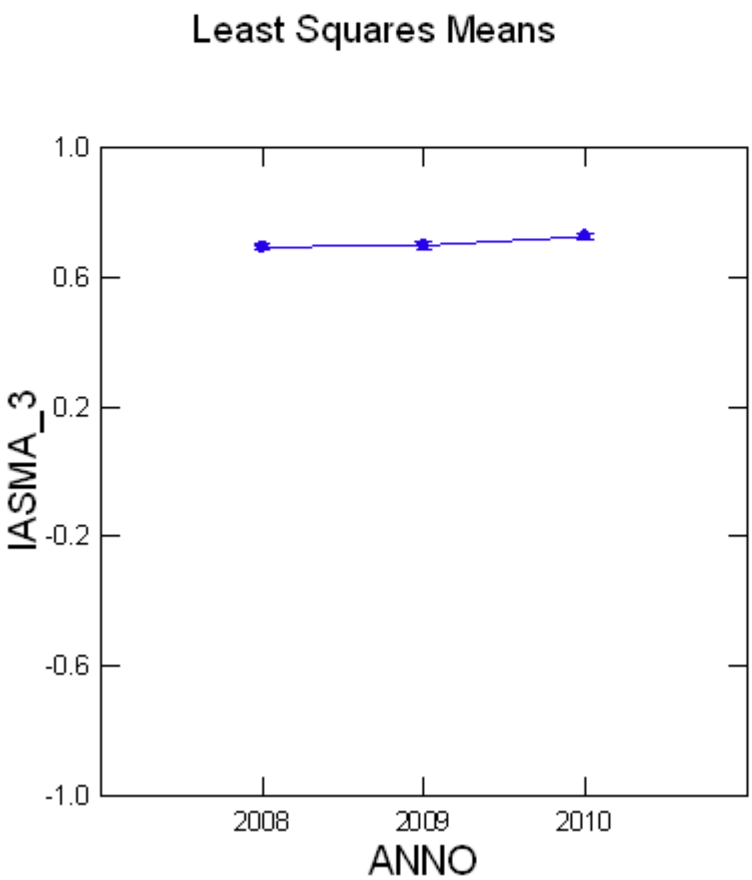
Effects coding used for categorical variables in model.
The categorical values encountered during processing are
```

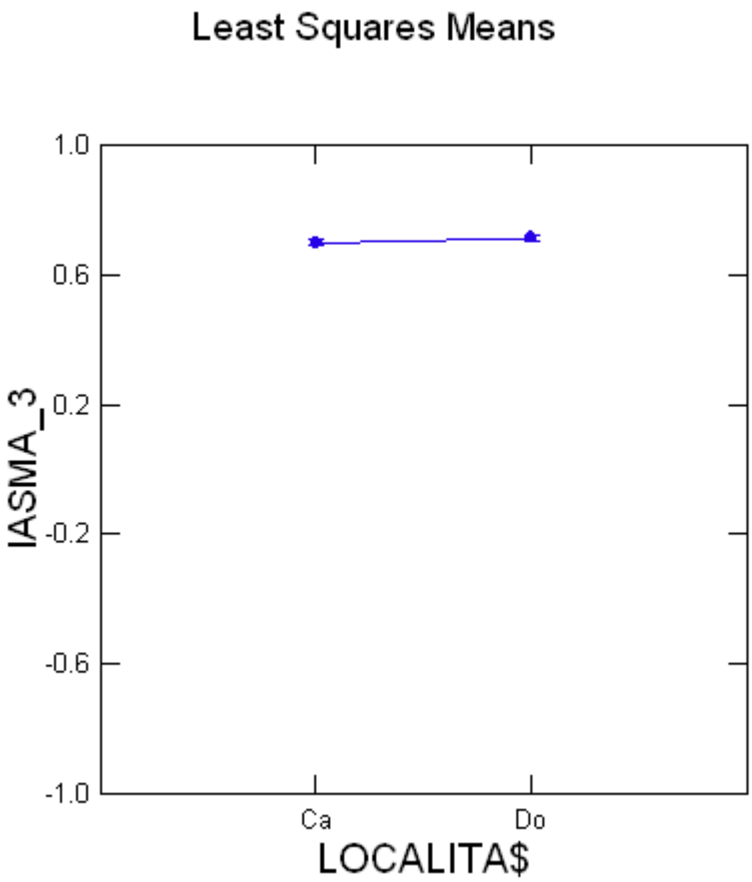
| Variables | Levels | | |
|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 |
| LOCALITA$ (2 levels) | Ca | Do | |
| N_GEMME$ (2 levels) | C0 | C1 | |
| DEFOGL$ (2 levels) | A0 | A1 | |
| DIRAD$ (2 levels) | D0 | D1 | |
| BLOCCO (3 levels) | 1.000 | 2.000 | 3.000 |

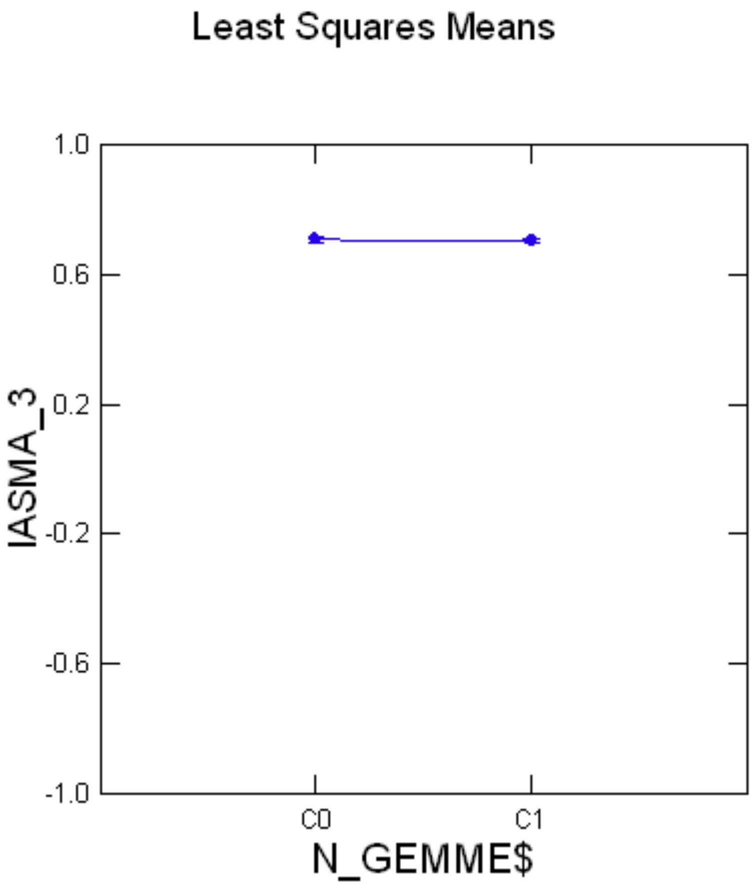
| | |
|---|---|
| Dependent Variable | IASMA_3 |
| N | 144 |
| Multiple R | 0.764 |
| Squared Multiple R | 0.583 |

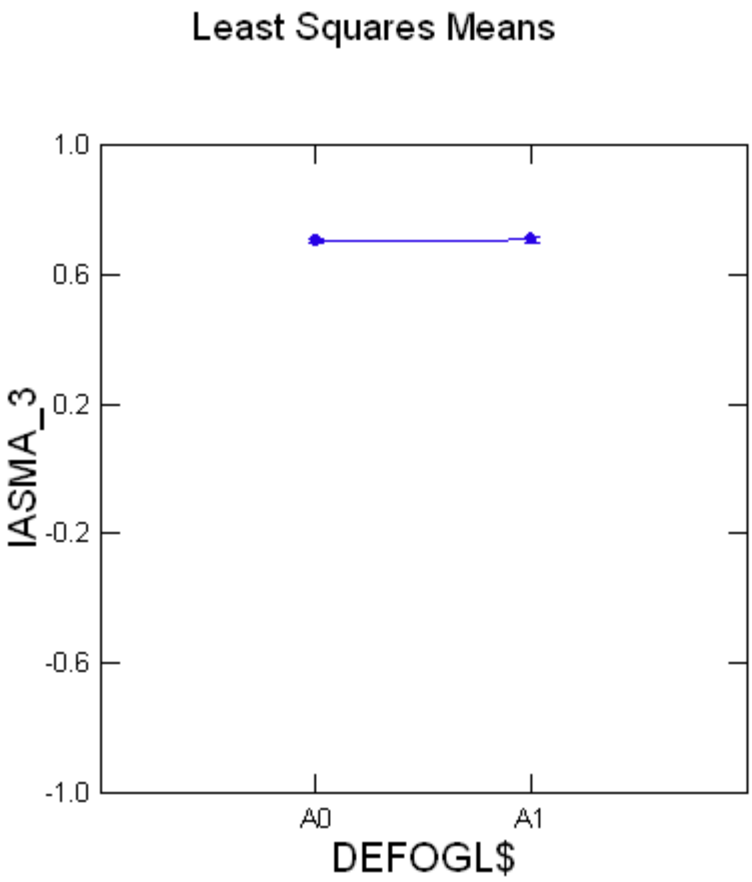
**Analysis of Variance**

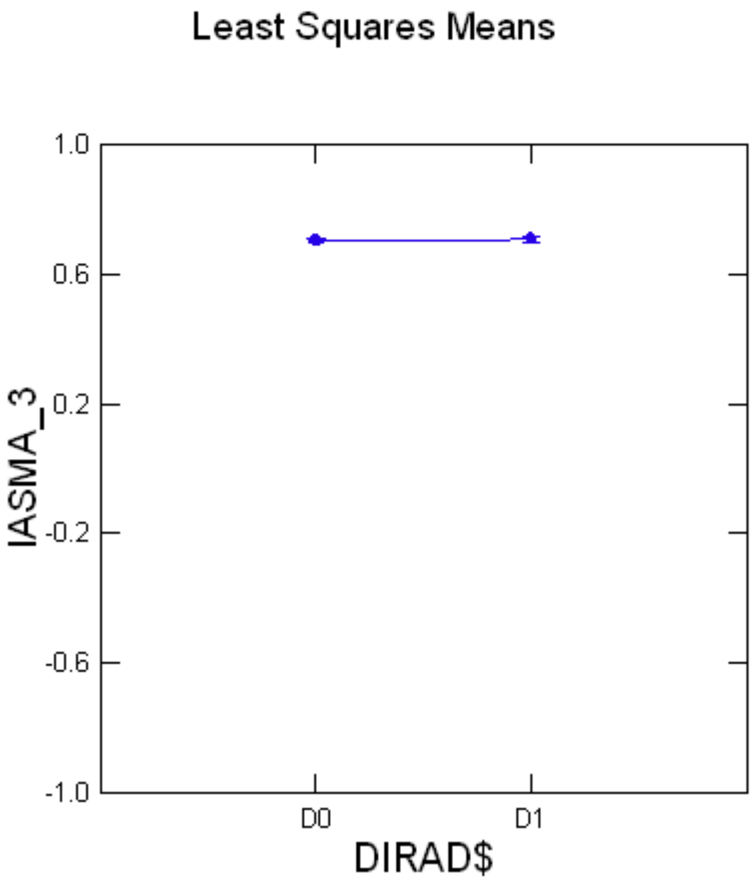
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.028 | 2 | 0.014 | 15.217 | 0.000 |
| LOCALITA$ | 0.006 | 1 | 0.006 | 6.909 | 0.010 |
| N_GEMME$ | 0.000 | 1 | 0.000 | 0.504 | 0.479 |
| DEFOGL$ | 0.000 | 1 | 0.000 | 0.455 | 0.501 |
| DIRAD$ | 0.000 | 1 | 0.000 | 0.470 | 0.495 |
| LOCALITA$*ANNO | 0.015 | 2 | 0.007 | 8.120 | 0.001 |
| N_GEMME$*ANNO | 0.001 | 2 | 0.001 | 0.699 | 0.499 |
| DEFOGL$*ANNO | 0.000 | 2 | 0.000 | 0.099 | 0.906 |
| DIRAD$*ANNO | 0.000 | 2 | 0.000 | 0.150 | 0.860 |
| N_GEMME$*LOCALITA$ | 0.001 | 1 | 0.001 | 1.455 | 0.230 |
| DEFOGL$*LOCALITA$ | 0.001 | 1 | 0.001 | 0.639 | 0.426 |
| DIRAD$*LOCALITA$ | 0.001 | 1 | 0.001 | 1.049 | 0.308 |
| DEFOGL$*N_GEMME$ | 0.001 | 1 | 0.001 | 0.921 | 0.339 |
| DIRAD$*N_GEMME$ | 0.001 | 1 | 0.001 | 1.511 | 0.222 |
| DIRAD$*DEFOGL$ | 0.003 | 1 | 0.003 | 3.335 | 0.071 |
| BLOCCO(LOCALITA$) | 0.051 | 4 | 0.013 | 13.938 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.022 | 8 | 0.003 | 3.026 | 0.004 |
| Error | 0.101 | 111 | 0.001 | | |



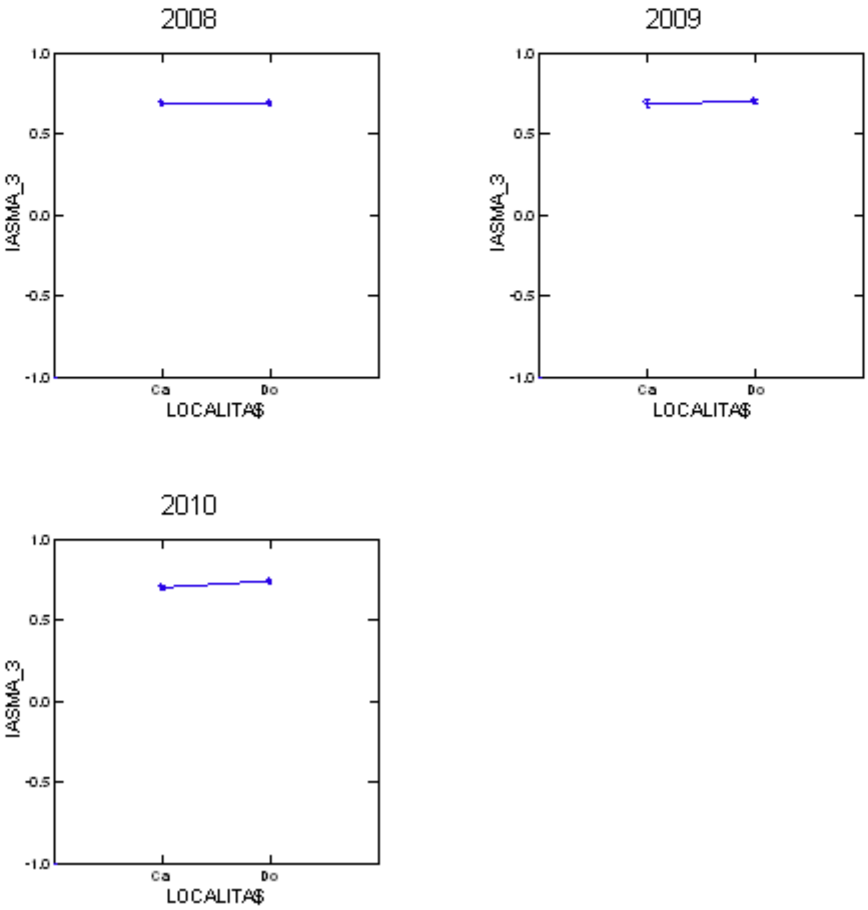

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_3
Ca
Do
LOCALITA$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_3
C0
C1
N_GEMME$

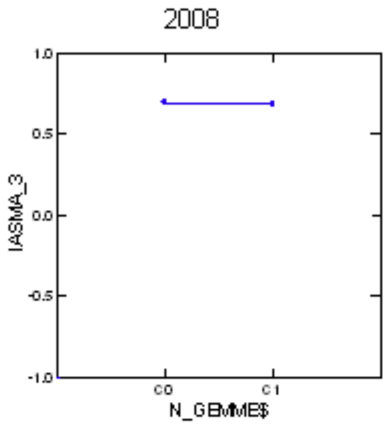

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_3
A0
A1
DEFOGL$

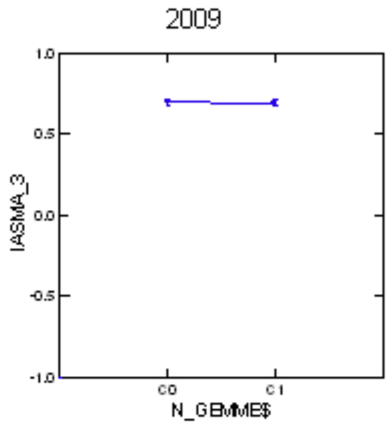

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
IASMA_3
D0
D1
DIRAD$

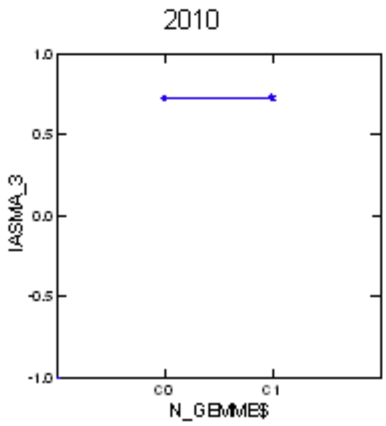
# Least Squares Means



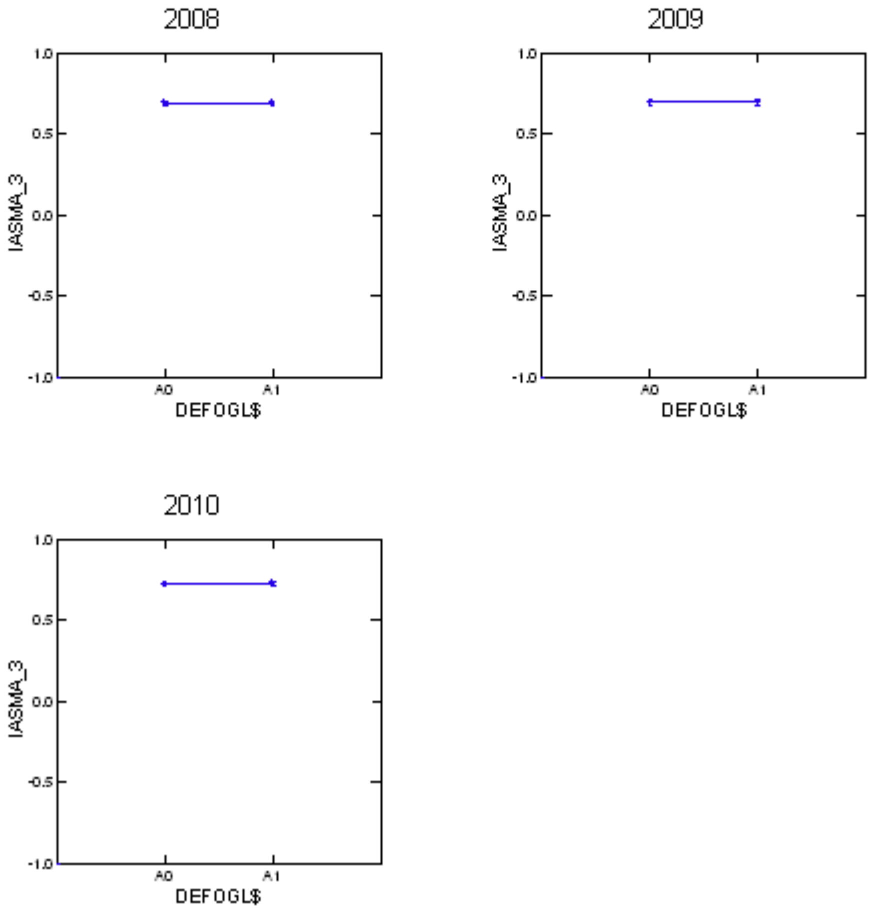
# Least Squares Means



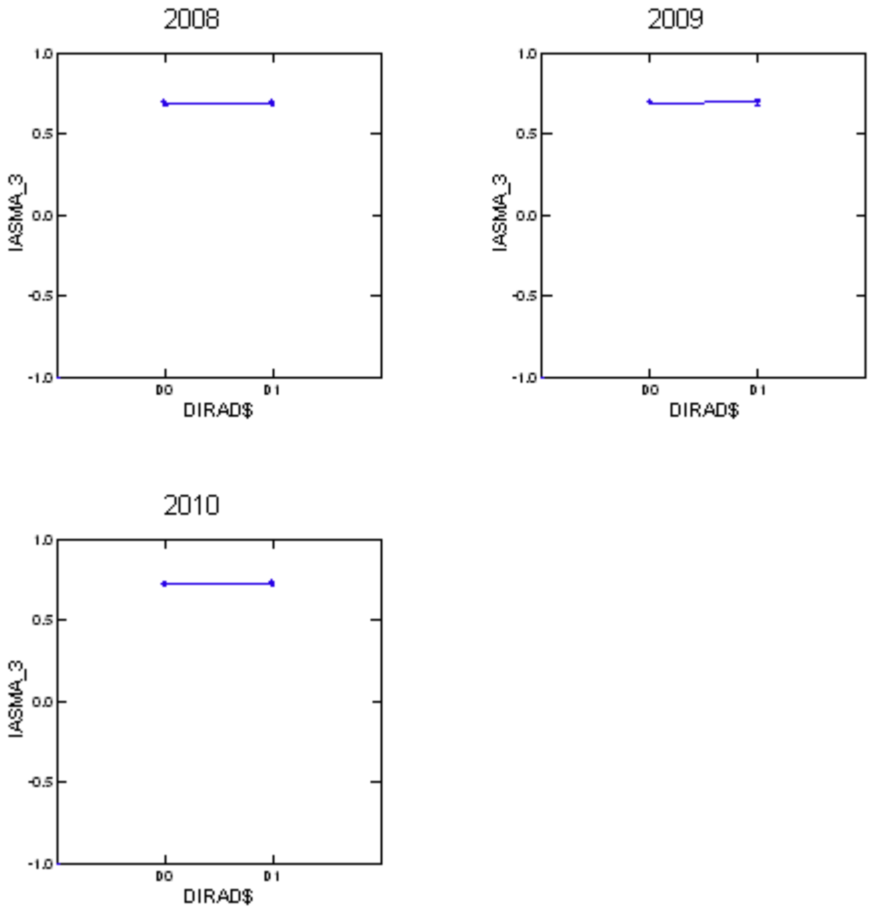



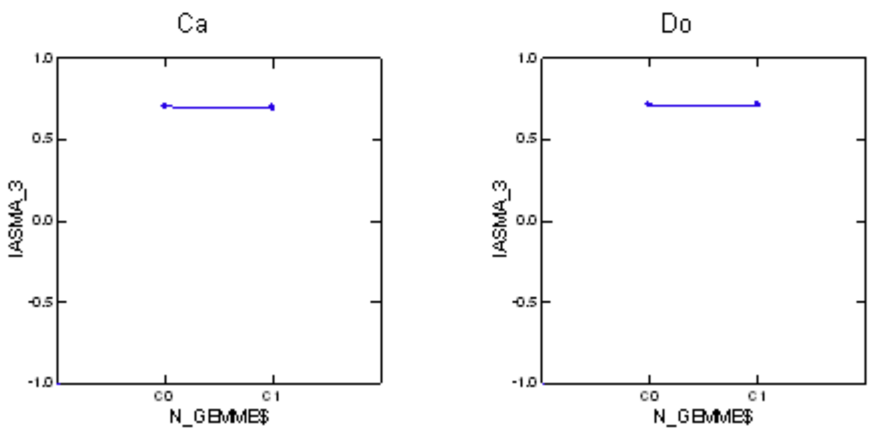
# Least Squares Means



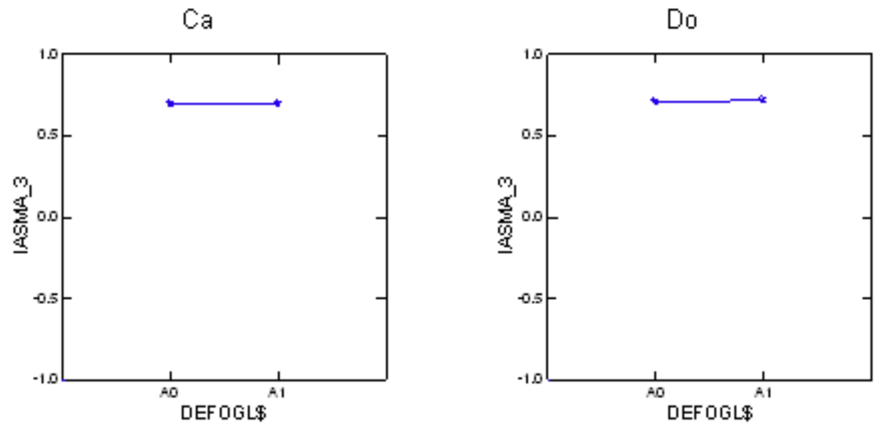
## Least Squares Means



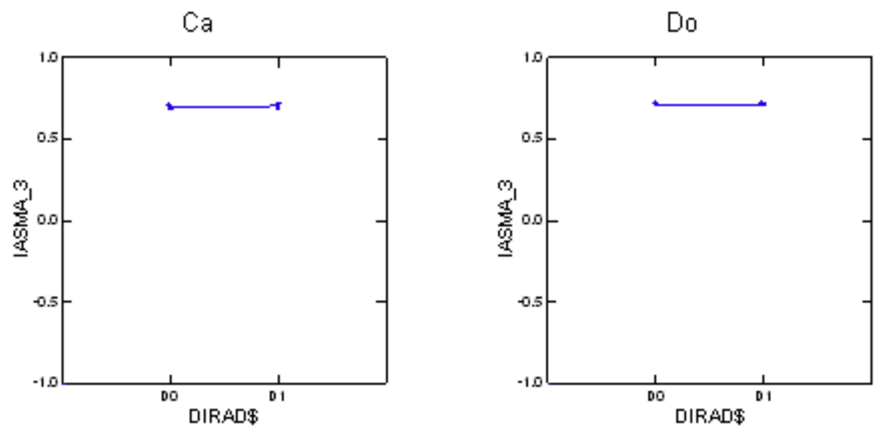

## Least Squares Means



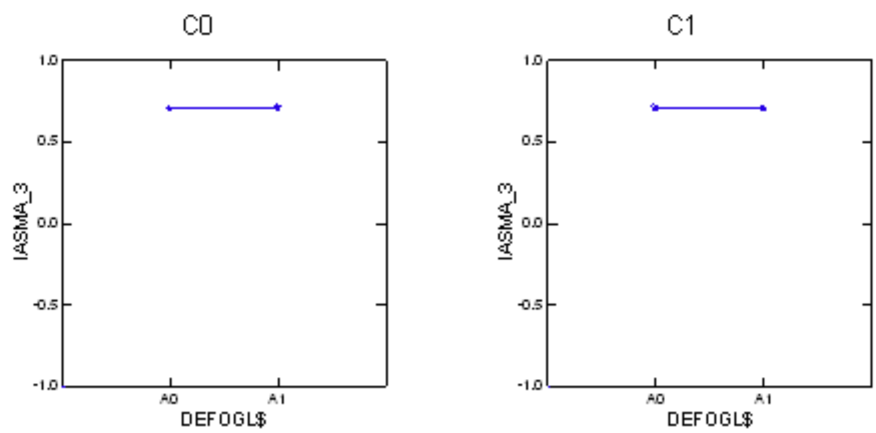
## Least Squares Means



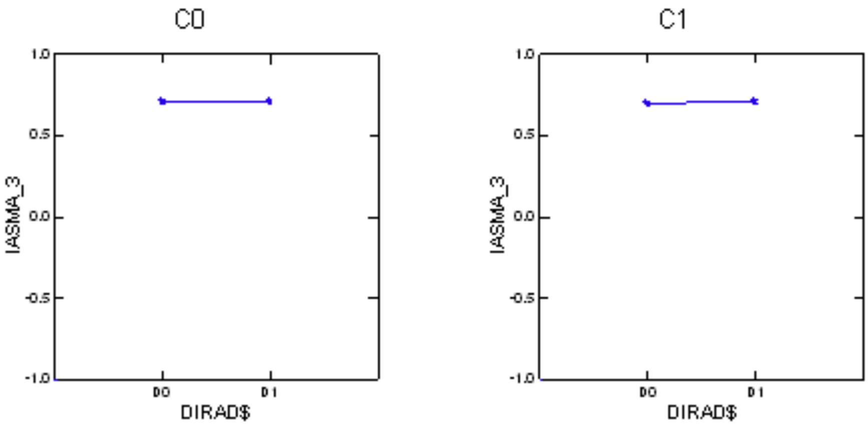

## Least Squares Means



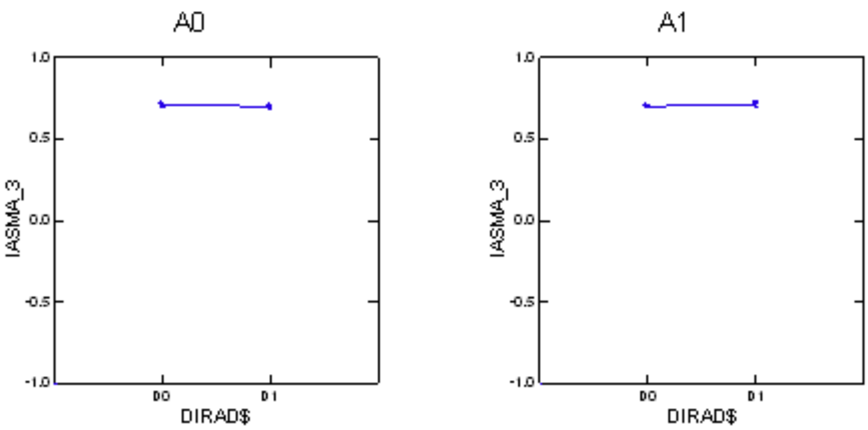

## Least Squares Means



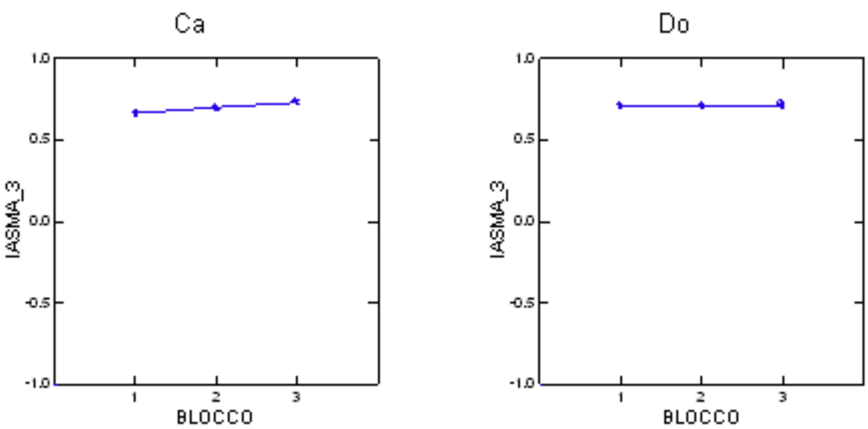
## Least Squares Means



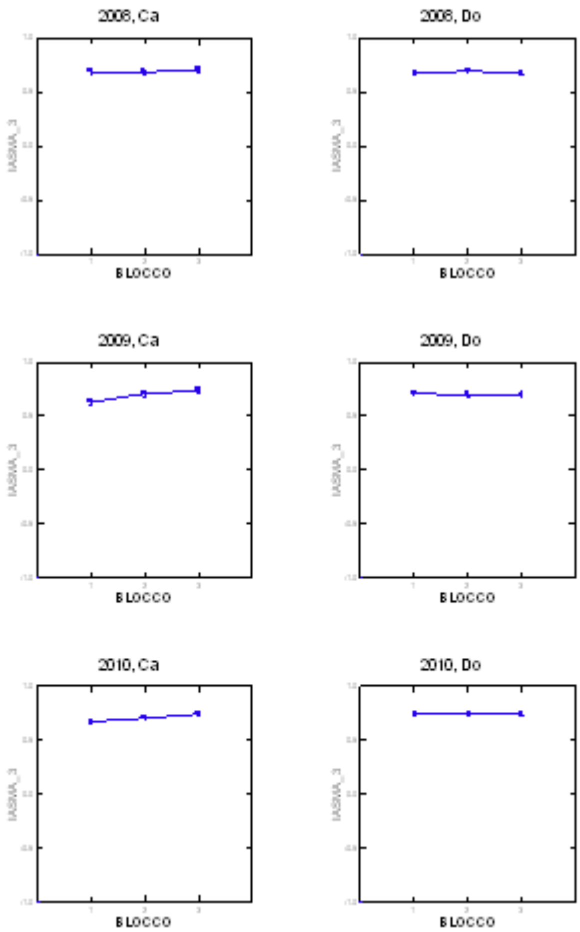

## Least Squares Means




## Least Squares Means



## Least Squares Means




| | |
|---|---|
| Durbin-Watson D Statistic | 1.788 |
| First Order Autocorrelation | 0.106 |

**Information Criteria**

| | |
|---|---|
| AIC | -569.259 |
| AIC (Corrected) | -547.424 |
| Schwarz's BIC | -468.285 |

### ▼General Linear Model

## DIPROVE1 2008- 2009-2010

Data for the following results were selected according to
SELECT (VARIETA$ = 'Cabernet')

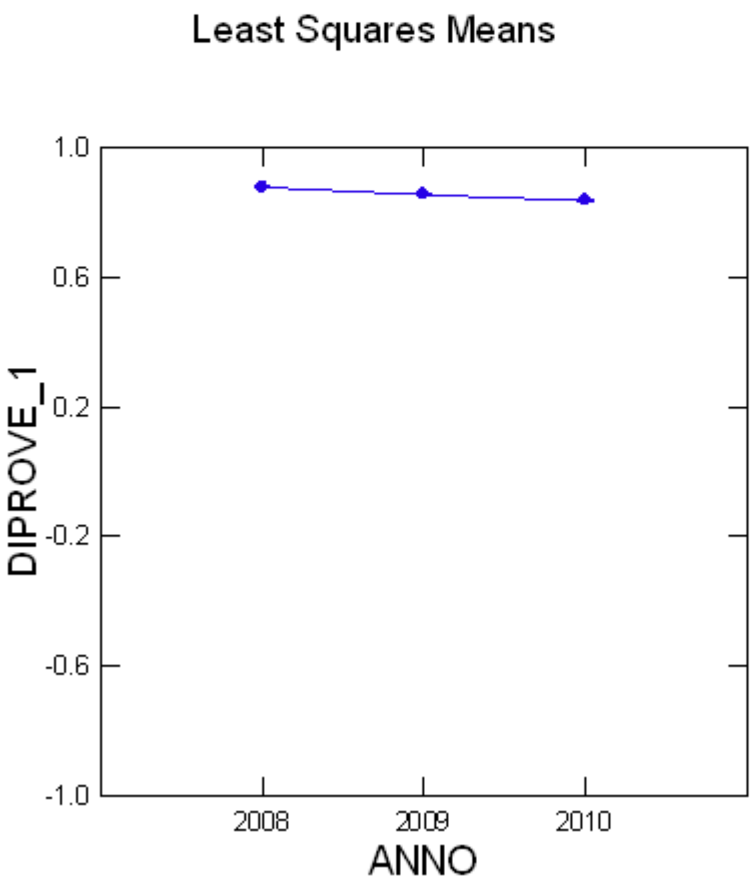
Effects coding used for categorical variables in model.
The categorical values encountered during processing are

| Variables | Levels | | |
|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 |
| LOCALITA$ (2 levels) | Ca | Do | |
| N_GEMME$ (2 levels) | C0 | C1 | |
| DEFOGL$ (2 levels) | A0 | A1 | |
| DIRAD$ (2 levels) | D0 | D1 | |
| BLOCCO (3 levels) | 1.000 | 2.000 | 3.000 |

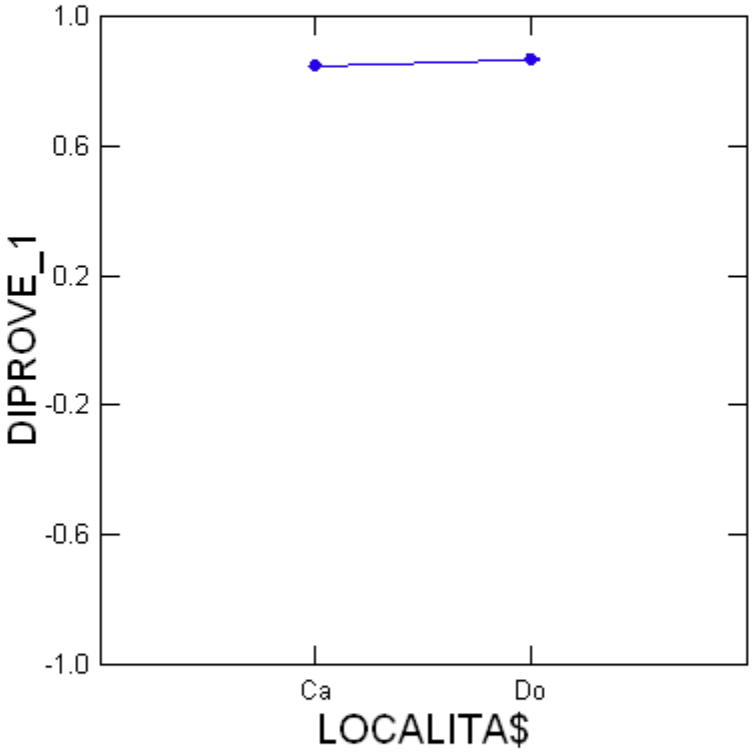
| | |
|---|---|
| Dependent Variable | DIPROVE_1 |
| N | 144 |
| Multiple R | 0.972 |
| Squared Multiple R | 0.945 |

**Analysis of Variance**

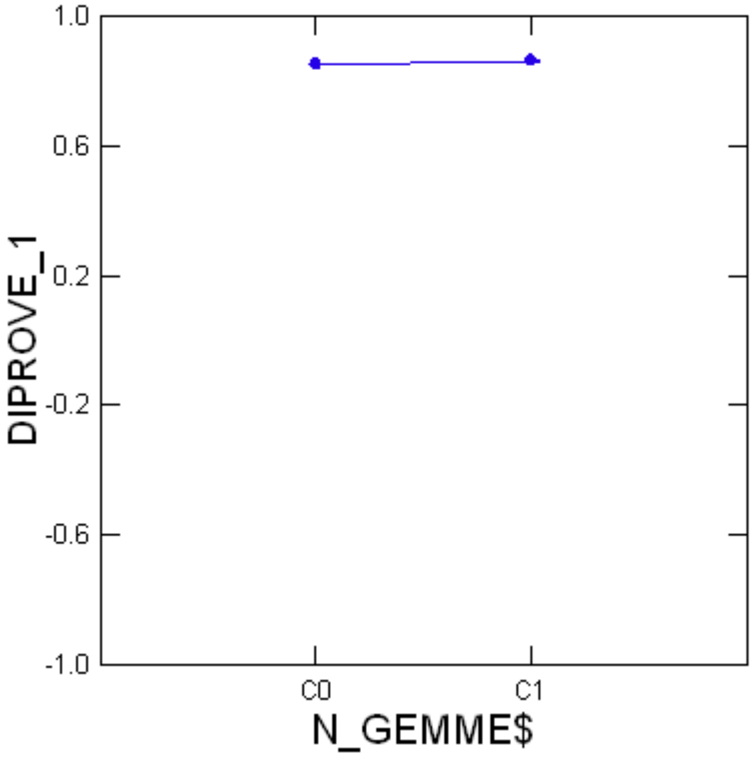
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.042 | 2 | 0.021 | 330.491 | 0.000 |
| LOCALITA$ | 0.011 | 1 | 0.011 | 178.366 | 0.000 |
| N_GEMME$ | 0.003 | 1 | 0.003 | 46.304 | 0.000 |
| DEFOGL$ | 0.012 | 1 | 0.012 | 190.957 | 0.000 |
| DIRAD$ | 0.000 | 1 | 0.000 | 3.127 | 0.080 |
| LOCALITA$*ANNO | 0.019 | 2 | 0.009 | 144.728 | 0.000 |
| N_GEMME$*ANNO | 0.000 | 2 | 0.000 | 0.740 | 0.479 |
| DEFOGL$*ANNO | 0.005 | 2 | 0.003 | 41.187 | 0.000 |
| DIRAD$*ANNO | 0.000 | 2 | 0.000 | 1.048 | 0.354 |
| N_GEMME$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.766 | 0.383 |
| DEFOGL$*LOCALITA$ | 0.001 | 1 | 0.001 | 14.093 | 0.000 |
| DIRAD$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.502 | 0.480 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 4.866 | 0.029 |
| DIRAD$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.581 | 0.448 |
| DIRAD$*DEFOGL$ | 0.000 | 1 | 0.000 | 2.868 | 0.093 |
| BLOCCO(LOCALITA$) | 0.002 | 4 | 0.001 | 8.370 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.003 | 8 | 0.000 | 6.688 | 0.000 |
| Error | 0.007 | 111 | 0.000 | | |



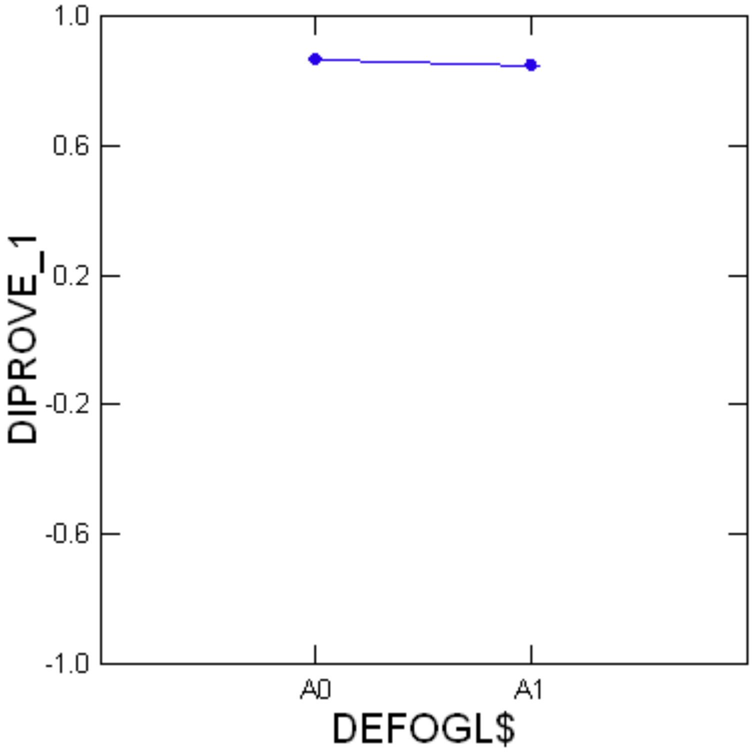
Least Squares Means



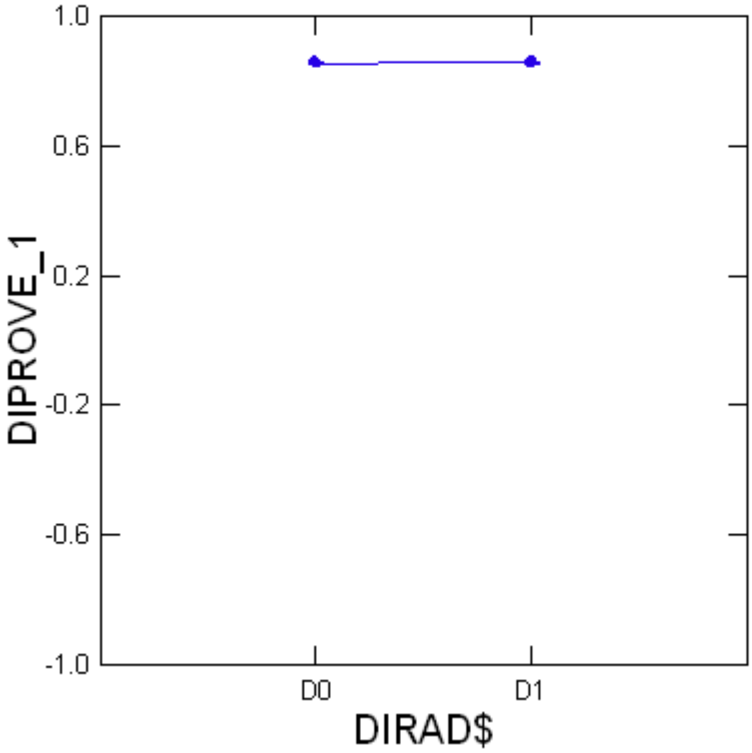

Least Squares Means



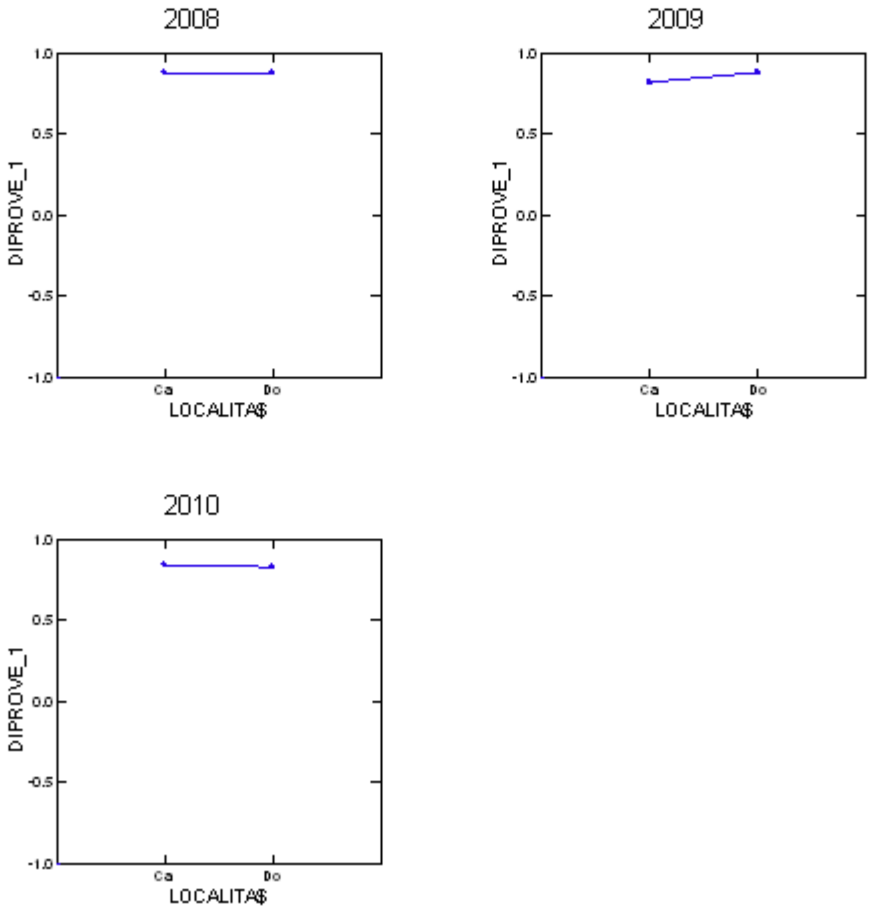
Least Squares Means



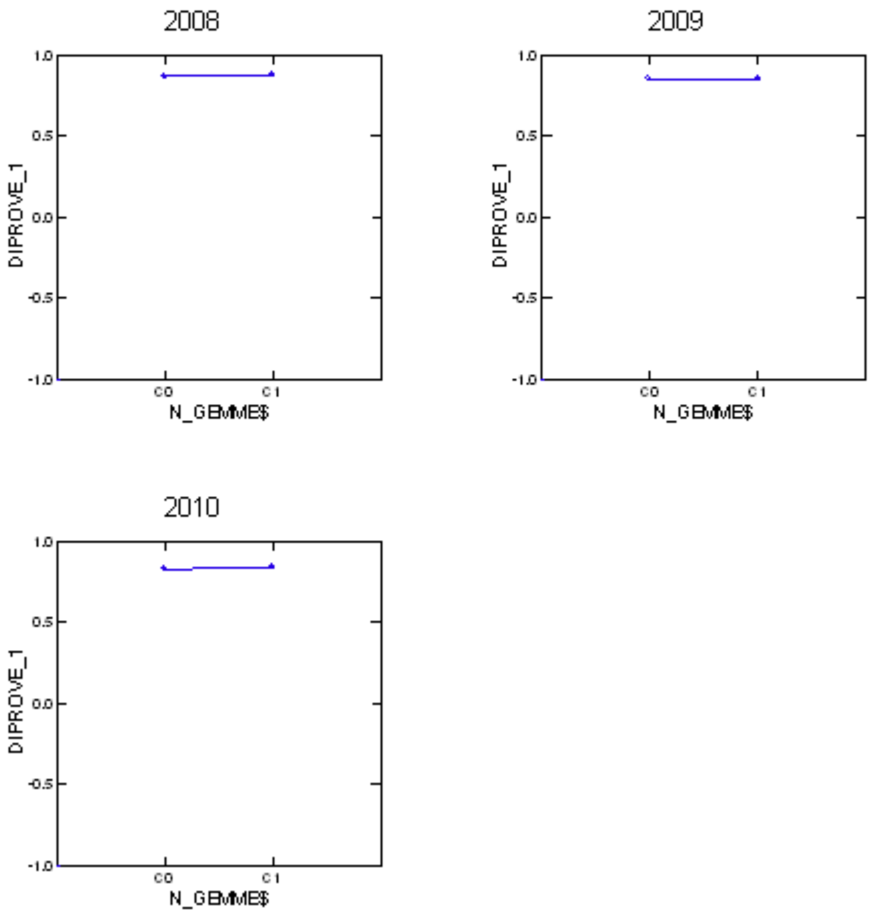

Least Squares Means



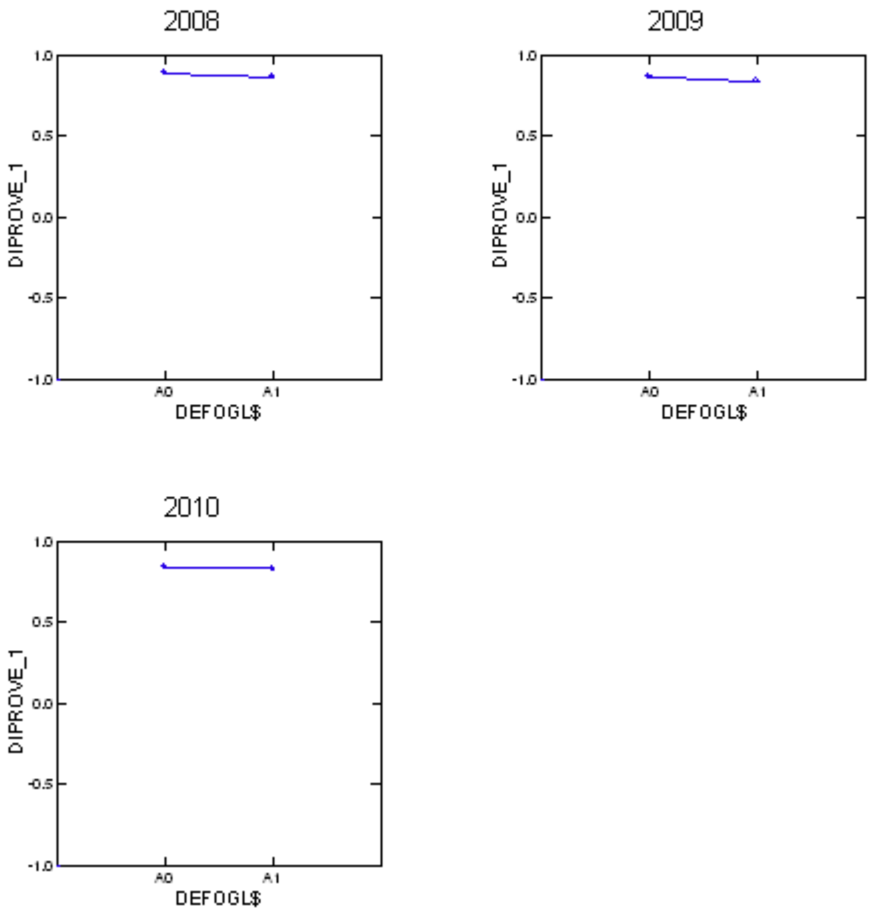
# Least Squares Means



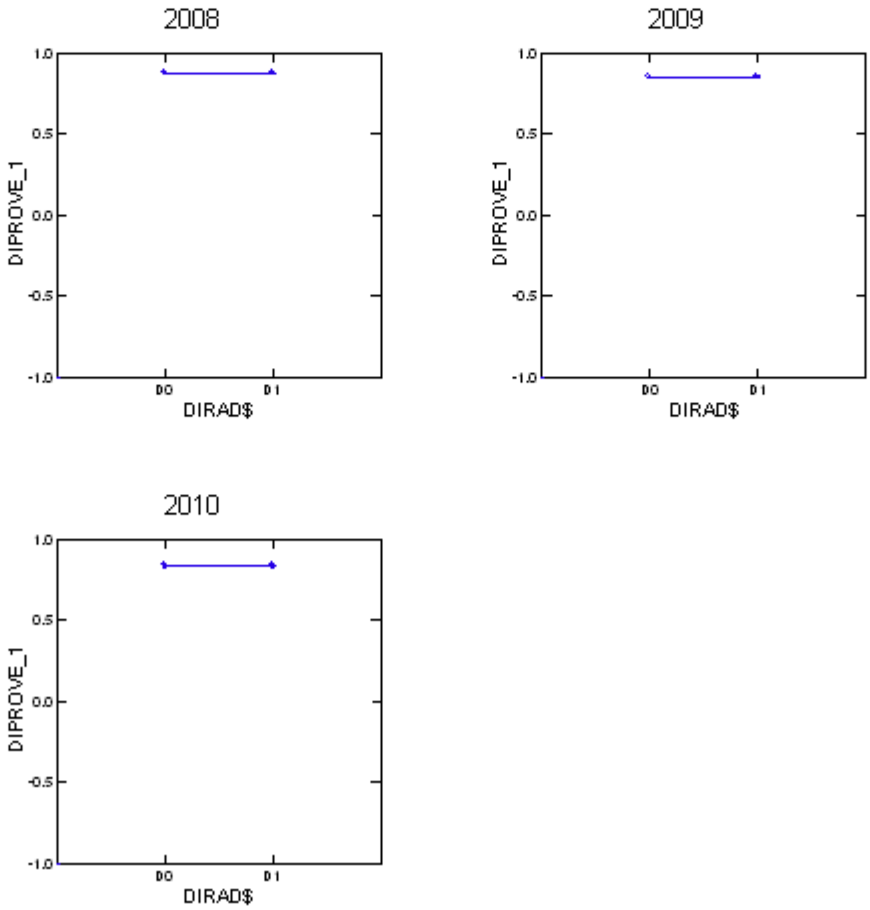
## Least Squares Means



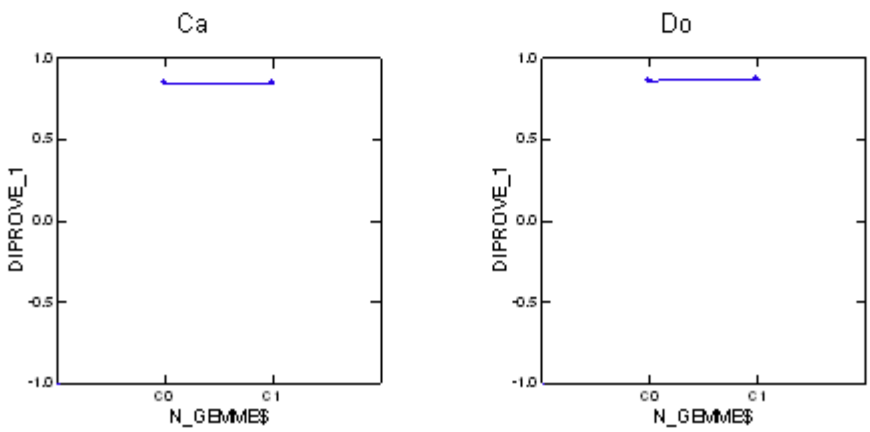
# Least Squares Means



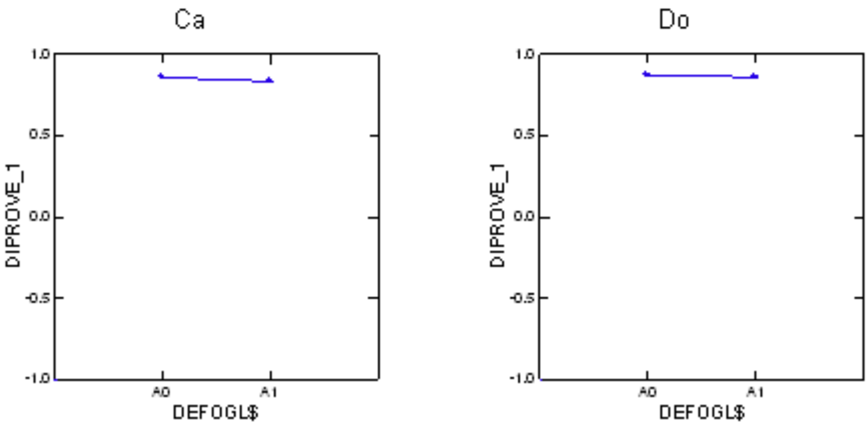
## Least Squares Means



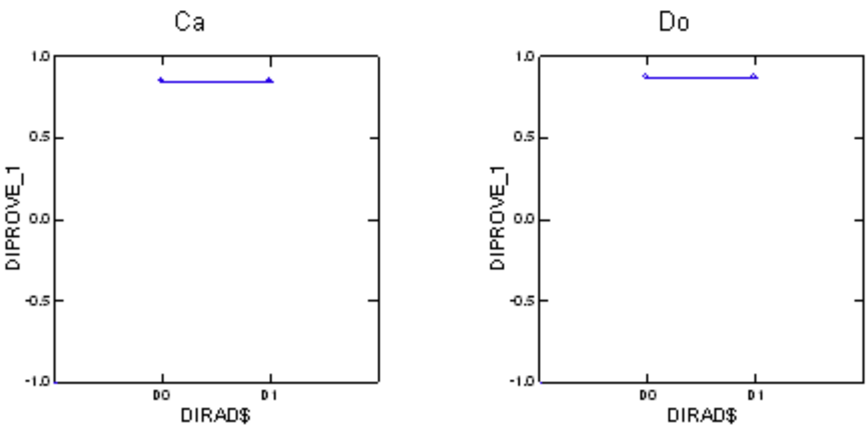

## Least Squares Means



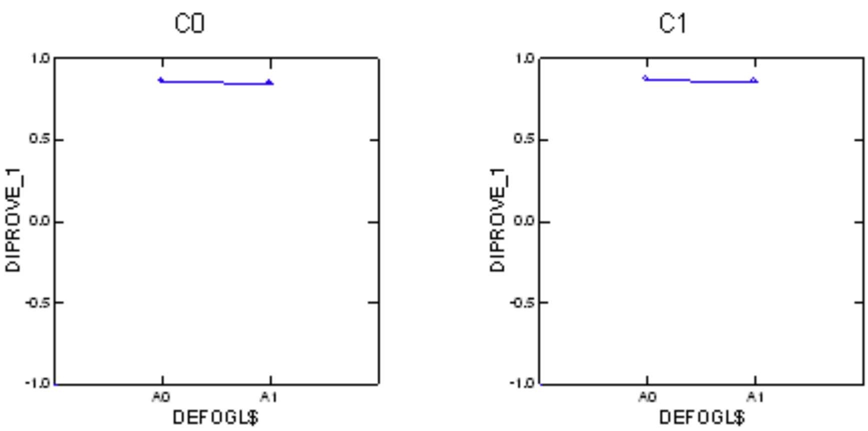
## Least Squares Means



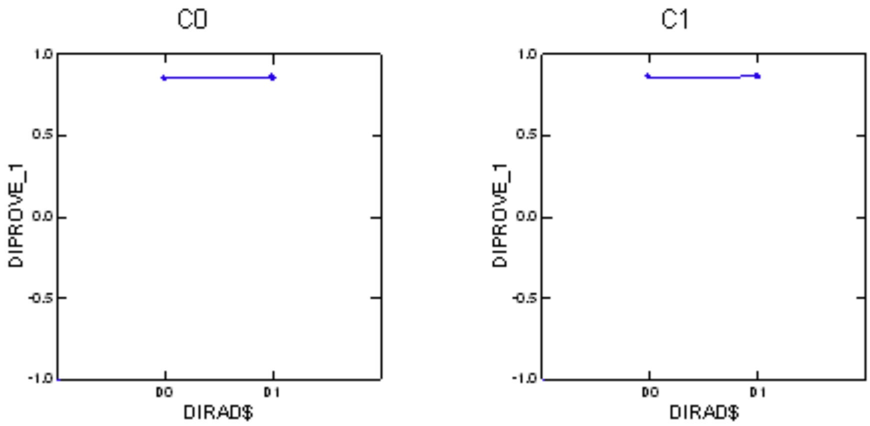

## Least Squares Means



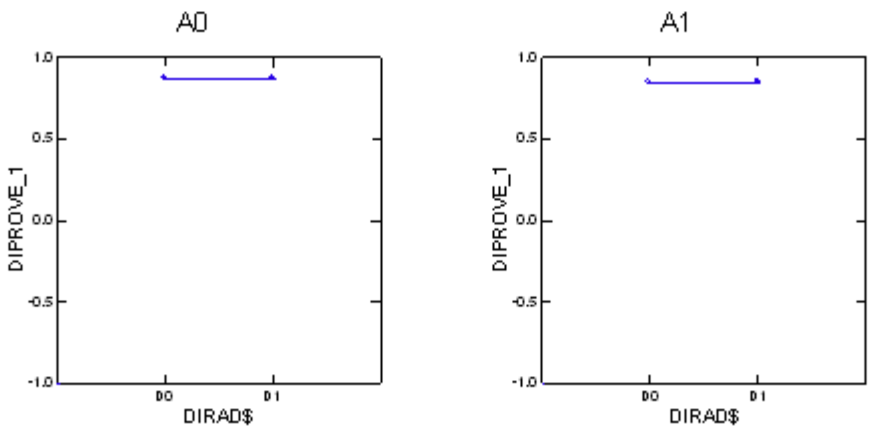

## Least Squares Means



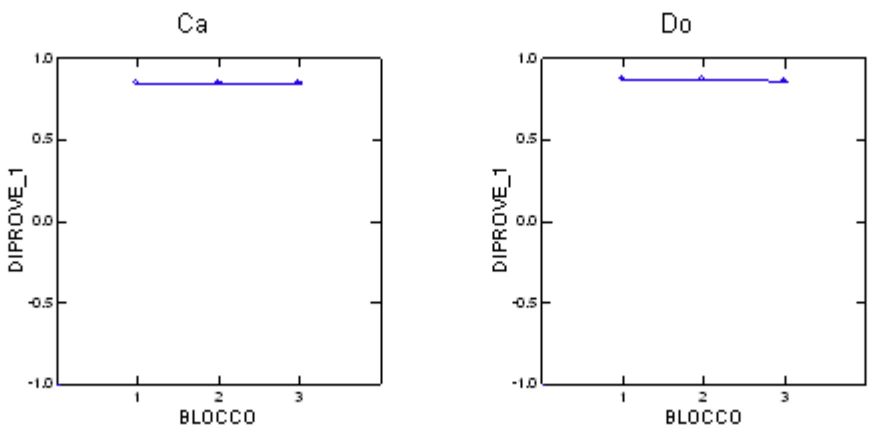
## Least Squares Means



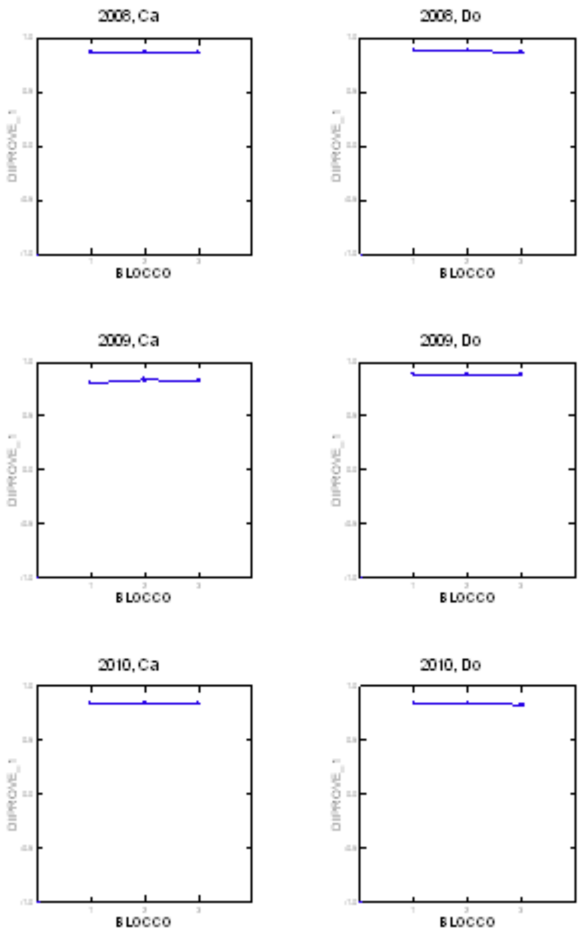

## Least Squares Means




## Least Squares Means



## Least Squares Means




*** WARNING *** :

Case 274 is an Outlier (Studentized Residual : -3.625)

| | |
|---|---|
| Durbin-Watson D Statistic | 1.573 |
| First Order Autocorrelation | 0.213 |

**Information Criteria**

| | |
|---|---|
| AIC | -951.078 |
| AIC (Corrected) | -929.243 |
| Schwarz's BIC | -850.105 |

### ▼General Linear Model
## DIPROVE2 2008- 2009-2010

Data for the following results were selected according to
SELECT (VARIETA$ = 'Cabernet')

Effects coding used for categorical variables in model.
The categorical values encountered during processing are

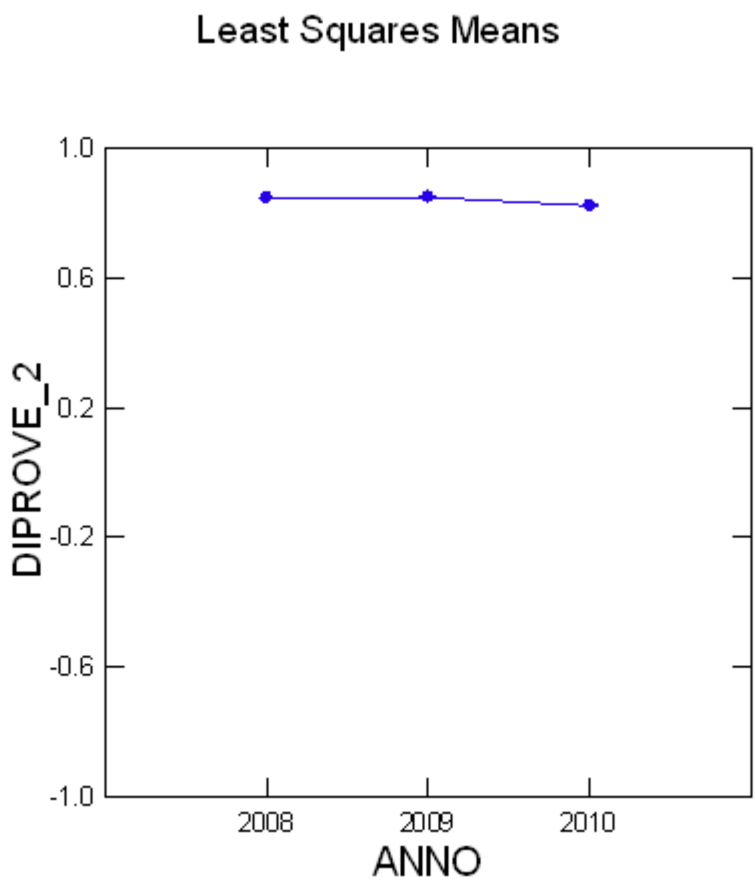
| Variables | Levels | | |
|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 |
| LOCALITA$ (2 levels) | Ca | Do | |

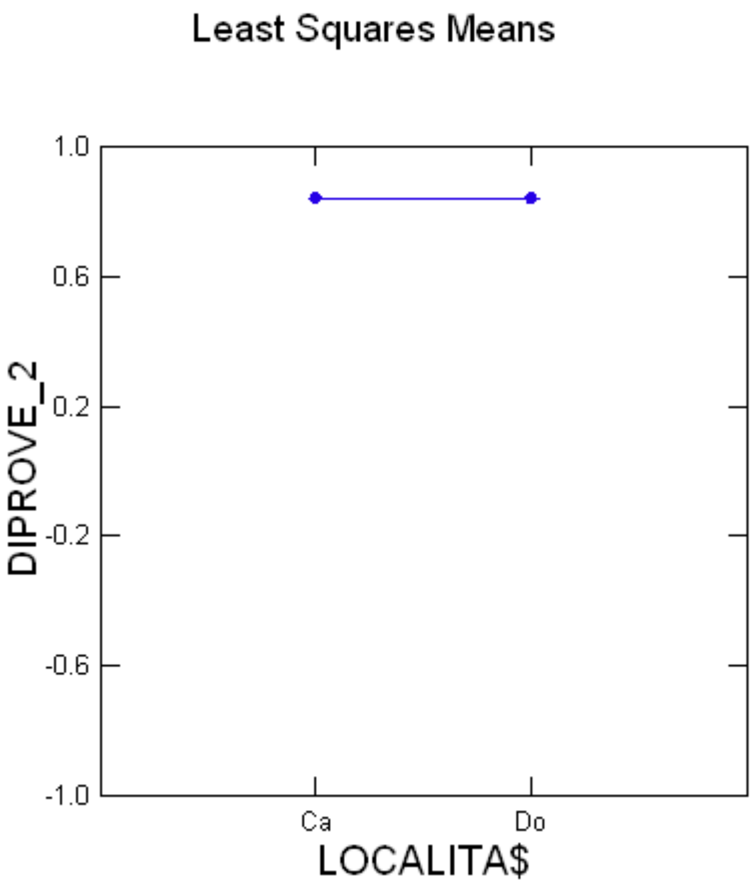
| | | | |
|---|---|---|---|
| N_GEMME$ (2 levels) | C0 | C1 | |
| DEFOGL$ (2 levels) | A0 | A1 | |
| DIRAD$ (2 levels) | D0 | D1 | |
| BLOCCO (3 levels) | 1.000 | 2.000 | 3.000 |

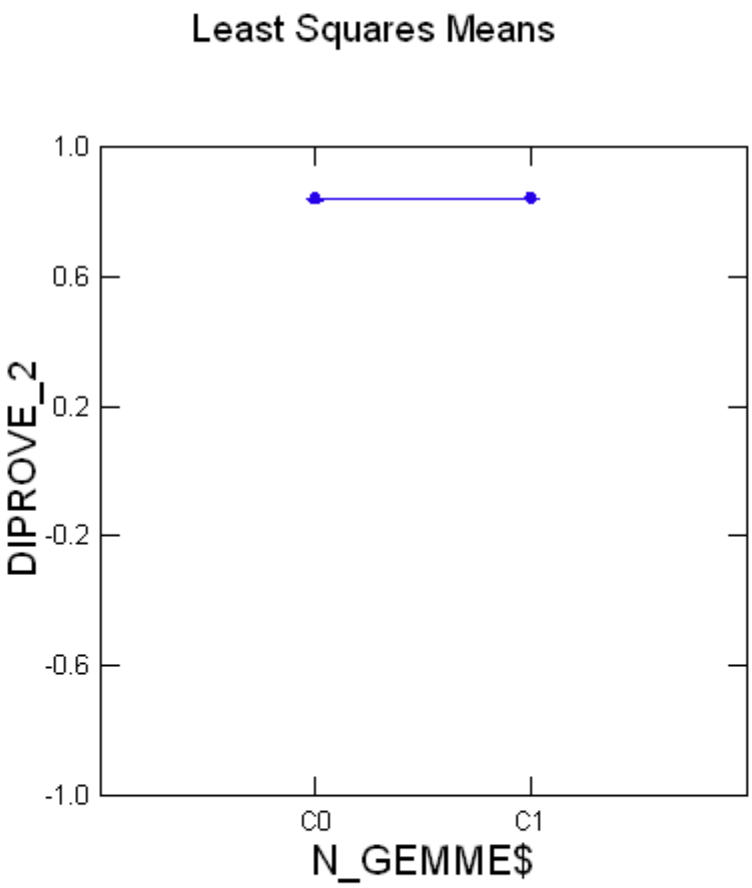
| | |
|---|---|
| Dependent Variable | DIPROVE_2 |
| N | 144 |
| Multiple R | 0.945 |
| Squared Multiple R | 0.894 |

**Analysis of Variance**

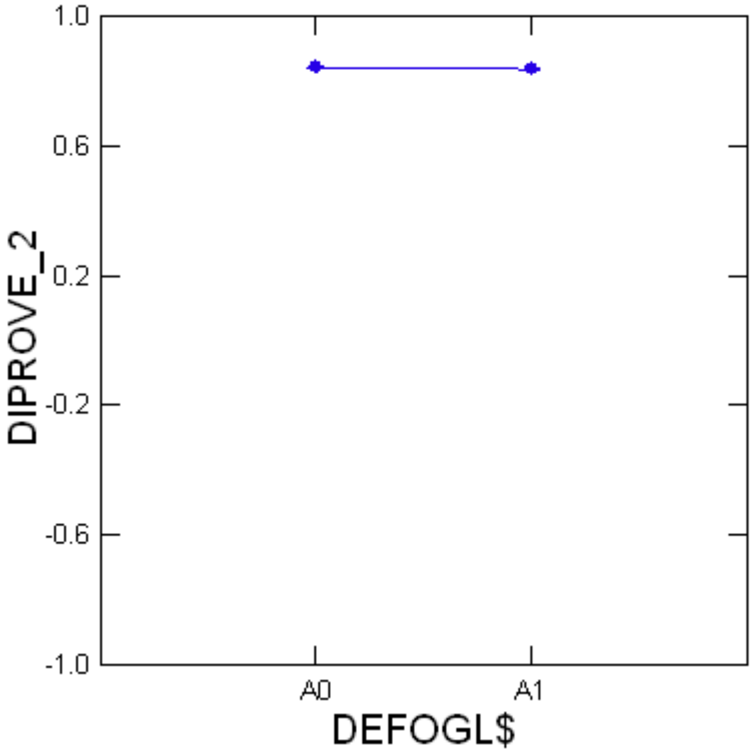
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.017 | 2 | 0.009 | 162.559 | 0.000 |
| LOCALITA$ | 0.000 | 1 | 0.000 | 0.280 | 0.598 |
| N_GEMME$ | 0.000 | 1 | 0.000 | 3.828 | 0.053 |
| DEFOGL$ | 0.001 | 1 | 0.001 | 19.444 | 0.000 |
| DIRAD$ | 0.000 | 1 | 0.000 | 0.105 | 0.747 |
| LOCALITA$*ANNO | 0.022 | 2 | 0.011 | 205.048 | 0.000 |
| N_GEMME$*ANNO | 0.000 | 2 | 0.000 | 0.767 | 0.467 |
| DEFOGL$*ANNO | 0.000 | 2 | 0.000 | 1.142 | 0.323 |
| DIRAD$*ANNO | 0.000 | 2 | 0.000 | 0.492 | 0.613 |
| N_GEMME$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.531 | 0.468 |
| DEFOGL$*LOCALITA$ | 0.000 | 1 | 0.000 | 1.566 | 0.213 |
| DIRAD$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.579 | 0.448 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 1.919 | 0.169 |
| DIRAD$*N_GEMME$ | 0.000 | 1 | 0.000 | 0.511 | 0.476 |
| DIRAD$*DEFOGL$ | 0.000 | 1 | 0.000 | 0.212 | 0.646 |
| BLOCCO(LOCALITA$) | 0.001 | 4 | 0.000 | 6.638 | 0.000 |
| BLOCCO*ANNO(LOCALITA$) | 0.002 | 8 | 0.000 | 4.258 | 0.000 |
| Error | 0.006 | 111 | 0.000 | | |



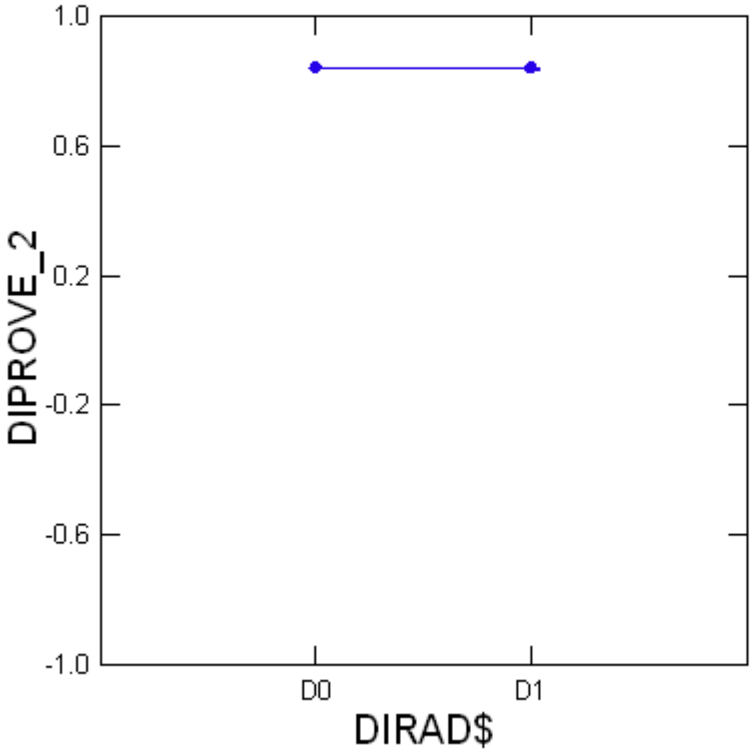

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_2
Ca
Do
LOCALITA$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_2
C0
C1
N_GEMME$

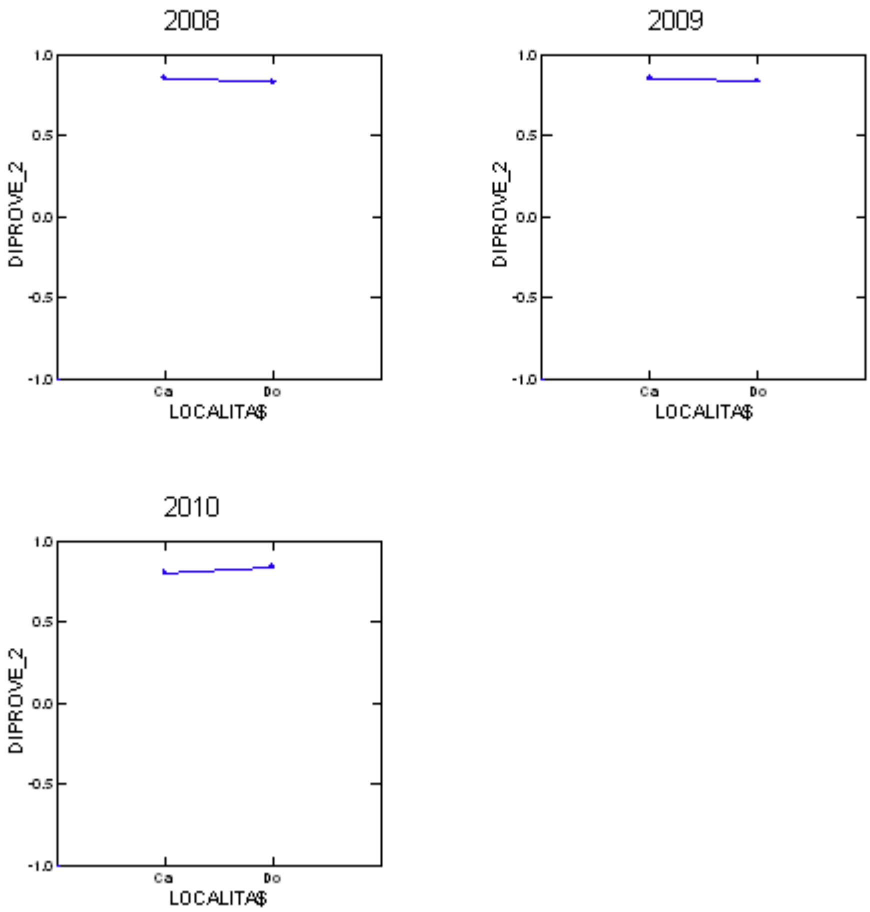
Least Squares Means



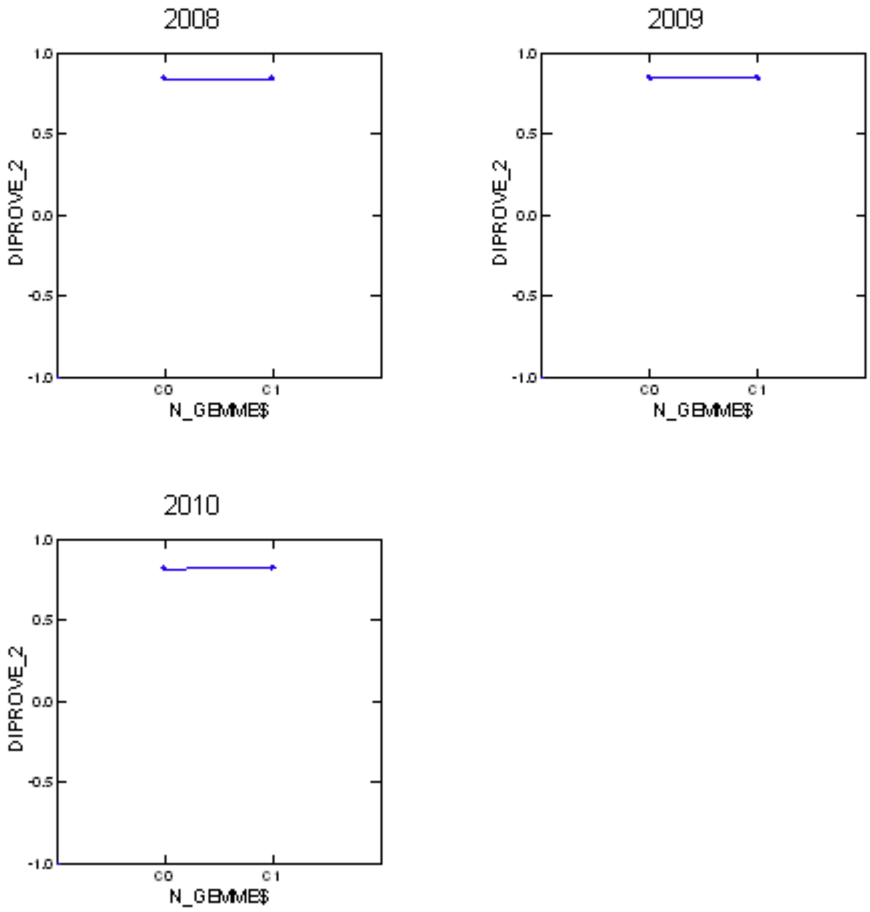

Least Squares Means



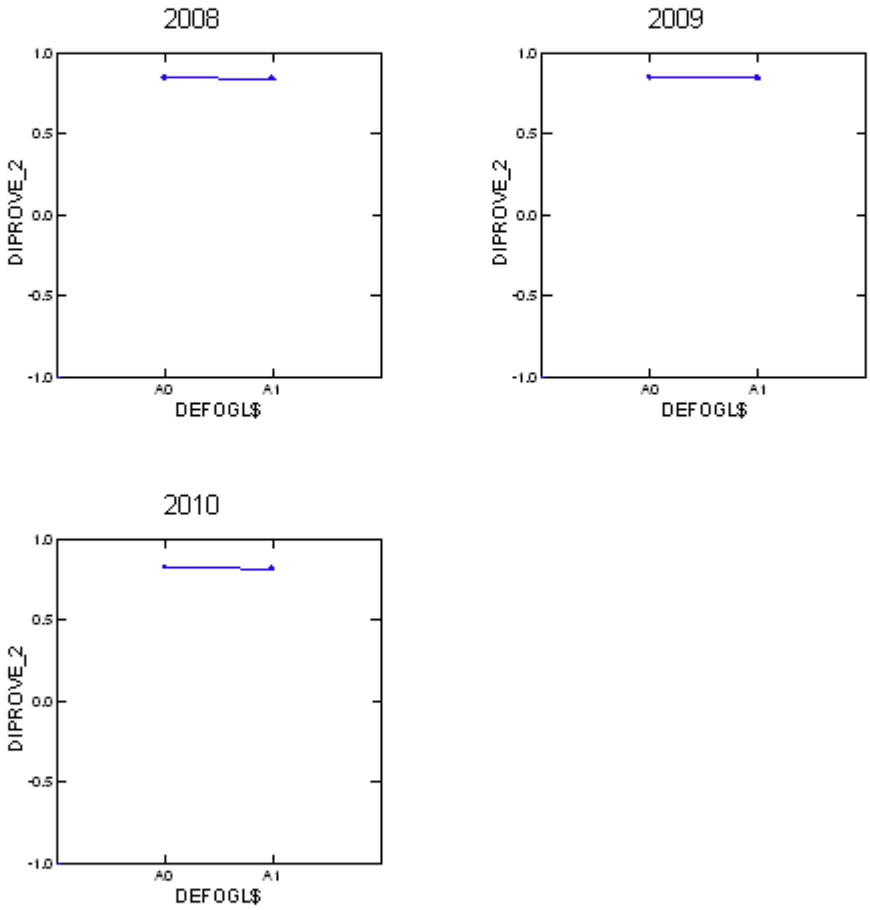
## Least Squares Means



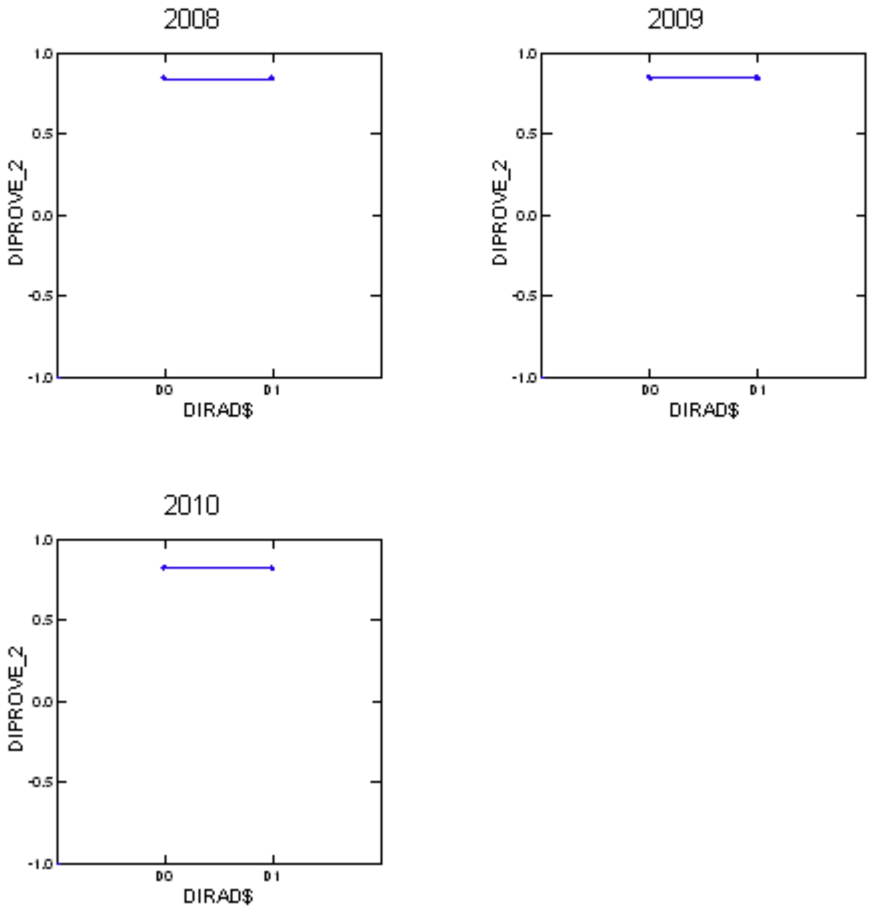
## Least Squares Means



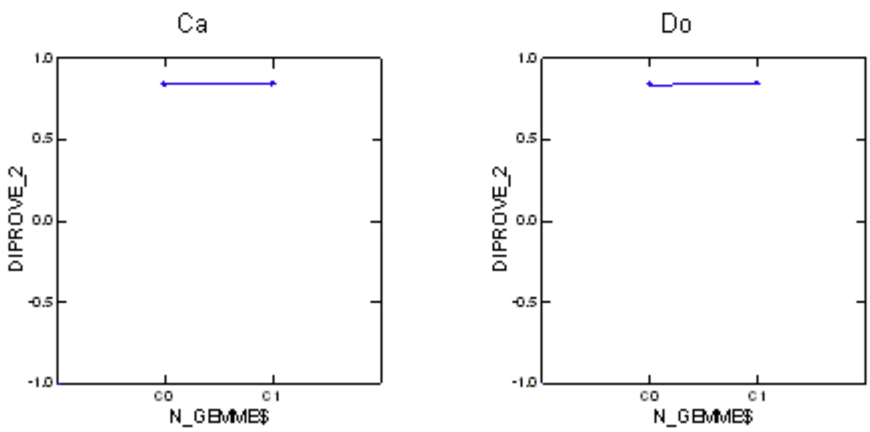
# Least Squares Means

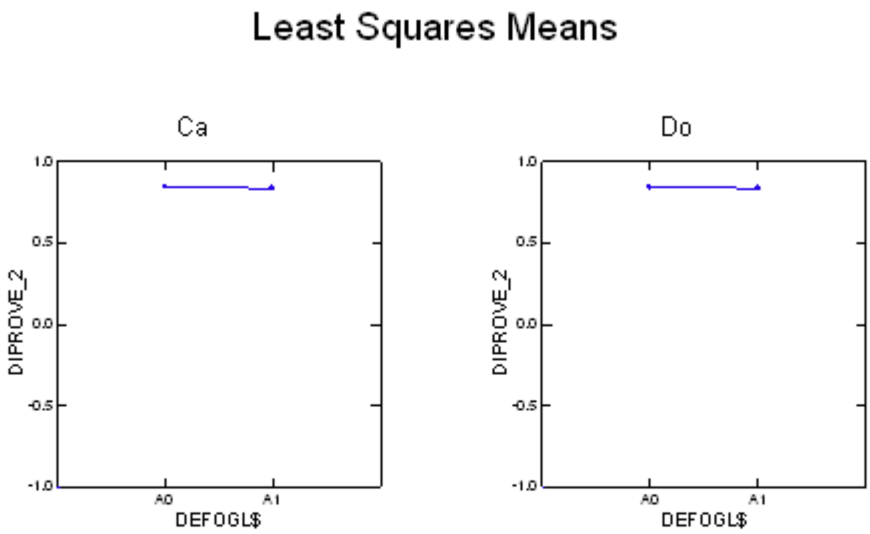


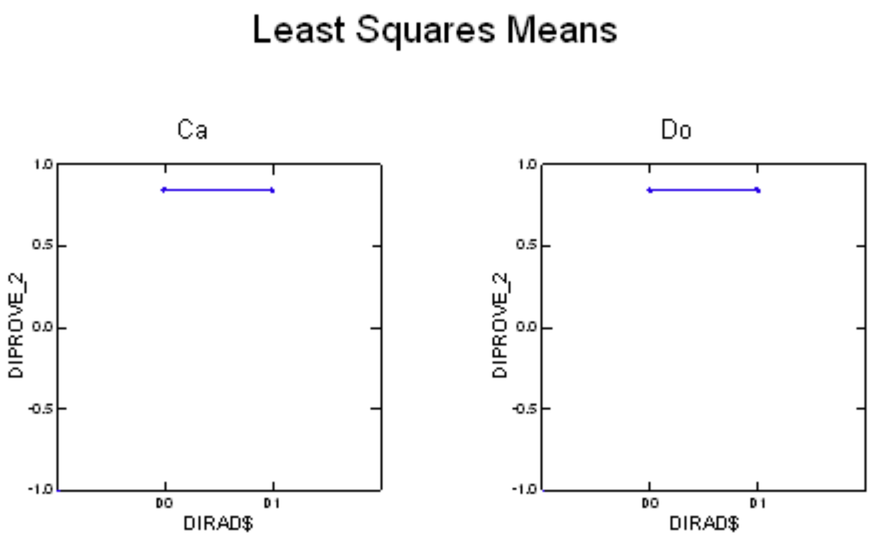
# Least Squares Means

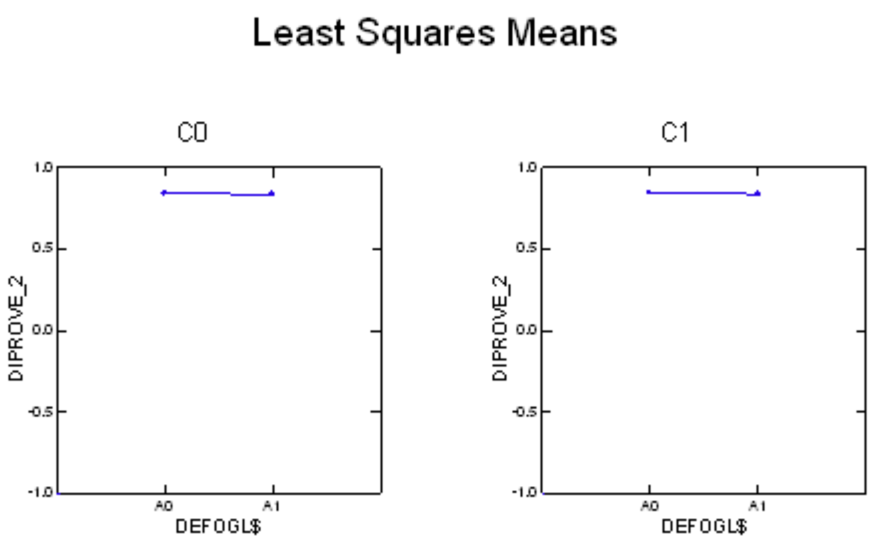



# Least Squares Means

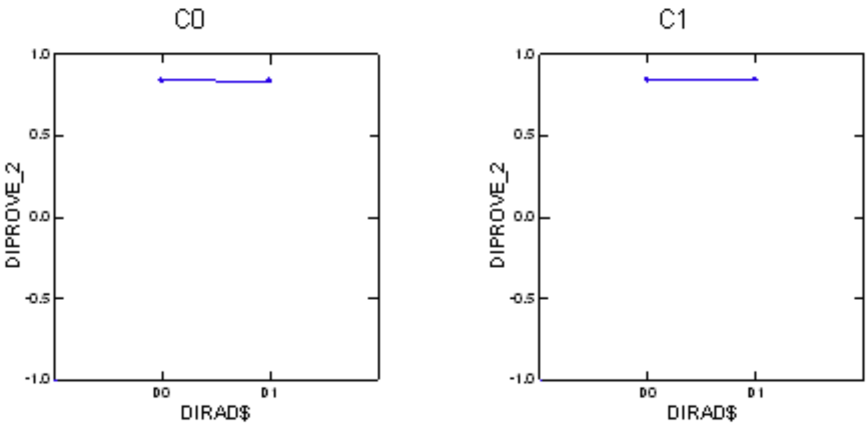



Least Squares Means
Ca
Do
DIPROVE_2
1.0
0.5
0.0
-0.5
-1.0
A0
A1
DEFOGL$

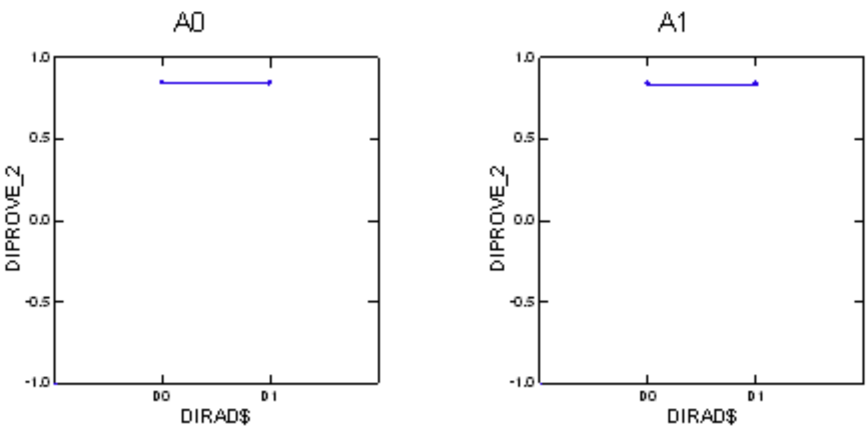

Least Squares Means
Ca
Do
DIPROVE_2
1.0
0.5
0.0
-0.5
-1.0
D0
D1
DIRAD$


Least Squares Means
C0
C1
DIPROVE_2
1.0
0.5
0.0
-0.5
-1.0
A0
A1
DEFOGL$

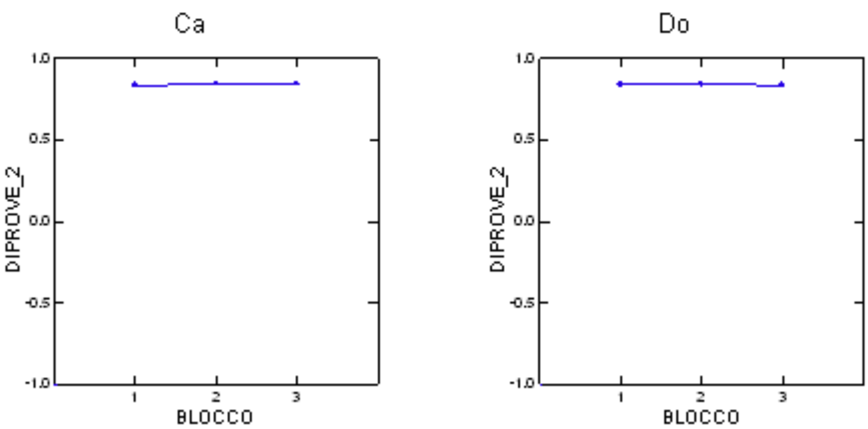
## Least Squares Means



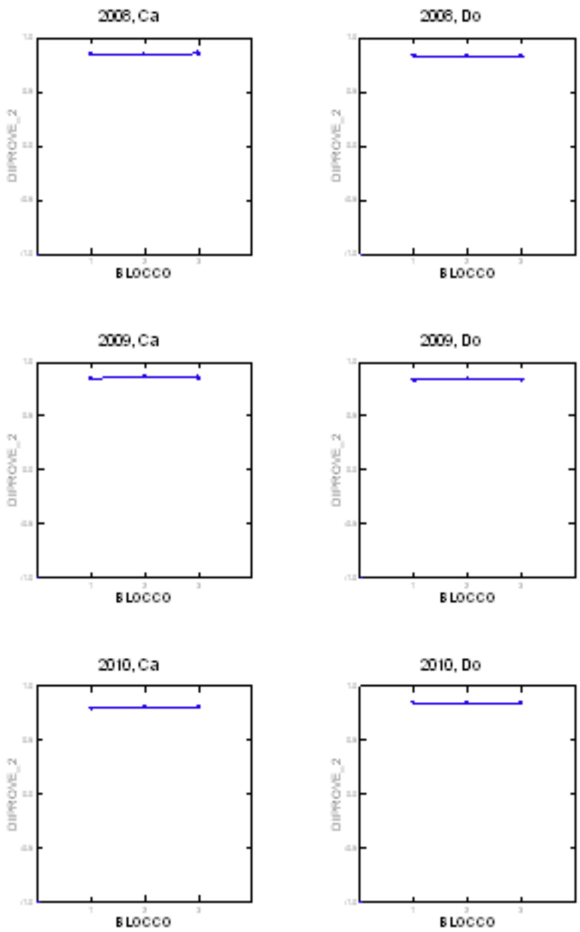

## Least Squares Means




## Least Squares Means



## Least Squares Means




*** WARNING *** :

Case 150 is an Outlier (Studentized Residual : -4.836)

| | |
|---|---|
| Durbin-Watson D Statistic | 1.964 |
| First Order Autocorrelation | 0.017 |

**Information Criteria**

| | |
|---|---|
| AIC | -977.420 |
| AIC (Corrected) | -955.585 |
| Schwarz's BIC | -876.446 |

## ▼General Linear Model
## DIPROVE3 2008- 2009-2010

Data for the following results were selected according to
SELECT (VARIETA$ = 'Cabernet')

Effects coding used for categorical variables in model.
The categorical values encountered during processing are

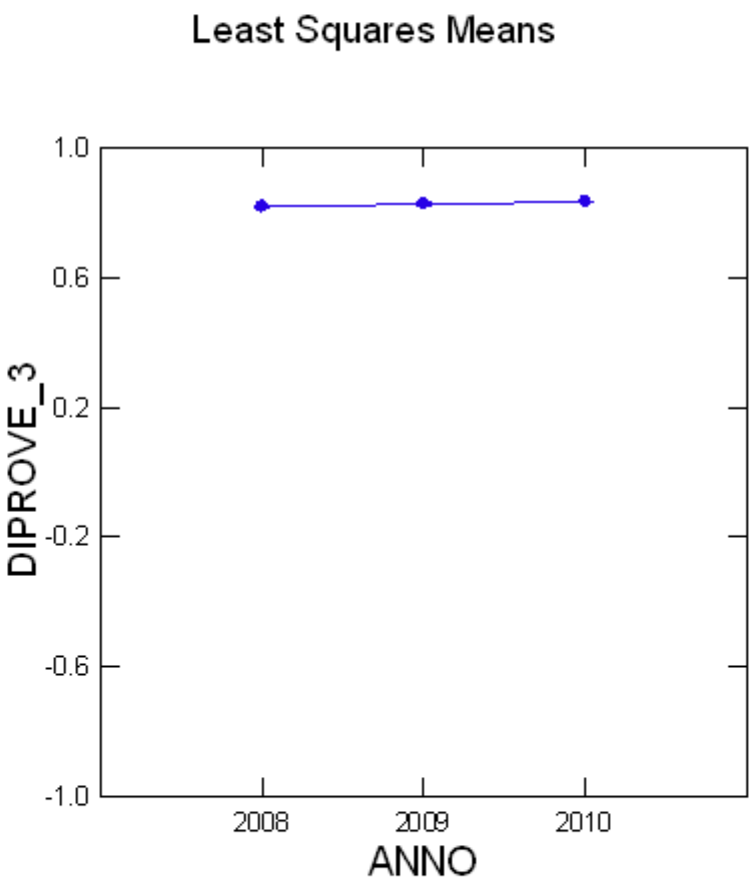
| Variables | Levels | | |
|---|---|---|---|
| ANNO (3 levels) | 2,008.000 | 2,009.000 | 2,010.000 |
| LOCALITA$ (2 levels) | Ca | Do | |

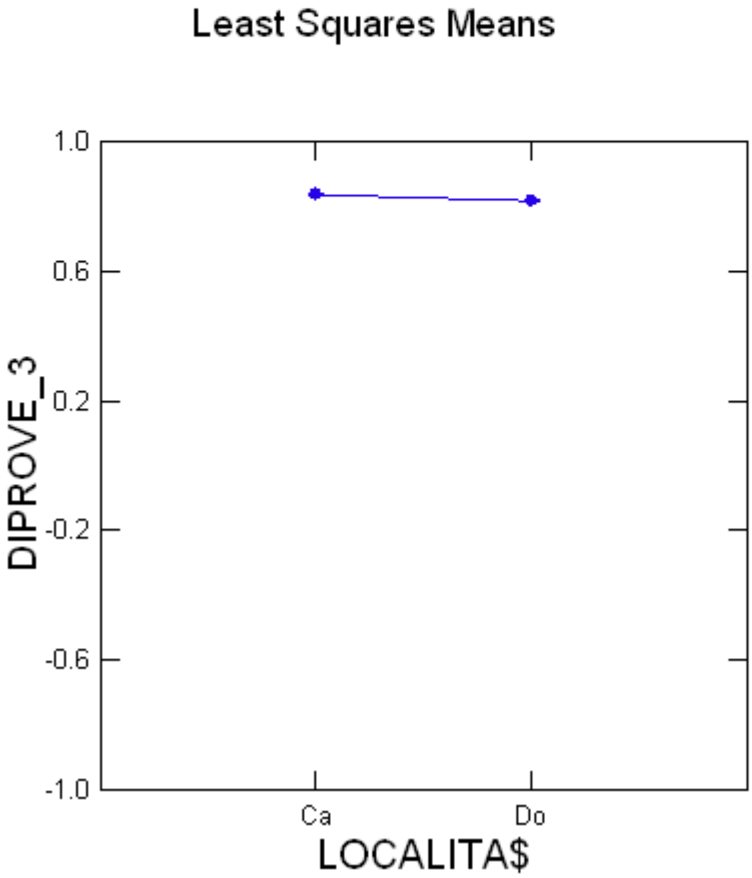
| | | | |
|---|---|---|---|
| N_GEMME$ (2 levels) | C0 | C1 | |
| DEFOGL$ (2 levels) | A0 | A1 | |
| DIRAD$ (2 levels) | D0 | D1 | |
| BLOCCO (3 levels) | 1.000 | 2.000 | 3.000 |

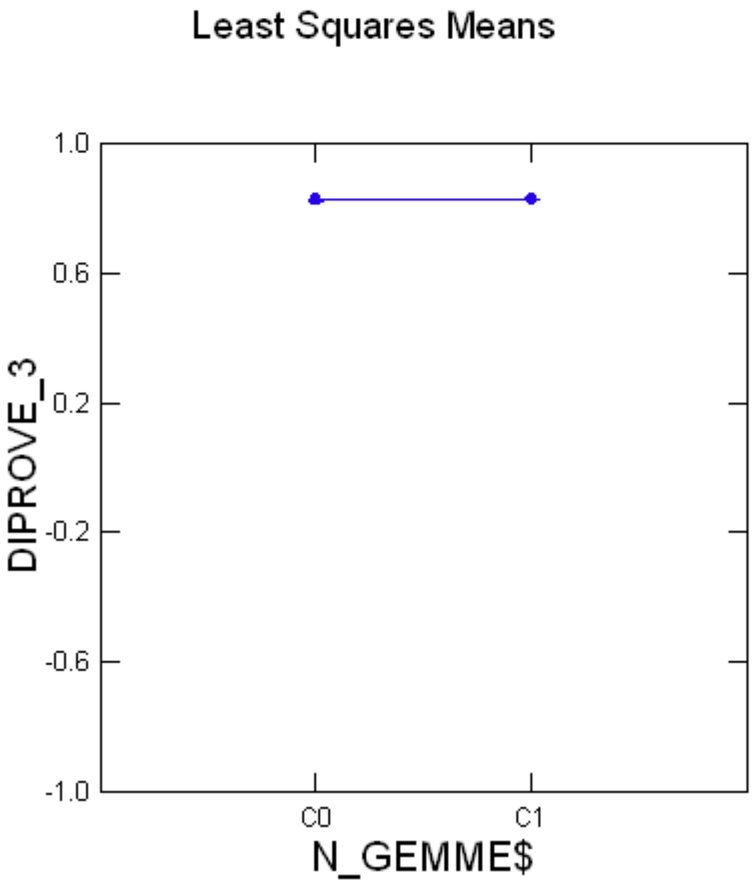
| | |
|---|---|
| Dependent Variable | DIPROVE_3 |
| N | 144 |
| Multiple R | 0.876 |
| Squared Multiple R | 0.768 |

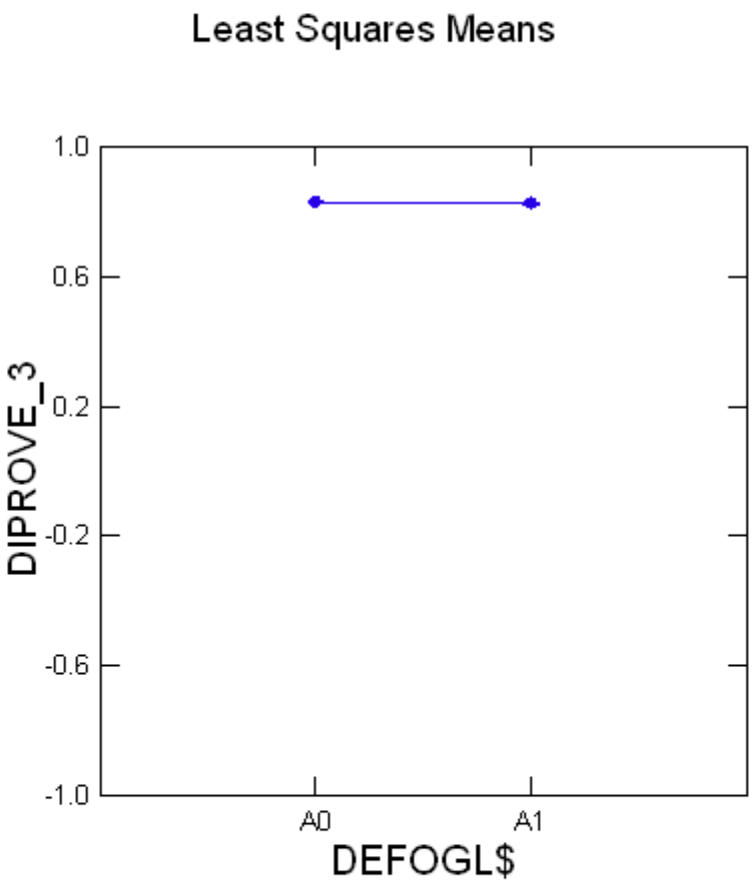
**Analysis of Variance**

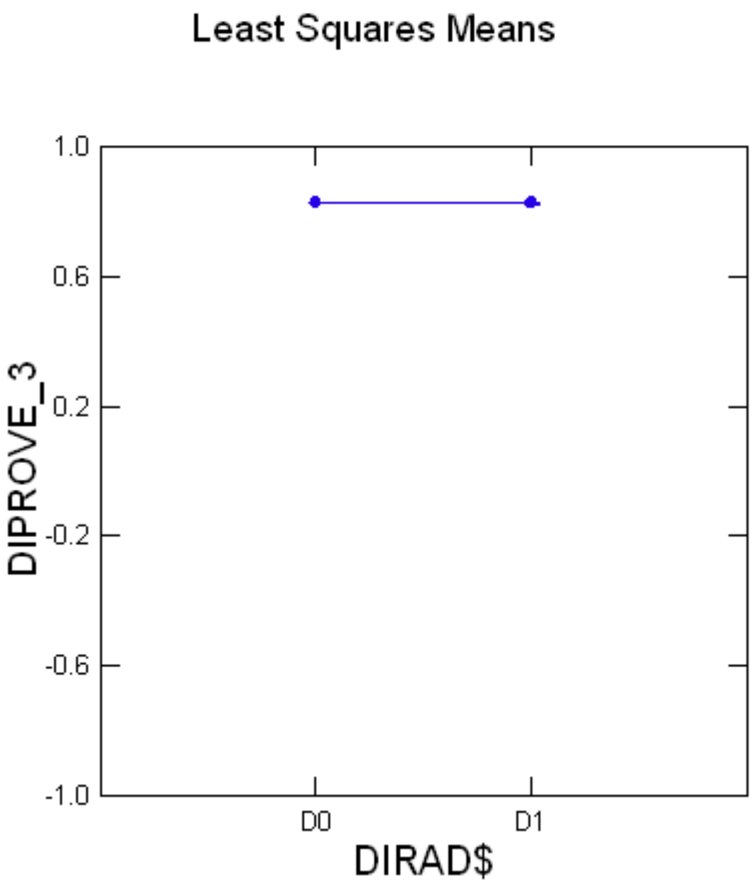
| Source | Type III SS | df | Mean Squares | F-ratio | p-value |
|---|---|---|---|---|---|
| ANNO | 0.005 | 2 | 0.003 | 33.034 | 0.000 |
| LOCALITA$ | 0.010 | 1 | 0.010 | 127.882 | 0.000 |
| N_GEMME$ | 0.000 | 1 | 0.000 | 0.936 | 0.335 |
| DEFOGL$ | 0.000 | 1 | 0.000 | 6.206 | 0.014 |
| DIRAD$ | 0.000 | 1 | 0.000 | 0.240 | 0.625 |
| LOCALITA$*ANNO | 0.004 | 2 | 0.002 | 24.782 | 0.000 |
| N_GEMME$*ANNO | 0.000 | 2 | 0.000 | 0.750 | 0.475 |
| DEFOGL$*ANNO | 0.001 | 2 | 0.000 | 3.279 | 0.041 |
| DIRAD$*ANNO | 0.000 | 2 | 0.000 | 0.560 | 0.573 |
| N_GEMME$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.740 | 0.392 |
| DEFOGL$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.197 | 0.658 |
| DIRAD$*LOCALITA$ | 0.000 | 1 | 0.000 | 0.005 | 0.943 |
| DEFOGL$*N_GEMME$ | 0.000 | 1 | 0.000 | 2.463 | 0.119 |
| DIRAD$*N_GEMME$ | 0.000 | 1 | 0.000 | 4.339 | 0.040 |
| DIRAD$*DEFOGL$ | 0.000 | 1 | 0.000 | 0.219 | 0.640 |
| BLOCCO(LOCALITA$) | 0.002 | 4 | 0.000 | 5.378 | 0.001 |
| BLOCCO*ANNO(LOCALITA$) | 0.002 | 8 | 0.000 | 3.633 | 0.001 |
| Error | 0.008 | 111 | 0.000 | | |



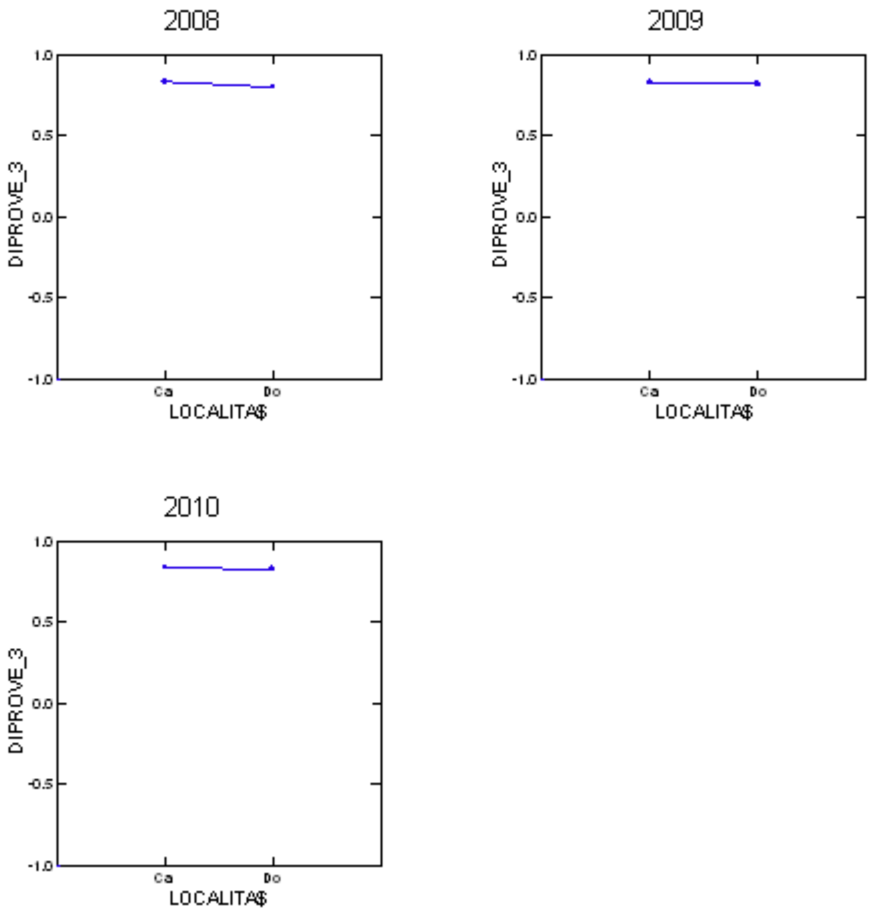

Least Squares Means
DIPROVE_3
1.0
0.6
0.2
-0.2
-0.6
-1.0
Ca
Do
LOCALITA$


Least Squares Means
DIPROVE_3
1.0
0.6
0.2
-0.2
-0.6
-1.0
C0
C1
N_GEMME$

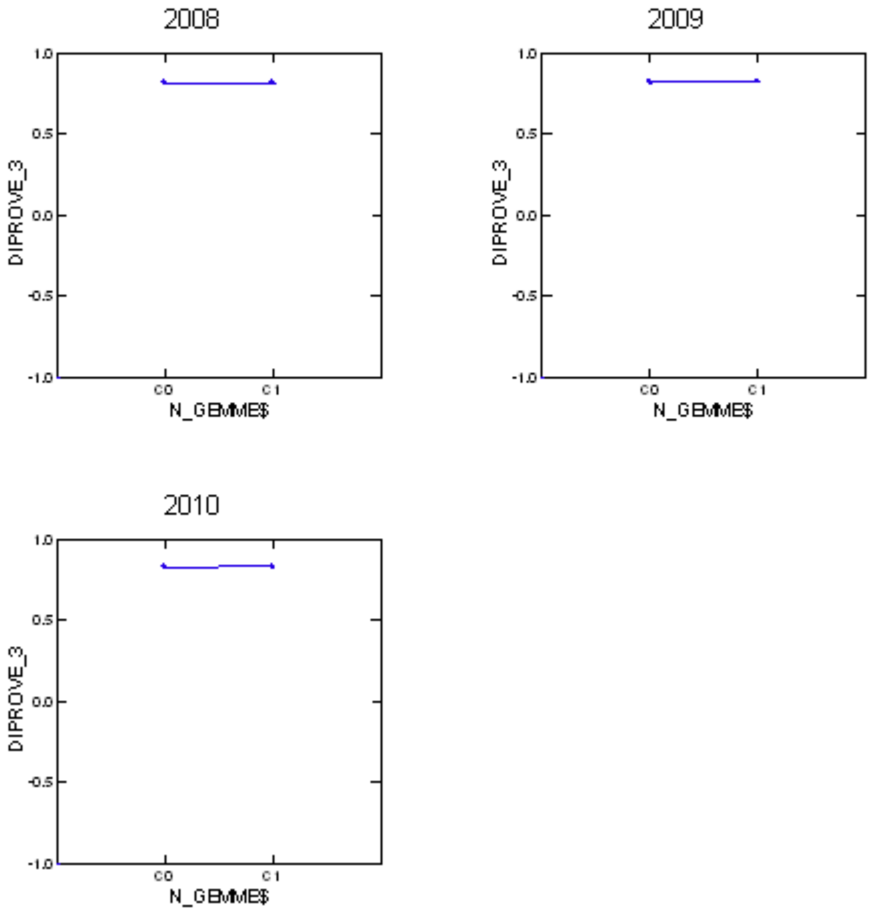

Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_3
A0
A1
DEFOGL$


Least Squares Means
1.0
0.6
0.2
-0.2
-0.6
-1.0
DIPROVE_3
D0
D1
DIRAD$

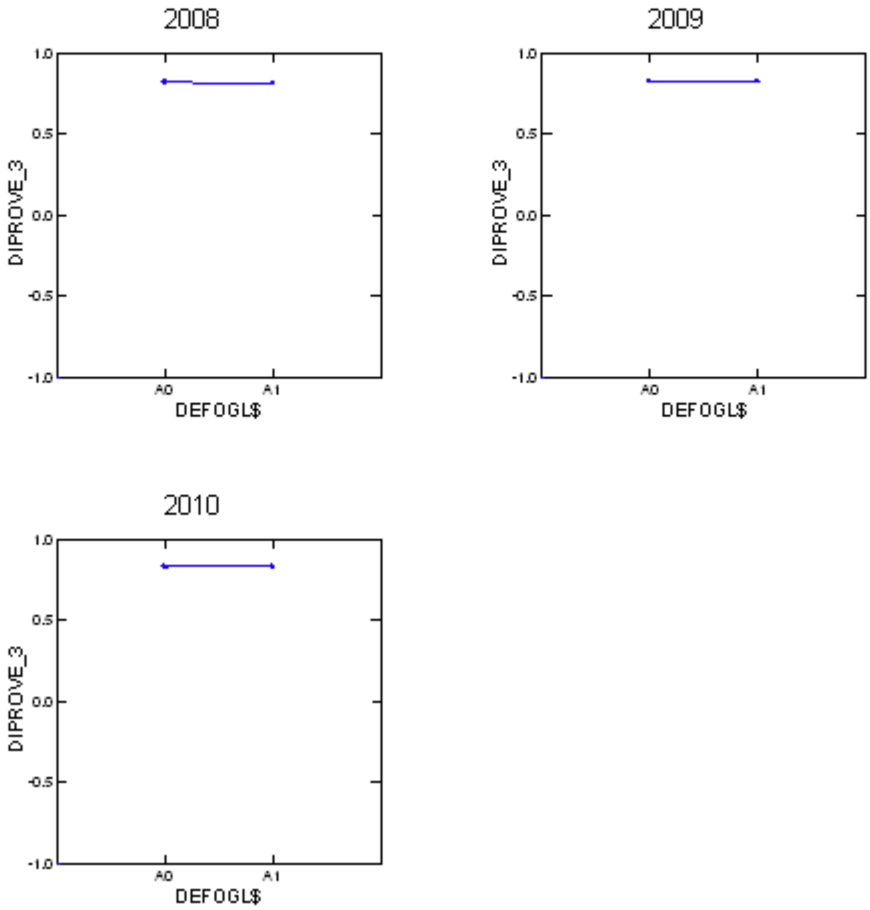
## Least Squares Means



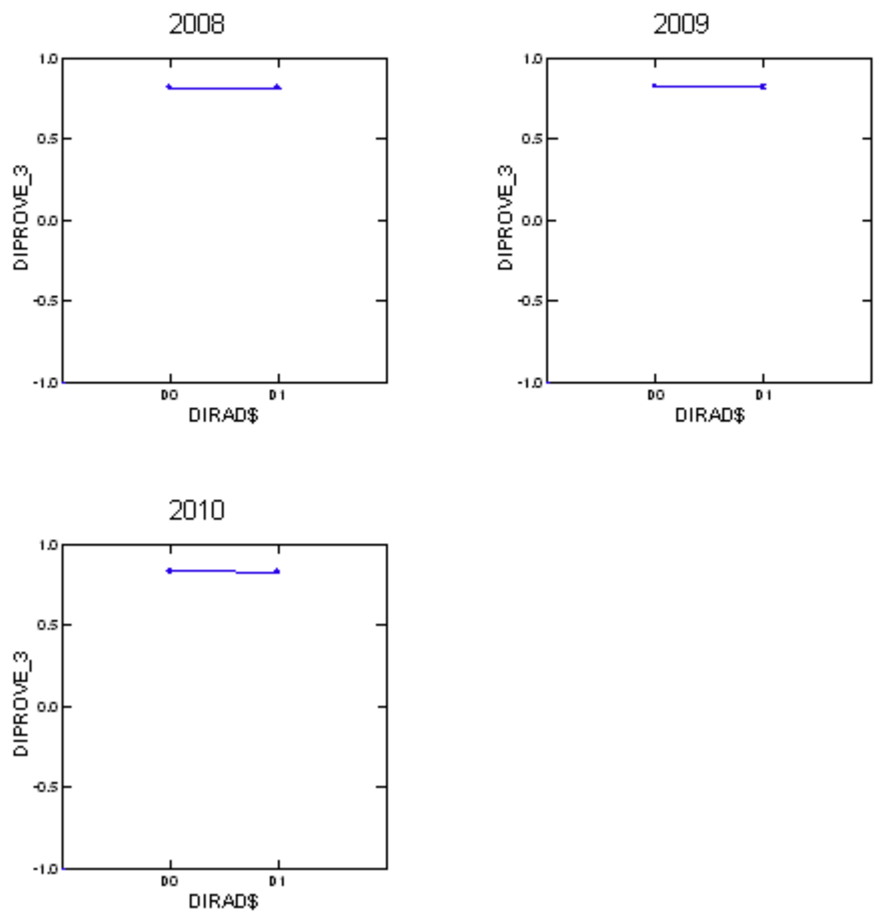
# Least Squares Means



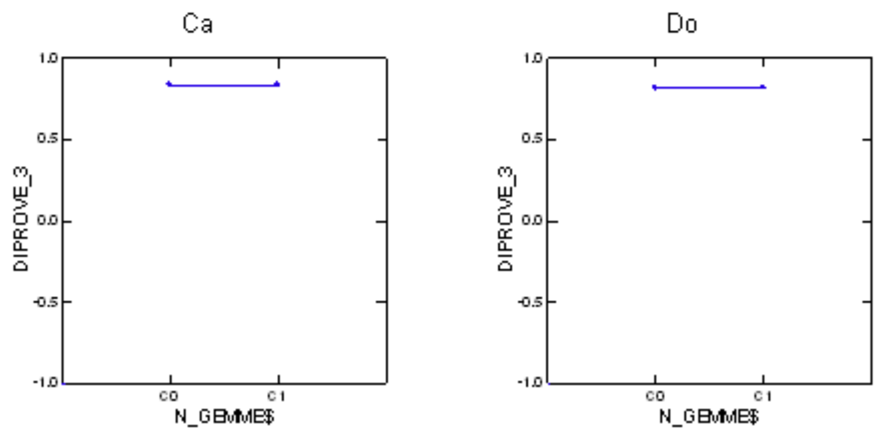
# Least Squares Means

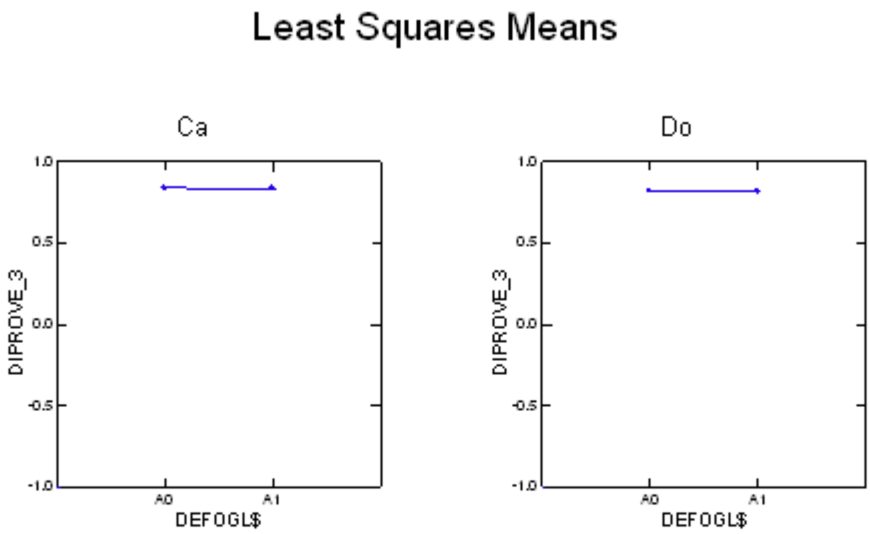


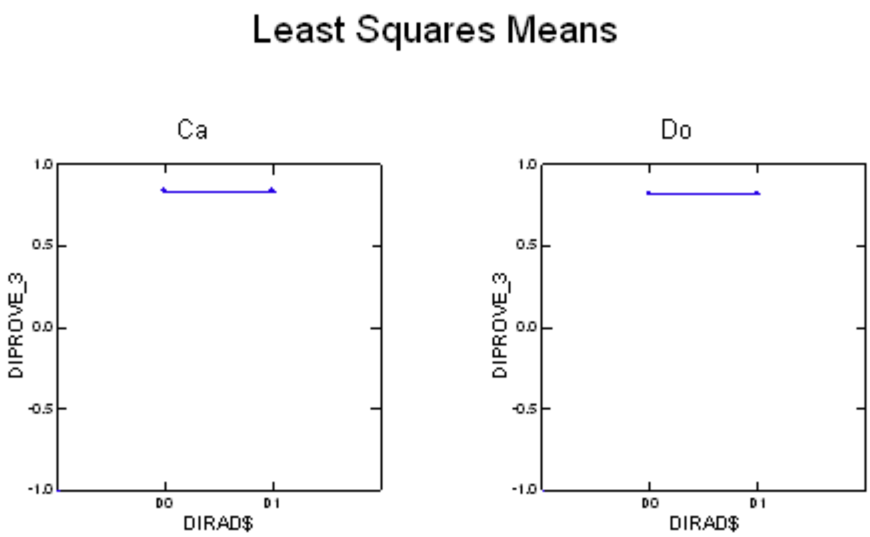
## Least Squares Means

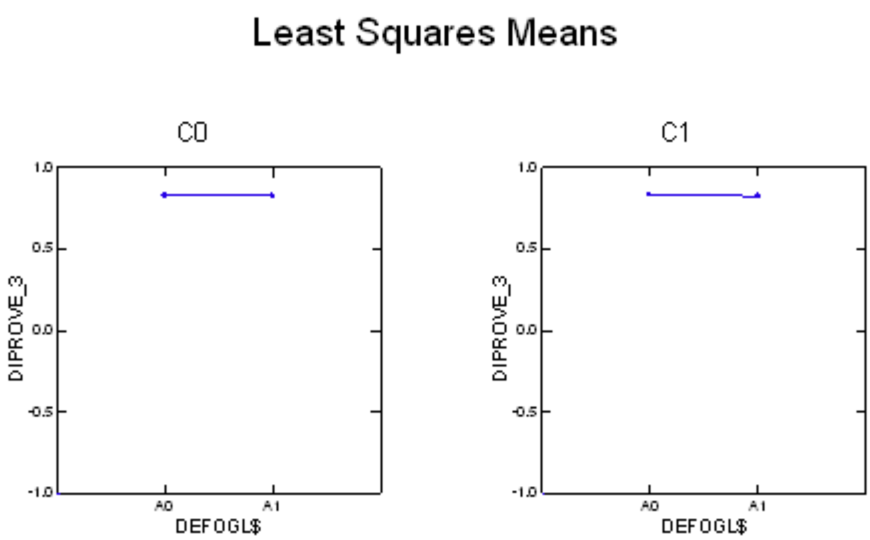


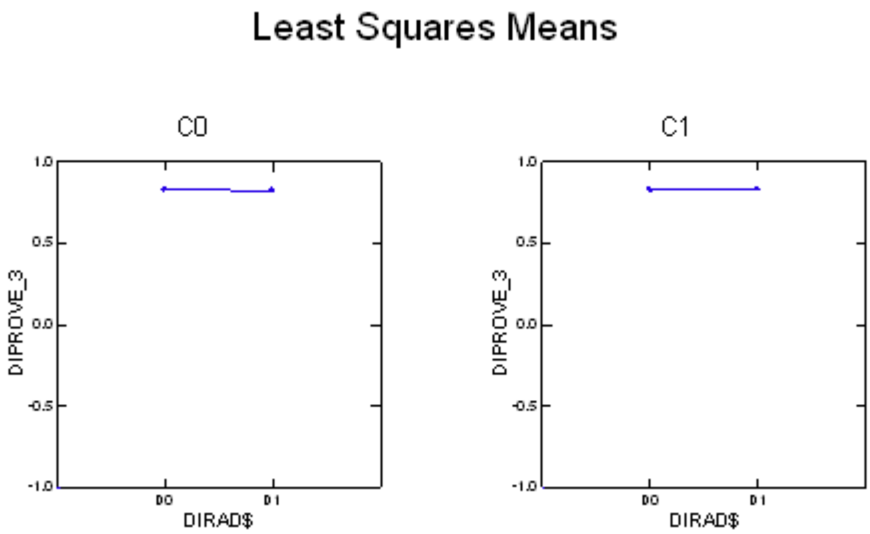

## Least Squares Means

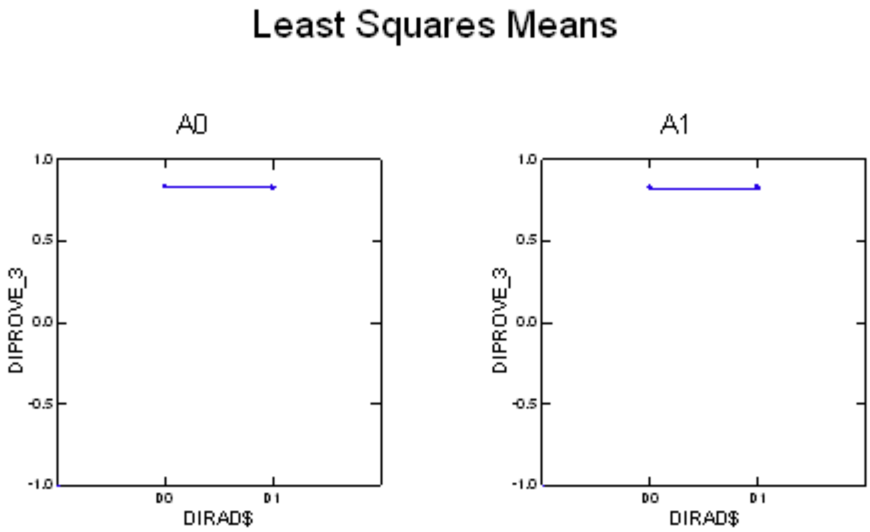


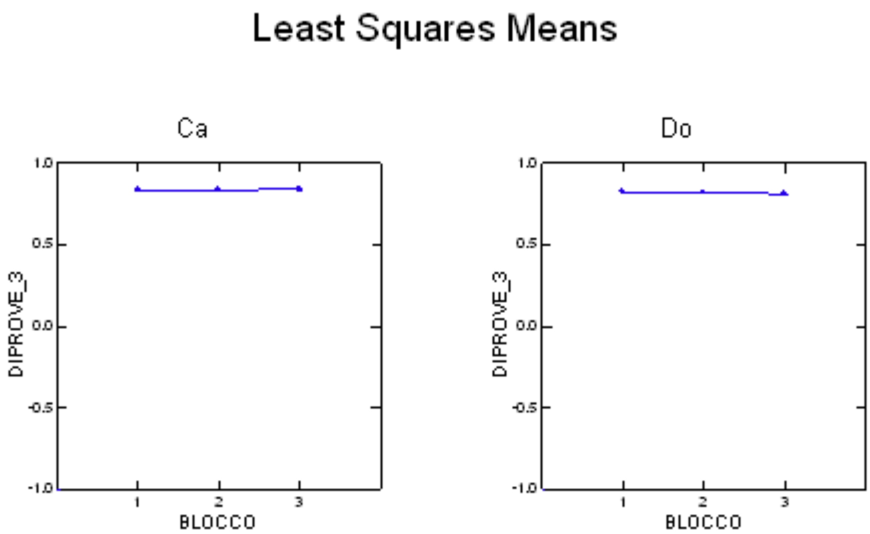

Least Squares Means
Ca
Do
DIPROVE_3
1.0
0.5
0.0
-0.5
-1.0
A0
A1
DEFOGL$


Least Squares Means
Ca
Do
DIPROVE_3
1.0
0.5
0.0
-0.5
-1.0
D0
D1
DIRAD$

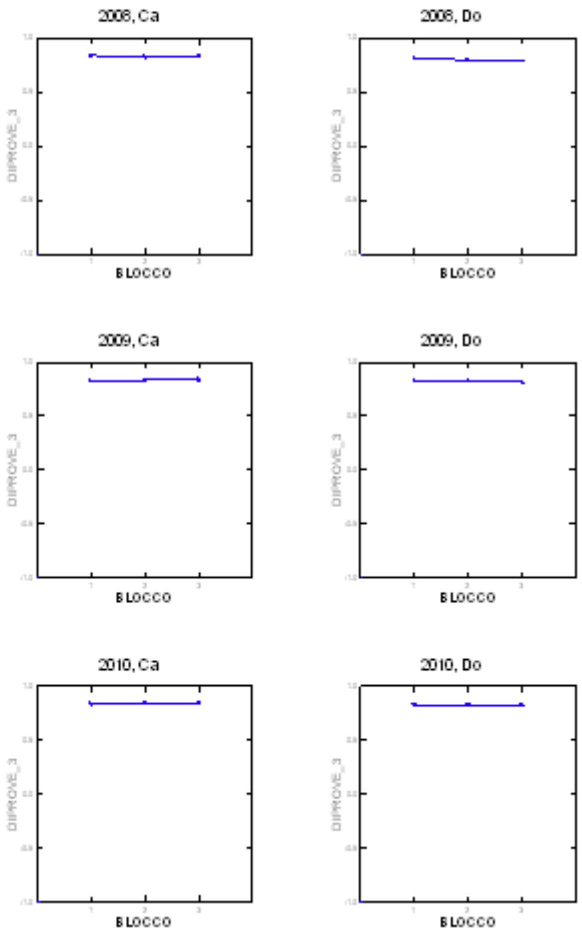

Least Squares Means
C0
C1
DIPROVE_3
1.0
0.5
0.0
-0.5
-1.0
A0
A1
DEFOGL$


Least Squares Means
C0
C1
DIPROVE_3
1.0
0.5
0.0
-0.5
-1.0
D0
D1
DIRAD$


Least Squares Means
A0
A1
DIPROVE_3
1.0
0.5
0.0
-0.5
-1.0
D0
D1
DIRAD$


Least Squares Means
Ca
Do
DIPROVE_3
1.0
0.5
0.0
-0.5
-1.0
1
2
3
BLOCCO

## Least Squares Means




*** WARNING *** :

Case 329 is an Outlier (Studentized Residual : -3.896)

| | |
|---|---|
| Durbin-Watson D Statistic | 1.805 |
| First Order Autocorrelation | 0.093 |

**Information Criteria**

| | |
|---|---|
| AIC | -925.840 |
| AIC (Corrected) | -904.005 |
| Schwarz's BIC | -824.866 |

# Allegato 2.3 – Modelli lineari

BROLIO 2008 IBIMET

PvinacciaA

Analysis of Variance Table

Response: Br_2008M[, 11]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 2038219 | 2038219 | 31.8985 | 6.014e-05 | *** |
| IBIMET_3 | 1 | 7849 | 7849 | 0.1228 | 0.73119 | |
| N_Gemme | 1 | 5055 | 5055 | 0.0791 | 0.78262 | |
| Defogl | 1 | 150317 | 150317 | 2.3525 | 0.14737 | |
| Dirad | 1 | 26236 | 26236 | 0.4106 | 0.53202 | |
| Vigoria | 2 | 143063 | 71532 | 1.1195 | 0.35399 | |
| N_Gemme:Defogl | 1 | 51968 | 51968 | 0.8133 | 0.38240 | |
| N_Gemme:Dirad | 1 | 18287 | 18287 | 0.2862 | 0.60107 | |
| Defogl:Dirad | 1 | 240687 | 240687 | 3.7668 | 0.07269 | . |
| N_Gemme:Vigoria | 2 | 11669 | 5835 | 0.0913 | 0.91327 | |
| Defogl:Vigoria | 2 | 231843 | 115922 | 1.8142 | 0.19925 | |
| Dirad:Vigoria | 2 | 241749 | 120874 | 1.8917 | 0.18741 | |
| N_Gemme:Defogl:Dirad | 1 | 43162 | 43162 | 0.6755 | 0.42492 | |
| Residuals | 14 | 894558 | 63897 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.834
IBIMET_3: n.s

DensMostoA

Analysis of Variance Table

Response: Br_2008M[, 12]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 0.00026477 | 0.00026477 | 9.6908 | 0.007633 | ** |
| IBIMET_3 | 1 | 0.00003575 | 0.00003575 | 1.3083 | 0.271880 | |
| N_Gemme | 1 | 0.00000003 | 0.00000003 | 0.0011 | 0.974480 | |
| Defogl | 1 | 0.00034380 | 0.00034380 | 12.5834 | 0.003218 | ** |
| Dirad | 1 | 0.00002282 | 0.00002282 | 0.8353 | 0.376217 | |
| Vigoria | 2 | 0.00020993 | 0.00010497 | 3.8419 | 0.046768 | * |
| N_Gemme:Defogl | 1 | 0.00003774 | 0.00003774 | 1.3812 | 0.259506 | |
| N_Gemme:Dirad | 1 | 0.00001229 | 0.00001229 | 0.4500 | 0.513257 | |
| Defogl:Dirad | 1 | 0.00000865 | 0.00000865 | 0.3168 | 0.582453 | |
| N_Gemme:Vigoria | 2 | 0.00006097 | 0.00003049 | 1.1158 | 0.355116 | |
| Defogl:Vigoria | 2 | 0.00003478 | 0.00001739 | 0.6366 | 0.543751 | |
| Dirad:Vigoria | 2 | 0.00003689 | 0.00001844 | 0.6750 | 0.524967 | |
| N_Gemme:Defogl:Dirad | 1 | 0.00000288 | 0.00000288 | 0.1054 | 0.750269 | |
| Residuals | 14 | 0.00038250 | 0.00002732 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.64
IBIMET_3: n.s

BrixA

Analysis of Variance Table

Response: Br_2008M[, 13]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 12.3283 | 12.3283 | 9.3080 | 0.008634 | ** |
| IBIMET_3 | 1 | 1.7029 | 1.7029 | 1.2857 | 0.275883 | |
| N_Gemme | 1 | 0.0123 | 0.0123 | 0.0093 | 0.924493 | |
| Defogl | 1 | 15.8643 | 15.8643 | 11.9776 | 0.003821 | ** |
| Dirad | 1 | 0.9193 | 0.9193 | 0.6941 | 0.418765 | |
| Vigoria | 2 | 9.5810 | 4.7905 | 3.6169 | 0.054164 | . |
| N_Gemme:Defogl | 1 | 1.7139 | 1.7139 | 1.2940 | 0.274406 | |
| N_Gemme:Dirad | 1 | 0.5895 | 0.5895 | 0.4450 | 0.515546 | |
| Defogl:Dirad | 1 | 0.2802 | 0.2802 | 0.2115 | 0.652624 | |
| N_Gemme:Vigoria | 2 | 2.8178 | 1.4089 | 1.0637 | 0.371484 | |
| Defogl:Vigoria | 2 | 1.8706 | 0.9353 | 0.7062 | 0.510293 | |
| Dirad:Vigoria | 2 | 1.7576 | 0.8788 | 0.6635 | 0.530513 | |
| N_Gemme:Defogl:Dirad | 1 | 0.1468 | 0.1468 | 0.1108 | 0.744127 | |
| Residuals | 14 | 18.5429 | 1.3245 | | | |

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.632
IBIMET_3: n.s

PhA

Analysis of Variance Table

Response: Br_2008M[, 14]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 0.036222 | 0.036222 | 8.3198 | 0.01201 | * |
| IBIMET_3 | 1 | 0.011046 | 0.011046 | 2.5373 | 0.13351 | |
| N_Gemme | 1 | 0.000001 | 0.000001 | 0.0002 | 0.98983 | |
| Defogl | 1 | 0.004080 | 0.004080 | 0.9371 | 0.34945 | |
| Dirad | 1 | 0.000047 | 0.000047 | 0.0108 | 0.91852 | |
| Vigoria | 2 | 0.023246 | 0.011623 | 2.6698 | 0.10418 | |
| N_Gemme:Defogl | 1 | 0.000148 | 0.000148 | 0.0340 | 0.85635 | |
| N_Gemme:Dirad | 1 | 0.000244 | 0.000244 | 0.0560 | 0.81641 | |
| Defogl:Dirad | 1 | 0.003645 | 0.003645 | 0.8373 | 0.37566 | |
| N_Gemme:Vigoria | 2 | 0.002846 | 0.001423 | 0.3269 | 0.72653 | |
| Defogl:Vigoria | 2 | 0.005273 | 0.002636 | 0.6055 | 0.55947 | |
| Dirad:Vigoria | 2 | 0.003965 | 0.001982 | 0.4553 | 0.64332 | |
| N_Gemme:Defogl:Dirad | 1 | 0.004279 | 0.004279 | 0.9829 | 0.33831 | |
| Residuals | 14 | 0.060951 | 0.004354 | | | |

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.611
IBIMET_3: n.s

AcTitolA

Analysis of Variance Table

Response: Br_2008M[, 15]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 3.7138 | 3.7138 | 29.4853 | 8.869e-05 | *** |
| IBIMET_3 | 1 | 2.3019 | 2.3019 | 18.2758 | 0.0007699 | *** |
| N_Gemme | 1 | 0.0461 | 0.0461 | 0.3663 | 0.5547011 | |
| Defogl | 1 | 0.5466 | 0.5466 | 4.3401 | 0.0560381 | . |
| Dirad | 1 | 0.1147 | 0.1147 | 0.9110 | 0.3560424 | |

```
Vigoria              2 1.5717  0.7859  6.2393 0.0115514 *
N_Gemme:Defogl       1 0.1806  0.1806  1.4342 0.2509714
N_Gemme:Dirad        1 0.0017  0.0017  0.0138 0.9080677
Defogl:Dirad         1 0.0031  0.0031  0.0248 0.8770001
N_Gemme:Vigoria      2 0.0150  0.0075  0.0596 0.9424112
Defogl:Vigoria       2 0.8940  0.4470  3.5491 0.0566490 .
Dirad:Vigoria        2 0.4373  0.2187  1.7361 0.2120596
N_Gemme:Defogl:Dirad 1 0.0360  0.0360  0.2855 0.6015041
Residuals           14 1.7634  0.1260
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: 0.823
IBIMET_3: 0.752

AcTartA

Analysis of Variance Table

```
Response: Br_2008M[, 16]
                    Df  Sum Sq Mean Sq F value    Pr(>F)
IBIMET_2             1 0.05541 0.05541  0.4383 0.5187087
IBIMET_3             1 2.92083 2.92083 23.1013 0.0002792 ***
N_Gemme              1 0.27065 0.27065  2.1406 0.1655284
Defogl               1 0.79581 0.79581  6.2942 0.0250365 *
Dirad                1 0.26727 0.26727  2.1139 0.1680146
Vigoria              2 2.20864 1.10432  8.7342 0.0034496 **
N_Gemme:Defogl       1 0.08257 0.08257  0.6531 0.4325416
N_Gemme:Dirad        1 0.01915 0.01915  0.1515 0.7029827
Defogl:Dirad         1 0.00879 0.00879  0.0695 0.7958598
N_Gemme:Vigoria      2 0.03643 0.01821  0.1441 0.8671072
Defogl:Vigoria       2 0.90252 0.45126  3.5691 0.0559020 .
Dirad:Vigoria        2 0.70921 0.35460  2.8046 0.0945524 .
N_Gemme:Defogl:Dirad 1 0.02264 0.02264  0.1790 0.6786324
Residuals           14 1.77010 0.12644
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: n.s
IBIMET_3: 0.789

AcMalicoA

Analysis of Variance Table

```
Response: Br_2008M[, 17]
                    Df Sum Sq Mean Sq F value    Pr(>F)
IBIMET_2             1 3.7514  3.7514 96.9208 1.133e-07 ***
IBIMET_3             1 0.2291  0.2291  5.9189   0.02898 *
N_Gemme              1 0.0517  0.0517  1.3352   0.26722
Defogl               1 0.2936  0.2936  7.5845   0.01552 *
Dirad                1 0.0213  0.0213  0.5508   0.47024
Vigoria              2 0.3861  0.1931  4.9882   0.02314 *
N_Gemme:Defogl       1 0.1204  0.1204  3.1096   0.09963 .
N_Gemme:Dirad        1 0.0220  0.0220  0.5671   0.46388
Defogl:Dirad         1 0.0008  0.0008  0.0207   0.88767
N_Gemme:Vigoria      2 0.0097  0.0049  0.1254   0.88309
Defogl:Vigoria       2 0.0822  0.0411  1.0616   0.37216
Dirad:Vigoria        2 0.0578  0.0289  0.7463   0.49208
```

```
N_Gemme:Defogl:Dirad  1 0.0204  0.0204  0.5270   0.47983
Residuals            14 0.5419  0.0387
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.935
IBIMET_3: -0.545
```

KA

```
Analysis of Variance Table

Response: Br_2008M[, 18]
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
IBIMET_2              1 0.011484 0.011484  2.4252 0.141711
IBIMET_3              1 0.067156 0.067156 14.1820 0.002087 **
N_Gemme               1 0.000324 0.000324  0.0684 0.797512
Defogl                1 0.000243 0.000243  0.0514 0.823993
Dirad                 1 0.001726 0.001726  0.3646 0.555636
Vigoria               2 0.007716 0.003858  0.8147 0.462680
N_Gemme:Defogl        1 0.017336 0.017336  3.6610 0.076373 .
N_Gemme:Dirad         1 0.000043 0.000043  0.0091 0.925180
Defogl:Dirad          1 0.000019 0.000019  0.0040 0.950281
N_Gemme:Vigoria       2 0.004525 0.002263  0.4778 0.629896
Defogl:Vigoria        2 0.019085 0.009542  2.0152 0.170161
Dirad:Vigoria         2 0.006548 0.003274  0.6914 0.517171
N_Gemme:Defogl:Dirad  1 0.002145 0.002145  0.4529 0.511916
Residuals            14 0.066294 0.004735
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: 0.709
```

ApaA

```
Analysis of Variance Table

Response: Br_2008M[, 19]
                     Df Sum Sq Mean Sq F value   Pr(>F)
IBIMET_2              1 4721.5  4721.5 15.9821 0.001322 **
IBIMET_3              1 3056.6  3056.6 10.3466 0.006212 **
N_Gemme               1    0.7     0.7  0.0023 0.962237
Defogl                1 2858.7  2858.7  9.6766 0.007667 **
Dirad                 1    9.4     9.4  0.0317 0.861333
Vigoria               2 1203.1   601.5  2.0362 0.167416
N_Gemme:Defogl        1  217.9   217.9  0.7376 0.404905
N_Gemme:Dirad         1  420.5   420.5  1.4234 0.252667
Defogl:Dirad          1   41.2    41.2  0.1394 0.714519
N_Gemme:Vigoria       2  667.1   333.6  1.1291 0.351079
Defogl:Vigoria        2  579.1   289.6  0.9802 0.399580
Dirad:Vigoria         2  370.7   185.3  0.6274 0.548356
N_Gemme:Defogl:Dirad  1  172.1   172.1  0.5827 0.457938
Residuals            14 4135.9   295.4
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.73
IBIMET_3: -0.652
```

Antoctot1A

Analysis of Variance Table

Response: Br_2008M[, 20]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 169781 | 169781 | 32.3539 | 5.602e-05 | *** |
| IBIMET_3 | 1 | 1114 | 1114 | 0.2123 | 0.6521 | |
| N_Gemme | 1 | 468 | 468 | 0.0893 | 0.7695 | |
| Defogl | 1 | 17310 | 17310 | 3.2986 | 0.0908 | . |
| Dirad | 1 | 1 | 1 | 0.0001 | 0.9910 | |
| Vigoria | 2 | 22321 | 11161 | 2.1268 | 0.1561 | |
| N_Gemme:Defogl | 1 | 10571 | 10571 | 2.0144 | 0.1777 | |
| N_Gemme:Dirad | 1 | 740 | 740 | 0.1410 | 0.7129 | |
| Defogl:Dirad | 1 | 1778 | 1778 | 0.3388 | 0.5698 | |
| N_Gemme:Vigoria | 2 | 9315 | 4658 | 0.8876 | 0.4336 | |
| Defogl:Vigoria | 2 | 10079 | 5040 | 0.9604 | 0.4066 | |
| Dirad:Vigoria | 2 | 4179 | 2089 | 0.3982 | 0.6789 | |
| N_Gemme:Defogl:Dirad | 1 | 3905 | 3905 | 0.7441 | 0.4029 | |
| Residuals | 14 | 73467 | 5248 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.835
IBIMET_3: n.s

Poliftot1A

Analysis of Variance Table

Response: Br_2008M[, 21]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 486552 | 486552 | 22.3242 | 0.0003255 | *** |
| IBIMET_3 | 1 | 2121 | 2121 | 0.0973 | 0.7596571 | |
| N_Gemme | 1 | 4864 | 4864 | 0.2232 | 0.6439237 | |
| Defogl | 1 | 93683 | 93683 | 4.2984 | 0.0570828 | . |
| Dirad | 1 | 152 | 152 | 0.0070 | 0.9345278 | |
| Vigoria | 2 | 65994 | 32997 | 1.5140 | 0.2539545 | |
| N_Gemme:Defogl | 1 | 12088 | 12088 | 0.5546 | 0.4687471 | |
| N_Gemme:Dirad | 1 | 35386 | 35386 | 1.6236 | 0.2233358 | |
| Defogl:Dirad | 1 | 261 | 261 | 0.0120 | 0.9144467 | |
| N_Gemme:Vigoria | 2 | 21008 | 10504 | 0.4820 | 0.6274504 | |
| Defogl:Vigoria | 2 | 8313 | 4157 | 0.1907 | 0.8284789 | |
| Dirad:Vigoria | 2 | 17946 | 8973 | 0.4117 | 0.6702914 | |
| N_Gemme:Defogl:Dirad | 1 | 18456 | 18456 | 0.8468 | 0.3730374 | |
| Residuals | 14 | 305127 | 21795 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.784
IBIMET_3: n.s

Antoctot2A

Analysis of Variance Table

Response: Br_2008M[, 22]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 381603 | 381603 | 33.1596 | 4.95e-05 | *** |
| IBIMET_3 | 1 | 26506 | 26506 | 2.3032 | 0.151360 | |
| N_Gemme | 1 | 3805 | 3805 | 0.3307 | 0.574387 | |
| Defogl | 1 | 166153 | 166153 | 14.4379 | 0.001952 | ** |
| Dirad | 1 | 391 | 391 | 0.0340 | 0.856366 | |
| Vigoria | 2 | 136164 | 68082 | 5.9161 | 0.013733 | * |
| N_Gemme:Defogl | 1 | 10742 | 10742 | 0.9334 | 0.350366 | |
| N_Gemme:Dirad | 1 | 36268 | 36268 | 3.1515 | 0.097591 | . |
| Defogl:Dirad | 1 | 6119 | 6119 | 0.5317 | 0.477911 | |
| N_Gemme:Vigoria | 2 | 4706 | 2353 | 0.2045 | 0.817464 | |
| Defogl:Vigoria | 2 | 67506 | 33753 | 2.9330 | 0.086324 | . |
| Dirad:Vigoria | 2 | 27238 | 13619 | 1.1835 | 0.335066 | |
| N_Gemme:Defogl:Dirad | 1 | 7365 | 7365 | 0.6399 | 0.437093 | |
| Residuals | 14 | 161113 | 11508 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.839
IBIMET_3: n.s

Poliftot2A

Analysis of Variance Table

Response: Br_2008M[, 23]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 1090120 | 1090120 | 12.7131 | 0.003104 | ** |
| IBIMET_3 | 1 | 292928 | 292928 | 3.4162 | 0.085793 | . |
| N_Gemme | 1 | 3793 | 3793 | 0.0442 | 0.836446 | |
| Defogl | 1 | 849619 | 849619 | 9.9083 | 0.007123 | ** |
| Dirad | 1 | 94 | 94 | 0.0011 | 0.974056 | |
| Vigoria | 2 | 370967 | 185484 | 2.1631 | 0.151838 | |
| N_Gemme:Defogl | 1 | 7 | 7 | 0.0001 | 0.992719 | |
| N_Gemme:Dirad | 1 | 405280 | 405280 | 4.7264 | 0.047346 | * |
| Defogl:Dirad | 1 | 4690 | 4690 | 0.0547 | 0.818477 | |
| N_Gemme:Vigoria | 2 | 28689 | 14345 | 0.1673 | 0.847623 | |
| Defogl:Vigoria | 2 | 6821 | 3410 | 0.0398 | 0.961117 | |
| Dirad:Vigoria | 2 | 16798 | 8399 | 0.0980 | 0.907309 | |
| N_Gemme:Defogl:Dirad | 1 | 36588 | 36588 | 0.4267 | 0.524198 | |
| Residuals | 14 | 1200471 | 85748 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.69
IBIMET_3: n.s

PvinacciaB

Analysis of Variance Table

Response: Br_2008M[, 24]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 7849966 | 7849966 | 256.1616 | 2.151e-10 | *** |
| IBIMET_3 | 1 | 711 | 711 | 0.0232 | 0.88111 | |
| N_Gemme | 1 | 74526 | 74526 | 2.4319 | 0.14120 | |
| Defogl | 1 | 1029635 | 1029635 | 33.5992 | 4.632e-05 | *** |
| Dirad | 1 | 189832 | 189832 | 6.1946 | 0.02602 | * |
| Vigoria | 2 | 198955 | 99477 | 3.2462 | 0.06946 | . |

```
N_Gemme:Defogl        1       23       23   0.0008   0.97836
N_Gemme:Dirad         1  106966  106966   3.4905   0.08279 .
Defogl:Dirad          1  188388  188388   6.1475   0.02650 *
N_Gemme:Vigoria       2   36440   18220   0.5946   0.56516
Defogl:Vigoria        2    7010    3505   0.1144   0.89275
Dirad:Vigoria         2   11848    5924   0.1933   0.82639
N_Gemme:Defogl:Dirad  1   18001   18001   0.5874   0.45615
Residuals            14  429024   30645
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.974
IBIMET_3: n.s
```

DensMostoB

```
Analysis of Variance Table

Response: Br_2008M[, 25]
                     Df     Sum Sq    Mean Sq F value   Pr(>F)
IBIMET_2              1 0.00015104 0.00015104  5.8875 0.029344 *
IBIMET_3              1 0.00000753 0.00000753  0.2936 0.596467
N_Gemme               1 0.00000369 0.00000369  0.1437 0.710362
Defogl                1 0.00039824 0.00039824 15.5238 0.001481 **
Dirad                 1 0.00001103 0.00001103  0.4300 0.522628
Vigoria               2 0.00014106 0.00007053  2.7493 0.098373 .
N_Gemme:Defogl        1 0.00000121 0.00000121  0.0472 0.831059
N_Gemme:Dirad         1 0.00013184 0.00013184  5.1393 0.039758 *
Defogl:Dirad          1 0.00000375 0.00000375  0.1464 0.707773
N_Gemme:Vigoria       2 0.00000084 0.00000042  0.0165 0.983695
Defogl:Vigoria        2 0.00005930 0.00002965  1.1557 0.343125
Dirad:Vigoria         2 0.00002302 0.00001151  0.4486 0.647365
N_Gemme:Defogl:Dirad  1 0.00001851 0.00001851  0.7215 0.409946
Residuals            14 0.00035915 0.00002565
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.544
IBIMET_3: n.s
```

BrixB

```
Analysis of Variance Table

Response: Br_2008M[, 26]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_2              1  6.8384  6.8384  5.9648 0.028462 *
IBIMET_3              1  0.2479  0.2479  0.2162 0.649066
N_Gemme               1  0.1767  0.1767  0.1541 0.700539
Defogl                1 18.9585 18.9585 16.5367 0.001155 **
Dirad                 1  0.7451  0.7451  0.6499 0.433614
Vigoria               2  5.9969  2.9985  2.6154 0.108368
N_Gemme:Defogl        1  0.0379  0.0379  0.0331 0.858330
N_Gemme:Dirad         1  6.0860  6.0860  5.3086 0.037066 *
Defogl:Dirad          1  0.1105  0.1105  0.0964 0.760785
N_Gemme:Vigoria       2  0.0525  0.0263  0.0229 0.977397
Defogl:Vigoria        2  2.7005  1.3503  1.1778 0.336695
Dirad:Vigoria         2  1.2057  0.6028  0.5258 0.602286
N_Gemme:Defogl:Dirad  1  0.7682  0.7682  0.6700 0.426750
```

```
Residuals            14 16.0502  1.1464
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.547
IBIMET_3: n.s
```

PhB

Analysis of Variance Table

```
Response: Br_2008M[, 27]
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
IBIMET_2              1 0.001177 0.001177  0.4624 0.507599
IBIMET_3              1 0.036821 0.036821 14.4628 0.001939 **
N_Gemme               1 0.000689 0.000689  0.2708 0.610945
Defogl                1 0.003586 0.003586  1.4084 0.255077
Dirad                 1 0.001225 0.001225  0.4811 0.499263
Vigoria               2 0.011333 0.005667  2.2258 0.144761
N_Gemme:Defogl        1 0.000314 0.000314  0.1233 0.730690
N_Gemme:Dirad         1 0.019332 0.019332  7.5934 0.015473 *
Defogl:Dirad          1 0.000075 0.000075  0.0296 0.865863
N_Gemme:Vigoria       2 0.001860 0.000930  0.3653 0.700403
Defogl:Vigoria        2 0.003415 0.001707  0.6707 0.527050
Dirad:Vigoria         2 0.000717 0.000358  0.1408 0.869890
N_Gemme:Defogl:Dirad  1 0.004751 0.004751  1.8661 0.193461
Residuals            14 0.035642 0.002546
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: -0.713
```

AcTitolB

Analysis of Variance Table

```
Response: Br_2008M[, 28]
                     Df Sum Sq Mean Sq F value    Pr(>F)
IBIMET_2              1 1.7781  1.7781  9.4304 0.0082984 **
IBIMET_3              1 4.2513  4.2513 22.5467 0.0003114 ***
N_Gemme               1 0.0381  0.0381  0.2022 0.6598502
Defogl                1 0.6562  0.6562  3.4801 0.0832043 .
Dirad                 1 0.0525  0.0525  0.2785 0.6059535
Vigoria               2 4.7978  2.3989 12.7227 0.0007095 ***
N_Gemme:Defogl        1 0.0578  0.0578  0.3066 0.5885323
N_Gemme:Dirad         1 0.0120  0.0120  0.0638 0.8042230
Defogl:Dirad          1 0.0079  0.0079  0.0416 0.8412451
N_Gemme:Vigoria       2 0.1180  0.0590  0.3129 0.7362832
Defogl:Vigoria        2 0.0652  0.0326  0.1730 0.8429278
Dirad:Vigoria         2 0.1678  0.0839  0.4448 0.6496793
N_Gemme:Defogl:Dirad  1 0.1071  0.1071  0.5682 0.4634562
Residuals            14 2.6398  0.1886
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.634
IBIMET_3: 0.785
```

AcTartB

Analysis of Variance Table

Response: Br_2008M[, 29]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 0.1714 | 0.1714 | 1.5956 | 0.2271666 | |
| IBIMET_3 | 1 | 3.8087 | 3.8087 | 35.4539 | 3.521e-05 | *** |
| N_Gemme | 1 | 0.0339 | 0.0339 | 0.3154 | 0.5832562 | |
| Defogl | 1 | 3.0112 | 3.0112 | 28.0295 | 0.0001133 | *** |
| Dirad | 1 | 0.3538 | 0.3538 | 3.2934 | 0.0910389 | . |
| Vigoria | 2 | 2.9600 | 1.4800 | 13.7769 | 0.0004927 | *** |
| N_Gemme:Defogl | 1 | 0.0248 | 0.0248 | 0.2308 | 0.6383555 | |
| N_Gemme:Dirad | 1 | 0.0556 | 0.0556 | 0.5175 | 0.4837466 | |
| Defogl:Dirad | 1 | 0.0022 | 0.0022 | 0.0203 | 0.8886928 | |
| N_Gemme:Vigoria | 2 | 0.0370 | 0.0185 | 0.1724 | 0.8434351 | |
| Defogl:Vigoria | 2 | 0.2799 | 0.1400 | 1.3028 | 0.3027694 | |
| Dirad:Vigoria | 2 | 0.0054 | 0.0027 | 0.0252 | 0.9751761 | |
| N_Gemme:Defogl:Dirad | 1 | 0.0652 | 0.0652 | 0.6067 | 0.4490163 | |
| Residuals | 14 | 1.5040 | 0.1074 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: 0.847

AcMalicoB

Analysis of Variance Table

Response: Br_2008M[, 30]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 2.33336 | 2.33336 | 13.1446 | 0.002755 | ** |
| IBIMET_3 | 1 | 0.00240 | 0.00240 | 0.0135 | 0.909116 | |
| N_Gemme | 1 | 0.07396 | 0.07396 | 0.4166 | 0.529059 | |
| Defogl | 1 | 0.92914 | 0.92914 | 5.2342 | 0.038222 | * |
| Dirad | 1 | 0.13296 | 0.13296 | 0.7490 | 0.401371 | |
| Vigoria | 2 | 0.35176 | 0.17588 | 0.9908 | 0.395879 | |
| N_Gemme:Defogl | 1 | 0.00059 | 0.00059 | 0.0033 | 0.954751 | |
| N_Gemme:Dirad | 1 | 0.21698 | 0.21698 | 1.2223 | 0.287543 | |
| Defogl:Dirad | 1 | 0.00029 | 0.00029 | 0.0016 | 0.968344 | |
| N_Gemme:Vigoria | 2 | 0.08446 | 0.04223 | 0.2379 | 0.791416 | |
| Defogl:Vigoria | 2 | 0.19849 | 0.09924 | 0.5591 | 0.583994 | |
| Dirad:Vigoria | 2 | 0.24570 | 0.12285 | 0.6920 | 0.516883 | |
| N_Gemme:Defogl:Dirad | 1 | 0.00723 | 0.00723 | 0.0408 | 0.842924 | |
| Residuals | 14 | 2.48521 | 0.17751 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.696
IBIMET_3: n.s

KB

Analysis of Variance Table

Response: Br_2008M[, 31]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|

```
IBIMET_2              1 0.022871 0.022871  2.0129 0.17784
IBIMET_3              1 0.036960 0.036960  3.2529 0.09285 .
N_Gemme               1 0.012265 0.012265  1.0795 0.31642
Defogl                1 0.048765 0.048765  4.2918 0.05725 .
Dirad                 1 0.000000 0.000000  0.0000 0.99959
Vigoria               2 0.042085 0.021043  1.8520 0.19338
N_Gemme:Defogl        1 0.000059 0.000059  0.0052 0.94375
N_Gemme:Dirad         1 0.036344 0.036344  3.1986 0.09535 .
Defogl:Dirad          1 0.001982 0.001982  0.1744 0.68256
N_Gemme:Vigoria       2 0.007861 0.003930  0.3459 0.71344
Defogl:Vigoria        2 0.025600 0.012800  1.1265 0.35184
Dirad:Vigoria         2 0.006114 0.003057  0.2691 0.76797
N_Gemme:Defogl:Dirad  1 0.009255 0.009255  0.8145 0.38205
Residuals            14 0.159071 0.011362
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


ApaB

Analysis of Variance Table

Response: Br_2008M[, 32]
                     Df Sum Sq Mean Sq F value   Pr(>F)
IBIMET_2              1 3257.5  3257.5 15.8828 0.001354 **
IBIMET_3              1 2188.2  2188.2 10.6693 0.005626 **
N_Gemme               1   25.2    25.2  0.1230 0.730979
Defogl                1 5817.9  5817.9 28.3670 0.000107 ***
Dirad                 1   20.0    20.0  0.0973 0.759638
Vigoria               2 1194.7   597.4  2.9126 0.087575 .
N_Gemme:Defogl        1   76.7    76.7  0.3738 0.550728
N_Gemme:Dirad         1  300.2   300.2  1.4636 0.246387
Defogl:Dirad          1  108.7   108.7  0.5301 0.478549
N_Gemme:Vigoria       2  366.2   183.1  0.8927 0.431626
Defogl:Vigoria        2  645.5   322.8  1.5737 0.241819
Dirad:Vigoria         2   52.0    26.0  0.1268 0.881945
N_Gemme:Defogl:Dirad  1  581.1   581.1  2.8332 0.114492
Residuals            14 2871.3   205.1
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.729
IBIMET_3: -0.658


Antoctot1B

Analysis of Variance Table

Response: Br_2008M[, 33]
                     Df Sum Sq Mean Sq F value    Pr(>F)
IBIMET_2              1  39531   39531 33.4675 4.725e-05 ***
IBIMET_3              1   1652    1652  1.3988   0.25662
N_Gemme               1   4910    4910  4.1572   0.06080 .
Defogl                1  40942   40942 34.6616 3.953e-05 ***
Dirad                 1     23      23  0.0193   0.89156
Vigoria               2  10270    5135  4.3472   0.03400 *
N_Gemme:Defogl        1    302     302  0.2554   0.62118
```

| | | | | | | |
|---|---|---|---|---|---|---|
| N_Gemme:Dirad | 1 | 1918 | 1918 | 1.6240 | 0.22328 | |
| Defogl:Dirad | 1 | 7532 | 7532 | 6.3765 | 0.02426 | * |
| N_Gemme:Vigoria | 2 | 559 | 280 | 0.2367 | 0.79229 | |
| Defogl:Vigoria | 2 | 14805 | 7402 | 6.2670 | 0.01138 | * |
| Dirad:Vigoria | 2 | 2498 | 1249 | 1.0572 | 0.37358 | |
| N_Gemme:Defogl:Dirad | 1 | 2044 | 2044 | 1.7305 | 0.20948 | |
| Residuals | 14 | 16537 | 1181 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.84
IBIMET_3: n.s

Poliftot1B

Analysis of Variance Table

Response: Br_2008M[, 34]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 19391 | 19391 | 1.0711 | 0.31824 | |
| IBIMET_3 | 1 | 1420 | 1420 | 0.0785 | 0.78349 | |
| N_Gemme | 1 | 3192 | 3192 | 0.1763 | 0.68094 | |
| Defogl | 1 | 69061 | 69061 | 3.8148 | 0.07109 | . |
| Dirad | 1 | 51111 | 51111 | 2.8233 | 0.11507 | |
| Vigoria | 2 | 25341 | 12671 | 0.6999 | 0.51320 | |
| N_Gemme:Defogl | 1 | 2253 | 2253 | 0.1245 | 0.72950 | |
| N_Gemme:Dirad | 1 | 210 | 210 | 0.0116 | 0.91583 | |
| Defogl:Dirad | 1 | 65163 | 65163 | 3.5995 | 0.07862 | . |
| N_Gemme:Vigoria | 2 | 3181 | 1590 | 0.0878 | 0.91640 | |
| Defogl:Vigoria | 2 | 104135 | 52068 | 2.8761 | 0.08986 | . |
| Dirad:Vigoria | 2 | 7685 | 3842 | 0.2122 | 0.81132 | |
| N_Gemme:Defogl:Dirad | 1 | 20349 | 20349 | 1.1241 | 0.30699 | |
| Residuals | 14 | 253448 | 18103 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s

Antoctot2B

Analysis of Variance Table

Response: Br_2008M[, 35]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 44082 | 44082 | 5.7763 | 0.030669 | * |
| IBIMET_3 | 1 | 78049 | 78049 | 10.2272 | 0.006446 | ** |
| N_Gemme | 1 | 34 | 34 | 0.0045 | 0.947669 | |
| Defogl | 1 | 474224 | 474224 | 62.1403 | 1.625e-06 | *** |
| Dirad | 1 | 251 | 251 | 0.0329 | 0.858682 | |
| Vigoria | 2 | 74588 | 37294 | 4.8868 | 0.024560 | * |
| N_Gemme:Defogl | 1 | 1499 | 1499 | 0.1965 | 0.664344 | |
| N_Gemme:Dirad | 1 | 13020 | 13020 | 1.7060 | 0.212553 | |
| Defogl:Dirad | 1 | 18707 | 18707 | 2.4513 | 0.139749 | |
| N_Gemme:Vigoria | 2 | 194 | 97 | 0.0127 | 0.987362 | |
| Defogl:Vigoria | 2 | 40638 | 20319 | 2.6625 | 0.104728 | |
| Dirad:Vigoria | 2 | 674 | 337 | 0.0441 | 0.956950 | |
| N_Gemme:Defogl:Dirad | 1 | 7989 | 7989 | 1.0468 | 0.323601 | |
| Residuals | 14 | 106841 | 7632 | | | |

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.54
IBIMET_3: 0.65


Poliftot2B

Analysis of Variance Table

Response: Br_2008M[, 36]
                    Df  Sum Sq Mean Sq F value Pr(>F)
IBIMET_2             1   35073   35073  0.3743 0.5505
IBIMET_3             1  170310  170310  1.8178 0.1990
N_Gemme              1   35430   35430  0.3782 0.5485
Defogl               1 1214044 1214044 12.9578 0.0029 **
Dirad                1  279441  279441  2.9825 0.1062
Vigoria              2  254783  127392  1.3597 0.2886
N_Gemme:Defogl       1   11112   11112  0.1186 0.7357
N_Gemme:Dirad        1      37      37  0.0004 0.9845
Defogl:Dirad         1  194091  194091  2.0716 0.1720
N_Gemme:Vigoria      2   28240   14120  0.1507 0.8615
Defogl:Vigoria       2  297998  148999  1.5903 0.2386
Dirad:Vigoria        2  130783   65392  0.6979 0.5141
N_Gemme:Defogl:Dirad  1   77666   77666  0.8289 0.3780
Residuals           14 1311693   93692
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


BROLIO 2008 DIPROVE


PvinacciaA

Analysis of Variance Table

Response: Br_2008M[, 11]
                    Df  Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1            1 1355733 1355733 26.4299 0.0001896 ***
DIPROVE_2            1 1333491 1333491 25.9963 0.0002042 ***
DIPROVE_3            1    9907    9907  0.1931 0.6675411
N_Gemme              1    2023    2023  0.0394 0.8456593
Defogl               1   20310   20310  0.3959 0.5400907
Dirad                1   84811   84811  1.6534 0.2209319
Vigoria              2    9695    4847  0.0945 0.9104456
N_Gemme:Defogl       1  104840  104840  2.0439 0.1764120
N_Gemme:Dirad        1    3814    3814  0.0744 0.7893818
Defogl:Dirad         1   52075   52075  1.0152 0.3320483
N_Gemme:Vigoria      2   15109    7554  0.1473 0.8644807
Defogl:Vigoria       2  217498  108749  2.1201 0.1596330
Dirad:Vigoria        2  184518   92259  1.7986 0.2043666
N_Gemme:Defogl:Dirad  1   43999   43999  0.8578 0.3712399
Residuals           13  666840   51295
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
DIPROVE_1: 0.819
DIPROVE_2: 0.816
DIPROVE_3: n.s


DensMostoA

Analysis of Variance Table

Response: Br_2008M[, 12]
                     Df     Sum Sq    Mean Sq F value    Pr(>F)    
DIPROVE_1             1 0.00065375 0.00065375 41.7983 2.116e-05 ***
DIPROVE_2             1 0.00017584 0.00017584 11.2425  0.005191 ** 
DIPROVE_3             1 0.00008085 0.00008085  5.1691  0.040600 *  
N_Gemme               1 0.00000176 0.00000176  0.1124  0.742749    
Defogl                1 0.00006379 0.00006379  4.0783  0.064547 .  
Dirad                 1 0.00000644 0.00000644  0.4118  0.532206    
Vigoria               2 0.00006383 0.00003191  2.0405  0.169548    
N_Gemme:Defogl        1 0.00006788 0.00006788  4.3402  0.057528 .  
N_Gemme:Dirad         1 0.00000932 0.00000932  0.5959  0.453956    
Defogl:Dirad          1 0.00000343 0.00000343  0.2194  0.647291    
N_Gemme:Vigoria       2 0.00002782 0.00001391  0.8895  0.434459    
Defogl:Vigoria        2 0.00002960 0.00001480  0.9461  0.413428    
Dirad:Vigoria         2 0.00006597 0.00003298  2.1089  0.160984    
N_Gemme:Defogl:Dirad  1 0.00000020 0.00000020  0.0128  0.911494    
Residuals            13 0.00020333 0.00001564                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.873
DIPROVE_2: -0.681
DIPROVE_3: 0.533


BrixA

Analysis of Variance Table

Response: Br_2008M[, 13]
                     Df  Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1             1 30.1210 30.1210 39.3136 2.878e-05 ***
DIPROVE_2             1  8.1992  8.1992 10.7015  0.006074 ** 
DIPROVE_3             1  3.4990  3.4990  4.5669  0.052177 .  
N_Gemme               1  0.1238  0.1238  0.1615  0.694274    
Defogl                1  3.0174  3.0174  3.9382  0.068720 .  
Dirad                 1  0.2239  0.2239  0.2923  0.597899    
Vigoria               2  3.0806  1.5403  2.0104  0.173489    
N_Gemme:Defogl        1  3.0338  3.0338  3.9596  0.068062 .  
N_Gemme:Dirad         1  0.4657  0.4657  0.6078  0.449588    
Defogl:Dirad          1  0.2469  0.2469  0.3222  0.579934    
N_Gemme:Vigoria       2  1.4373  0.7186  0.9380  0.416376    
Defogl:Vigoria        2  1.5678  0.7839  1.0231  0.386674    
Dirad:Vigoria         2  3.1343  1.5672  2.0455  0.168911    
N_Gemme:Defogl:Dirad  1  0.0166  0.0166  0.0216  0.885379    
Residuals            13  9.9603  0.7662                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.867
DIPROVE_2: -0.672
DIPROVE_3: n.s
```

PhA

```
Analysis of Variance Table

Response: Br_2008M[, 14]
                    Df   Sum Sq   Mean Sq F value  Pr(>F)  
DIPROVE_1            1 0.023187 0.0231874  7.8742 0.01486 *
DIPROVE_2            1 0.008930 0.0089298  3.0325 0.10521  
DIPROVE_3            1 0.016943 0.0169427  5.7536 0.03217 *
N_Gemme              1 0.002981 0.0029808  1.0123 0.33272  
Defogl               1 0.007233 0.0072325  2.4561 0.14108  
Dirad                1 0.000001 0.0000007  0.0002 0.98800  
Vigoria              2 0.039427 0.0197137  6.6946 0.01003 *
N_Gemme:Defogl       1 0.001163 0.0011626  0.3948 0.54067  
N_Gemme:Dirad        1 0.002183 0.0021827  0.7412 0.40487  
Defogl:Dirad         1 0.000007 0.0000074  0.0025 0.96088  
N_Gemme:Vigoria      2 0.001218 0.0006088  0.2068 0.81584  
Defogl:Vigoria       2 0.004434 0.0022171  0.7529 0.49046  
Dirad:Vigoria        2 0.005614 0.0028068  0.9532 0.41089  
N_Gemme:Defogl:Dirad  1 0.004392 0.0043922  1.4916 0.24366  
Residuals           13 0.038281 0.0029447                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.614
DIPROVE_2: n.s
DIPROVE_3: -0.554

AcTitolA

```
Analysis of Variance Table

Response: Br_2008M[, 15]
                    Df Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1            1 1.2039  1.2039 14.0861 0.0024130 ** 
DIPROVE_2            1 0.5037  0.5037  5.8938 0.0304613 *  
DIPROVE_3            1 3.2676  3.2676 38.2341 3.306e-05 ***
N_Gemme              1 0.2118  0.2118  2.4784 0.1394361    
Defogl               1 0.2781  0.2781  3.2541 0.0944577 .  
Dirad                1 0.0939  0.0939  1.0984 0.3137217    
Vigoria              2 3.0330  1.5165 17.7444 0.0001923 ***
N_Gemme:Defogl       1 0.2901  0.2901  3.3948 0.0883213 .  
N_Gemme:Dirad        1 0.0180  0.0180  0.2100 0.6543099    
Defogl:Dirad         1 0.0631  0.0631  0.7383 0.4057850    
N_Gemme:Vigoria      2 0.0216  0.0108  0.1262 0.8824764    
Defogl:Vigoria       2 0.7776  0.3888  4.5492 0.0317892 *  
Dirad:Vigoria        2 0.7382  0.3691  4.3185 0.0364624 *  
N_Gemme:Defogl:Dirad  1 0.0147  0.0147  0.1715 0.6855637    
Residuals           13 1.1110  0.0855                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: 0.721
DIPROVE_2: 0.559
DIPROVE_3: 0.864

AcTartA

```
Analysis of Variance Table

Response: Br_2008M[, 16]
                    Df Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1            1 0.0336 0.03364  0.4243  0.526142    
DIPROVE_2            1 0.2529 0.25294  3.1908  0.097384 .  
DIPROVE_3            1 2.7306 2.73058 34.4458 5.510e-05 ***
N_Gemme              1 0.0358 0.03580  0.4516  0.513365    
Defogl               1 0.2303 0.23033  2.9056  0.112040    
Dirad                1 0.3685 0.36855  4.6492  0.050383 .  
Vigoria              2 3.2583 1.62913 20.5512 9.435e-05 ***
N_Gemme:Defogl       1 0.1150 0.11503  1.4511  0.249820    
N_Gemme:Dirad        1 0.0037 0.00366  0.0461  0.833294    
Defogl:Dirad         1 0.1685 0.16850  2.1256  0.168585    
N_Gemme:Vigoria      2 0.0540 0.02698  0.3404  0.717645    
Defogl:Vigoria       2 0.5913 0.29564  3.7295  0.052467 .  
Dirad:Vigoria        2 1.1723 0.58613  7.3939  0.007171 ** 
N_Gemme:Defogl:Dirad  1 0.0247 0.02471  0.3117  0.586121    
Residuals           13 1.0305 0.07927                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.852
```

AcMalicoA

```
Analysis of Variance Table

Response: Br_2008M[, 17]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1            1 1.21387 1.21387 56.2027 4.520e-06 ***
DIPROVE_2            1 2.02344 2.02344 93.6863 2.623e-07 ***
DIPROVE_3            1 0.01120 0.01120  0.5183   0.48429    
N_Gemme              1 0.02453 0.02453  1.1357   0.30596    
Defogl               1 0.07583 0.07583  3.5110   0.08361 .  
Dirad                1 0.09812 0.09812  4.5429   0.05271 .  
Vigoria              2 1.44586 0.72293 33.4721 7.456e-06 ***
N_Gemme:Defogl       1 0.12737 0.12737  5.8974   0.03042 *  
N_Gemme:Dirad        1 0.00168 0.00168  0.0779   0.78453    
Defogl:Dirad         1 0.01958 0.01958  0.9065   0.35841    
N_Gemme:Vigoria      2 0.00214 0.00107  0.0495   0.95185    
Defogl:Vigoria       2 0.13645 0.06823  3.1589   0.07619 .  
Dirad:Vigoria        2 0.09438 0.04719  2.1850   0.15204    
N_Gemme:Defogl:Dirad  1 0.03310 0.03310  1.5325   0.23762    
Residuals           13 0.28077 0.02160                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.901
DIPROVE_2: -0.937
DIPROVE_3: n.s
```

KA

```
Analysis of Variance Table
```

```
Response: Br_2008M[, 18]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.007182 0.007182  1.1000 0.31338
DIPROVE_2             1 0.000154 0.000154  0.0236 0.88031
DIPROVE_3             1 0.044574 0.044574  6.8269 0.02148 *
N_Gemme               1 0.005931 0.005931  0.9083 0.35795
Defogl                1 0.001778 0.001778  0.2723 0.61058
Dirad                 1 0.001246 0.001246  0.1908 0.66941
Vigoria               2 0.000379 0.000190  0.0290 0.97144
N_Gemme:Defogl        1 0.014194 0.014194  2.1740 0.16417
N_Gemme:Dirad         1 0.002905 0.002905  0.4449 0.51643
Defogl:Dirad          1 0.000652 0.000652  0.0998 0.75704
N_Gemme:Vigoria       2 0.007328 0.003664  0.5612 0.58376
Defogl:Vigoria        2 0.026199 0.013099  2.0063 0.17403
Dirad:Vigoria         2 0.004290 0.002145  0.3285 0.72578
N_Gemme:Defogl:Dirad  1 0.002954 0.002954  0.4524 0.51298
Residuals            13 0.084879 0.006529
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.587

ApaA

Analysis of Variance Table

```
Response: Br_2008M[, 19]
                     Df Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1             1 4441.5  4441.5 18.1872 0.0009218 ***
DIPROVE_2             1 4704.7  4704.7 19.2650 0.0007321 ***
DIPROVE_3             1 1526.6  1526.6  6.2513 0.0265759 *
N_Gemme               1  301.7   301.7  1.2354 0.2864988
Defogl                1  575.5   575.5  2.3566 0.1487265
Dirad                 1  165.0   165.0  0.6757 0.4258762
Vigoria               2  746.5   373.2  1.5283 0.2534420
N_Gemme:Defogl        1  446.3   446.3  1.8277 0.1994535
N_Gemme:Dirad         1   87.3    87.3  0.3575 0.5601873
Defogl:Dirad          1  188.9   188.9  0.7736 0.3950695
N_Gemme:Vigoria       2  923.8   461.9  1.8913 0.1901243
Defogl:Vigoria        2  596.3   298.1  1.2209 0.3266732
Dirad:Vigoria         2  278.3   139.1  0.5698 0.5791514
N_Gemme:Defogl:Dirad  1  297.3   297.3  1.2174 0.2898803
Residuals            13 3174.7   244.2
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.764
DIPROVE_2: 0.773
DIPROVE_3: -0.57

Antoctot1A

Analysis of Variance Table

```
Response: Br_2008M[, 20]
                     Df Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1             1 157313  157313 41.8647 2.099e-05 ***
```

```
DIPROVE_2             1  60228   60228 16.0280  0.001502 **
DIPROVE_3             1    638     638  0.1699  0.686921
N_Gemme               1     40      40  0.0107  0.919366
Defogl                1    411     411  0.1093  0.746182
Dirad                 1    995     995  0.2649  0.615423
Vigoria               2   8801    4400  1.1710  0.340708
N_Gemme:Defogl        1  19261   19261  5.1258  0.041323 *
N_Gemme:Dirad         1   3596    3596  0.9569  0.345821
Defogl:Dirad          1    207     207  0.0552  0.817915
N_Gemme:Vigoria       2    816     408  0.1086  0.897867
Defogl:Vigoria        2  10823    5412  1.4402  0.272298
Dirad:Vigoria         2  11310    5655  1.5049  0.258302
N_Gemme:Defogl:Dirad  1   1741    1741  0.4634  0.507987
Residuals            13  48849    3758
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.874
DIPROVE_2: 0.743
DIPROVE_3: n.s
```

Poliftot1A

Analysis of Variance Table

```
Response: Br_2008M[, 21]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 362685  362685 15.4021 0.001743 **
DIPROVE_2             1 228672  228672  9.7110 0.008187 **
DIPROVE_3             1   6253    6253  0.2655 0.614993
N_Gemme               1   2236    2236  0.0950 0.762843
Defogl                1  29805   29805  1.2657 0.280915
Dirad                 1   5711    5711  0.2425 0.630587
Vigoria               2   4172    2086  0.0886 0.915772
N_Gemme:Defogl        1  21525   21525  0.9141 0.356468
N_Gemme:Dirad         1  11587   11587  0.4920 0.495383
Defogl:Dirad          1   7255    7255  0.3081 0.588265
N_Gemme:Vigoria       2   5741    2871  0.1219 0.886228
Defogl:Vigoria        2   2854    1427  0.0606 0.941463
Dirad:Vigoria         2  51855   25928  1.1011 0.361622
N_Gemme:Defogl:Dirad  1  25479   25479  1.0820 0.317211
Residuals            13 306122   23548
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.736
DIPROVE_2: 0.654
DIPROVE_3: n.s
```

Antoctot2A

Analysis of Variance Table

```
Response: Br_2008M[, 22]
                     Df Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1             1 410945  410945 45.4819 1.375e-05 ***
DIPROVE_2             1 263649  263649 29.1797 0.0001208 ***
DIPROVE_3             1  30142   30142  3.3360 0.0908251 .
N_Gemme               1     33      33  0.0036 0.9527500
```

```
Defogl               1  36644   36644  4.0556 0.0652017 .
Dirad                1   2271    2271  0.2513 0.6245280
Vigoria              2  19636    9818  1.0866 0.3661224
N_Gemme:Defogl       1  25245   25245  2.7940 0.1185024
N_Gemme:Dirad        1  23231   23231  2.5711 0.1328381
Defogl:Dirad         1    285     285  0.0315 0.8617968
N_Gemme:Vigoria      2   1480     740  0.0819 0.9218589
Defogl:Vigoria       2  75530   37765  4.1797 0.0396552 *
Dirad:Vigoria        2  21773   10887  1.2049 0.3310980
N_Gemme:Defogl:Dirad  1   7356    7356  0.8141 0.3833232
Residuals           13 117460    9035
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.882
DIPROVE_2: 0.832
DIPROVE_3: n.s


Poliftot2A

Analysis of Variance Table

Response: Br_2008M[, 23]
                    Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1            1  793370  793370  7.7387 0.015561 *
DIPROVE_2            1 1081538 1081538 10.5496 0.006353 **
DIPROVE_3            1   58726   58726  0.5728 0.462634
N_Gemme              1   13112   13112  0.1279 0.726362
Defogl               1  493223  493223  4.8110 0.047064 *
Dirad                1   22958   22958  0.2239 0.643905
Vigoria              2  194090   97045  0.9466 0.413247
N_Gemme:Defogl       1    1344    1344  0.0131 0.910606
N_Gemme:Dirad        1   60653   60653  0.5916 0.455541
Defogl:Dirad         1   25397   25397  0.2477 0.626992
N_Gemme:Vigoria      2   38442   19221  0.1875 0.831242
Defogl:Vigoria       2   66257   33129  0.3231 0.729520
Dirad:Vigoria        2   22909   11455  0.1117 0.895135
N_Gemme:Defogl:Dirad  1  102093  102093  0.9958 0.336533
Residuals           13 1332754  102520
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.611
DIPROVE_2: -0.669
DIPROVE_3: n.s


PvinacciaB

Analysis of Variance Table

Response: Br_2008M[, 24]
                    Df  Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1            1 3572194 3572194 68.4015 1.551e-06 ***
DIPROVE_2            1 4297571 4297571 82.2912 5.505e-07 ***
DIPROVE_3            1  314542  314542  6.0229  0.028985 *
N_Gemme              1  121886  121886  2.3339  0.150543
Defogl               1  671478  671478 12.8577  0.003321 **
Dirad                1   41495   41495  0.7946  0.388927
Vigoria              2  286351  143175  2.7416  0.101529
```

| | | | | | | |
|---|---|---|---|---|---|---|
| N_Gemme:Defogl | 1 | 1670 | 1670 | 0.0320 | 0.860827 | |
| N_Gemme:Dirad | 1 | 7651 | 7651 | 0.1465 | 0.708090 | |
| Defogl:Dirad | 1 | 97232 | 97232 | 1.8618 | 0.195569 | |
| N_Gemme:Vigoria | 2 | 3504 | 1752 | 0.0335 | 0.967094 | |
| Defogl:Vigoria | 2 | 4966 | 2483 | 0.0475 | 0.953736 | |
| Dirad:Vigoria | 2 | 34268 | 17134 | 0.3281 | 0.726092 | |
| N_Gemme:Defogl:Dirad | 1 | 7606 | 7606 | 0.1456 | 0.708894 | |
| Residuals | 13 | 678911 | 52224 | | | |

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.917
DIPROVE_2: -0.929
DIPROVE_3: 0.563

DensMostoB

Analysis of Variance Table

Response: Br_2008M[, 25]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.00043241 | 0.00043241 | 19.3782 | 0.000715 | *** |
| DIPROVE_2 | 1 | 0.00006282 | 0.00006282 | 2.8152 | 0.117238 | |
| DIPROVE_3 | 1 | 0.00005562 | 0.00005562 | 2.4924 | 0.138409 | |
| N_Gemme | 1 | 0.00000539 | 0.00000539 | 0.2417 | 0.631145 | |
| Defogl | 1 | 0.00015136 | 0.00015136 | 6.7831 | 0.021822 | * |
| Dirad | 1 | 0.00000285 | 0.00000285 | 0.1279 | 0.726337 | |
| Vigoria | 2 | 0.00004279 | 0.00002139 | 0.9588 | 0.408887 | |
| N_Gemme:Defogl | 1 | 0.00000595 | 0.00000595 | 0.2668 | 0.614132 | |
| N_Gemme:Dirad | 1 | 0.00013025 | 0.00013025 | 5.8369 | 0.031139 | * |
| Defogl:Dirad | 1 | 0.00000039 | 0.00000039 | 0.0175 | 0.896858 | |
| N_Gemme:Vigoria | 2 | 0.00001423 | 0.00000712 | 0.3190 | 0.732431 | |
| Defogl:Vigoria | 2 | 0.00005340 | 0.00002670 | 1.1966 | 0.333434 | |
| Dirad:Vigoria | 2 | 0.00004311 | 0.00002156 | 0.9661 | 0.406287 | |
| N_Gemme:Defogl:Dirad | 1 | 0.00001955 | 0.00001955 | 0.8762 | 0.366309 | |
| Residuals | 13 | 0.00029008 | 0.00002231 | | | |

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.774
DIPROVE_2: n.s
DIPROVE_3: n.s

BrixB

Analysis of Variance Table

Response: Br_2008M[, 26]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 19.4522 | 19.4522 | 19.1152 | 0.0007555 | *** |
| DIPROVE_2 | 1 | 2.7366 | 2.7366 | 2.6892 | 0.1249931 | |
| DIPROVE_3 | 1 | 2.2890 | 2.2890 | 2.2493 | 0.1575644 | |
| N_Gemme | 1 | 0.2261 | 0.2261 | 0.2222 | 0.6452060 | |
| Defogl | 1 | 7.7421 | 7.7421 | 7.6080 | 0.0162790 | * |
| Dirad | 1 | 0.2689 | 0.2689 | 0.2642 | 0.6158440 | |
| Vigoria | 2 | 1.8435 | 0.9218 | 0.9058 | 0.4282769 | |
| N_Gemme:Defogl | 1 | 0.2152 | 0.2152 | 0.2115 | 0.6532079 | |
| N_Gemme:Dirad | 1 | 5.8317 | 5.8317 | 5.7307 | 0.0324543 | * |
| Defogl:Dirad | 1 | 0.0057 | 0.0057 | 0.0056 | 0.9415584 | |

```
N_Gemme:Vigoria       2  0.6203  0.3102  0.3048 0.7424116
Defogl:Vigoria        2  2.5187  1.2593  1.2375 0.3221274
Dirad:Vigoria         2  2.1402  1.0701  1.0516 0.3773111
N_Gemme:Defogl:Dirad  1  0.8557  0.8557  0.8409 0.3758485
Residuals            13 13.2292  1.0176
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.771
DIPROVE_2: n.s
DIPROVE_3: n.s


PhB

Analysis of Variance Table

Response: Br_2008M[, 27]
                     Df    Sum Sq   Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.0050864 0.0050864  2.4400 0.142279
DIPROVE_2             1 0.0014529 0.0014529  0.6970 0.418882
DIPROVE_3             1 0.0142532 0.0142532  6.8375 0.021394 *
N_Gemme               1 0.0014769 0.0014769  0.7085 0.415156
Defogl                1 0.0098253 0.0098253  4.7134 0.049034 *
Dirad                 1 0.0016389 0.0016389  0.7862 0.391355
Vigoria               2 0.0298398 0.0149199  7.1573 0.008018 **
N_Gemme:Defogl        1 0.0005286 0.0005286  0.2536 0.622994
N_Gemme:Dirad         1 0.0106936 0.0106936  5.1299 0.041254 *
Defogl:Dirad          1 0.0003932 0.0003932  0.1886 0.671192
N_Gemme:Vigoria       2 0.0032565 0.0016282  0.7811 0.478253
Defogl:Vigoria        2 0.0071497 0.0035749  1.7149 0.218280
Dirad:Vigoria         2 0.0020526 0.0010263  0.4923 0.622144
N_Gemme:Defogl:Dirad  1 0.0061907 0.0061907  2.9698 0.108517
Residuals            13 0.0270993 0.0020846
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.587


AcTitolB

Analysis of Variance Table

Response: Br_2008M[, 28]
                     Df Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1             1 0.0686  0.0686  0.2979 0.5944252
DIPROVE_2             1 0.0013  0.0013  0.0055 0.9422047
DIPROVE_3             1 4.8760  4.8760 21.1788 0.0004959 ***
N_Gemme               1 0.3935  0.3935  1.7090 0.2137628
Defogl                1 0.0133  0.0133  0.0577 0.8138557
Dirad                 1 0.0835  0.0835  0.3629 0.5572801
Vigoria               2 5.4553  2.7277 11.8475 0.0011768 **
N_Gemme:Defogl        1 0.0898  0.0898  0.3899 0.5431306
N_Gemme:Dirad         1 0.0976  0.0976  0.4239 0.5263226
Defogl:Dirad          1 0.0005  0.0005  0.0021 0.9638201
N_Gemme:Vigoria       2 0.1918  0.0959  0.4165 0.6678716
Defogl:Vigoria        2 0.0973  0.0487  0.2113 0.8122226
Dirad:Vigoria         2 0.2913  0.1456  0.6326 0.5468209
```

```
N_Gemme:Defogl:Dirad  1 0.0969  0.0969  0.4209 0.5277758
Residuals            13 2.9930  0.2302
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.787


AcTartB

Analysis of Variance Table

Response: Br_2008M[, 29]
                     Df Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1             1 0.1405  0.1405  1.0973 0.3139435
DIPROVE_2             1 0.0753  0.0753  0.5881 0.4568418
DIPROVE_3             1 4.0592  4.0592 31.6987 8.198e-05 ***
N_Gemme               1 0.2425  0.2425  1.8940 0.1919992
Defogl                1 0.9486  0.9486  7.4079 0.0174545 *
Dirad                 1 0.5143  0.5143  4.0161 0.0663602 .
Vigoria               2 4.1682  2.0841 16.2748 0.0002887 ***
N_Gemme:Defogl        1 0.0387  0.0387  0.3023 0.5917663
N_Gemme:Dirad         1 0.0030  0.0030  0.0232 0.8812218
Defogl:Dirad          1 0.0750  0.0750  0.5859 0.4576645
N_Gemme:Vigoria       2 0.0917  0.0459  0.3582 0.7055994
Defogl:Vigoria        2 0.1484  0.0742  0.5793 0.5741411
Dirad:Vigoria         2 0.0731  0.0366  0.2855 0.7562103
N_Gemme:Defogl:Dirad  1 0.0698  0.0698  0.5448 0.4735544
Residuals            13 1.6647  0.1281
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.842


AcMalicoB

Analysis of Variance Table

Response: Br_2008M[, 30]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.87235 0.87235  4.9388 0.04463 *
DIPROVE_2             1 0.38399 0.38399  2.1740 0.16416
DIPROVE_3             1 0.08486 0.08486  0.4804 0.50042
N_Gemme               1 0.01902 0.01902  0.1077 0.74800
Defogl                1 0.70653 0.70653  4.0000 0.06684 .
Dirad                 1 0.21960 0.21960  1.2433 0.28503
Vigoria               2 1.35922 0.67961  3.8476 0.04869 *
N_Gemme:Defogl        1 0.00110 0.00110  0.0062 0.93843
N_Gemme:Dirad         1 0.51652 0.51652  2.9243 0.11100
Defogl:Dirad          1 0.03052 0.03052  0.1728 0.68442
N_Gemme:Vigoria       2 0.06692 0.03346  0.1894 0.82967
Defogl:Vigoria        2 0.24984 0.12492  0.7072 0.51102
Dirad:Vigoria         2 0.22194 0.11097  0.6283 0.54896
N_Gemme:Defogl:Dirad  1 0.03391 0.03391  0.1920 0.66846
Residuals            13 2.29620 0.17663
---
```

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.525
DIPROVE_2: n.s
DIPROVE_3: n.s

KB

Analysis of Variance Table

Response: Br_2008M[, 31]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.006354 | 0.006354 | 0.5851 | 0.45800 | |
| DIPROVE_2 | 1 | 0.000190 | 0.000190 | 0.0175 | 0.89667 | |
| DIPROVE_3 | 1 | 0.113958 | 0.113958 | 10.4929 | 0.00646 | ** |
| N_Gemme | 1 | 0.000236 | 0.000236 | 0.0218 | 0.88499 | |
| Defogl | 1 | 0.008784 | 0.008784 | 0.8088 | 0.38482 | |
| Dirad | 1 | 0.000091 | 0.000091 | 0.0083 | 0.92863 | |
| Vigoria | 2 | 0.055173 | 0.027586 | 2.5401 | 0.11717 | |
| N_Gemme:Defogl | 1 | 0.000144 | 0.000144 | 0.0133 | 0.91004 | |
| N_Gemme:Dirad | 1 | 0.030744 | 0.030744 | 2.8308 | 0.11632 | |
| Defogl:Dirad | 1 | 0.000180 | 0.000180 | 0.0166 | 0.89943 | |
| N_Gemme:Vigoria | 2 | 0.004278 | 0.002139 | 0.1970 | 0.82363 | |
| Defogl:Vigoria | 2 | 0.030183 | 0.015092 | 1.3896 | 0.28384 | |
| Dirad:Vigoria | 2 | 0.006313 | 0.003157 | 0.2907 | 0.75250 | |
| N_Gemme:Defogl:Dirad | 1 | 0.011415 | 0.011415 | 1.0510 | 0.32397 | |
| Residuals | 13 | 0.141187 | 0.010861 | | | |

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.668

ApaB

Analysis of Variance Table

Response: Br_2008M[, 32]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 6868.4 | 6868.4 | 48.4259 | 9.934e-06 | *** |
| DIPROVE_2 | 1 | 1192.7 | 1192.7 | 8.4089 | 0.0124123 | * |
| DIPROVE_3 | 1 | 2730.1 | 2730.1 | 19.2488 | 0.0007346 | *** |
| N_Gemme | 1 | 190.8 | 190.8 | 1.3454 | 0.2669462 | |
| Defogl | 1 | 876.8 | 876.8 | 6.1819 | 0.0272826 | * |
| Dirad | 1 | 152.2 | 152.2 | 1.0734 | 0.3190741 | |
| Vigoria | 2 | 1132.5 | 566.2 | 3.9922 | 0.0444942 | * |
| N_Gemme:Defogl | 1 | 0.2 | 0.2 | 0.0016 | 0.9685821 | |
| N_Gemme:Dirad | 1 | 575.6 | 575.6 | 4.0585 | 0.0651159 | . |
| Defogl:Dirad | 1 | 205.0 | 205.0 | 1.4456 | 0.2506744 | |
| N_Gemme:Vigoria | 2 | 720.8 | 360.4 | 2.5412 | 0.1170797 | |
| Defogl:Vigoria | 2 | 695.0 | 347.5 | 2.4500 | 0.1250524 | |
| Dirad:Vigoria | 2 | 74.1 | 37.0 | 0.2612 | 0.7740639 | |
| N_Gemme:Defogl:Dirad | 1 | 246.9 | 246.9 | 1.7411 | 0.2097672 | |
| Residuals | 13 | 1843.8 | 141.8 | | | |

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.888

```
DIPROVE_2: 0.627
DIPROVE_3: -0.773


Antoctot1B

Analysis of Variance Table

Response: Br_2008M[, 33]
                     Df Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1             1  37368   37368 50.1641 8.260e-06 ***
DIPROVE_2             1  32315   32315 43.3802 1.752e-05 ***
DIPROVE_3             1   1882    1882  2.5271 0.1359210    
N_Gemme               1   3130    3130  4.2015 0.0611224 .  
Defogl                1  23684   23684 31.7934 8.083e-05 ***
Dirad                 1    809     809  1.0857 0.3164184    
Vigoria               2   4873    2436  3.2705 0.0707093 .  
N_Gemme:Defogl        1    225     225  0.3022 0.5918354    
N_Gemme:Dirad         1    426     426  0.5725 0.4627465    
Defogl:Dirad          1   4554    4554  6.1134 0.0280011 *  
N_Gemme:Vigoria       2    618     309  0.4150 0.6687555    
Defogl:Vigoria        2  19860    9930 13.3300 0.0007101 ***
Dirad:Vigoria         2   2471    1236  1.6586 0.2282634    
N_Gemme:Defogl:Dirad  1   1623    1623  2.1789 0.1637185    
Residuals            13   9684     745                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.891
DIPROVE_2: -0.877
DIPROVE_3: n.s


Poliftot1B

Analysis of Variance Table

Response: Br_2008M[, 34]
                     Df Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1             1  86994   86994  5.0025 0.04347 *
DIPROVE_2             1  12036   12036  0.6921 0.42047  
DIPROVE_3             1   9606    9606  0.5524 0.47057  
N_Gemme               1   4524    4524  0.2601 0.61857  
Defogl                1  17005   17005  0.9779 0.34078  
Dirad                 1  62238   62238  3.5789 0.08100 .
Vigoria               2  13250    6625  0.3810 0.69059  
N_Gemme:Defogl        1   1627    1627  0.0935 0.76457  
N_Gemme:Dirad         1    399     399  0.0230 0.88189  
Defogl:Dirad          1  39791   39791  2.2881 0.15429  
N_Gemme:Vigoria       2   4489    2244  0.1291 0.88003  
Defogl:Vigoria        2 102136   51068  2.9366 0.08864 .
Dirad:Vigoria         2  21887   10943  0.6293 0.54845  
N_Gemme:Defogl:Dirad  1  23888   23888  1.3736 0.26222  
Residuals            13 226072   17390                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.527
DIPROVE_2: n.s
DIPROVE_3: n.s
```

Antoctot2B

Analysis of Variance Table

Response: Br_2008M[, 35]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 141977 | 141977 | 24.9173 | 0.0002465 | *** |
| DIPROVE_2 | 1 | 63701 | 63701 | 11.1797 | 0.0052854 | ** |
| DIPROVE_3 | 1 | 131682 | 131682 | 23.1105 | 0.0003423 | *** |
| N_Gemme | 1 | 12572 | 12572 | 2.2064 | 0.1612845 | |
| Defogl | 1 | 292603 | 292603 | 51.3526 | 7.303e-06 | *** |
| Dirad | 1 | 4371 | 4371 | 0.7670 | 0.3970290 | |
| Vigoria | 2 | 55476 | 27738 | 4.8681 | 0.0264216 | * |
| N_Gemme:Defogl | 1 | 345 | 345 | 0.0606 | 0.8094445 | |
| N_Gemme:Dirad | 1 | 374 | 374 | 0.0656 | 0.8018362 | |
| Defogl:Dirad | 1 | 12836 | 12836 | 2.2527 | 0.1572701 | |
| N_Gemme:Vigoria | 2 | 1166 | 583 | 0.1023 | 0.9034551 | |
| Defogl:Vigoria | 2 | 51832 | 25916 | 4.5483 | 0.0318064 | * |
| Dirad:Vigoria | 2 | 5936 | 2968 | 0.5209 | 0.6058608 | |
| N_Gemme:Defogl:Dirad | 1 | 11845 | 11845 | 2.0788 | 0.1730134 | |
| Residuals | 13 | 74073 | 5698 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.811
DIPROVE_2: -0.68
DIPROVE_3: 0.8

Poliftot2B

Analysis of Variance Table

Response: Br_2008M[, 36]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 294747 | 294747 | 2.7981 | 0.11825 | |
| DIPROVE_2 | 1 | 8870 | 8870 | 0.0842 | 0.77626 | |
| DIPROVE_3 | 1 | 526517 | 526517 | 4.9984 | 0.04354 | * |
| N_Gemme | 1 | 102081 | 102081 | 0.9691 | 0.34288 | |
| Defogl | 1 | 555629 | 555629 | 5.2748 | 0.03890 | * |
| Dirad | 1 | 327346 | 327346 | 3.1076 | 0.10140 | |
| Vigoria | 2 | 187037 | 93519 | 0.8878 | 0.43510 | |
| N_Gemme:Defogl | 1 | 5150 | 5150 | 0.0489 | 0.82845 | |
| N_Gemme:Dirad | 1 | 73 | 73 | 0.0007 | 0.97933 | |
| Defogl:Dirad | 1 | 130742 | 130742 | 1.2412 | 0.28542 | |
| N_Gemme:Vigoria | 2 | 25432 | 12716 | 0.1207 | 0.88727 | |
| Defogl:Vigoria | 2 | 309746 | 154873 | 1.4703 | 0.26568 | |
| Dirad:Vigoria | 2 | 137085 | 68543 | 0.6507 | 0.53786 | |
| N_Gemme:Defogl:Dirad | 1 | 60867 | 60867 | 0.5778 | 0.46073 | |
| Residuals | 13 | 1369379 | 105337 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.527

BROLIO 2008 IASMA

PvinacciaA

Analysis of Variance Table

Response: Br_2008M[, 11]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 934670 | 934670 | 16.3916 | 0.001380 | ** |
| IASMA_2 | 1 | 913720 | 913720 | 16.0242 | 0.001504 | ** |
| IASMA_3 | 1 | 168176 | 168176 | 2.9493 | 0.109624 | |
| N_Gemme | 1 | 6870 | 6870 | 0.1205 | 0.734071 | |
| Defogl | 1 | 78160 | 78160 | 1.3707 | 0.262705 | |
| Dirad | 1 | 60662 | 60662 | 1.0638 | 0.321149 | |
| Vigoria | 2 | 294087 | 147044 | 2.5787 | 0.113964 | |
| N_Gemme:Defogl | 1 | 59711 | 59711 | 1.0472 | 0.324827 | |
| N_Gemme:Dirad | 1 | 25095 | 25095 | 0.4401 | 0.518670 | |
| Defogl:Dirad | 1 | 278102 | 278102 | 4.8771 | 0.045783 | * |
| N_Gemme:Vigoria | 2 | 17949 | 8975 | 0.1574 | 0.855974 | |
| Defogl:Vigoria | 2 | 254963 | 127481 | 2.2357 | 0.146389 | |
| Dirad:Vigoria | 2 | 163254 | 81627 | 1.4315 | 0.274233 | |
| N_Gemme:Defogl:Dirad | 1 | 107966 | 107966 | 1.8934 | 0.192058 | |
| Residuals | 13 | 741278 | 57021 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.747
IASMA_2: 0.743
IASMA_3: n.s

DensMostoA

Analysis of Variance Table

Response: Br_2008M[, 12]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 1.3540e-04 | 1.3540e-04 | 6.7149 | 0.022372 | * |
| IASMA_2 | 1 | 2.7090e-04 | 2.7090e-04 | 13.4349 | 0.002852 | ** |
| IASMA_3 | 1 | 9.9390e-06 | 9.9390e-06 | 0.4929 | 0.495018 | |
| N_Gemme | 1 | 1.2200e-07 | 1.2200e-07 | 0.0061 | 0.939172 | |
| Defogl | 1 | 3.0847e-04 | 3.0847e-04 | 15.2981 | 0.001788 | ** |
| Dirad | 1 | 3.3160e-06 | 3.3160e-06 | 0.1644 | 0.691697 | |
| Vigoria | 2 | 2.6104e-04 | 1.3052e-04 | 6.4729 | 0.011199 | * |
| N_Gemme:Defogl | 1 | 1.4353e-05 | 1.4353e-05 | 0.7118 | 0.414095 | |
| N_Gemme:Dirad | 1 | 1.9721e-05 | 1.9721e-05 | 0.9780 | 0.340734 | |
| Defogl:Dirad | 1 | 2.1657e-05 | 2.1657e-05 | 1.0740 | 0.318930 | |
| N_Gemme:Vigoria | 2 | 7.9485e-05 | 3.9743e-05 | 1.9710 | 0.178800 | |
| Defogl:Vigoria | 2 | 9.6400e-06 | 4.8200e-06 | 0.2390 | 0.790763 | |
| Dirad:Vigoria | 2 | 5.7625e-05 | 2.8813e-05 | 1.4289 | 0.274817 | |
| N_Gemme:Defogl:Dirad | 1 | 1.2000e-08 | 1.2000e-08 | 0.0006 | 0.980896 | |
| Residuals | 13 | 2.6213e-04 | 2.0164e-05 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.584
IASMA_2: -0.713
IASMA_3: n.s

BrixA

Analysis of Variance Table

Response: Br_2008M[, 13]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 6.1311 | 6.1311 | 6.5483 | 0.023786 | * |
| IASMA_2 | 1 | 12.9284 | 12.9284 | 13.8081 | 0.002590 | ** |
| IASMA_3 | 1 | 0.3244 | 0.3244 | 0.3464 | 0.566228 | |
| N_Gemme | 1 | 0.0261 | 0.0261 | 0.0279 | 0.869903 | |
| Defogl | 1 | 14.5285 | 14.5285 | 15.5170 | 0.001696 | ** |
| Dirad | 1 | 0.1008 | 0.1008 | 0.1077 | 0.748022 | |
| Vigoria | 2 | 12.7517 | 6.3758 | 6.8097 | 0.009481 | ** |
| N_Gemme:Defogl | 1 | 0.5133 | 0.5133 | 0.5482 | 0.472216 | |
| N_Gemme:Dirad | 1 | 0.9839 | 0.9839 | 1.0508 | 0.324018 | |
| Defogl:Dirad | 1 | 0.8782 | 0.8782 | 0.9380 | 0.350473 | |
| N_Gemme:Vigoria | 2 | 3.7236 | 1.8618 | 1.9885 | 0.176421 | |
| Defogl:Vigoria | 2 | 0.4173 | 0.2087 | 0.2229 | 0.803212 | |
| Dirad:Vigoria | 2 | 2.6482 | 1.3241 | 1.4142 | 0.278155 | |
| N_Gemme:Defogl:Dirad | 1 | 0.0001 | 0.0001 | 0.0001 | 0.993965 | |
| Residuals | 13 | 12.1718 | 0.9363 | | | |

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.579
IASMA_2: -0.718
IASMA_3: n.s

PhA

Analysis of Variance Table

Response: Br_2008M[, 14]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.000004 | 0.0000043 | 0.0013 | 0.971734 | |
| IASMA_2 | 1 | 0.014376 | 0.0143761 | 4.3407 | 0.057515 | . |
| IASMA_3 | 1 | 0.007040 | 0.0070403 | 2.1258 | 0.168574 | |
| N_Gemme | 1 | 0.000025 | 0.0000254 | 0.0077 | 0.931538 | |
| Defogl | 1 | 0.000227 | 0.0002270 | 0.0685 | 0.797565 | |
| Dirad | 1 | 0.000594 | 0.0005939 | 0.1793 | 0.678875 | |
| Vigoria | 2 | 0.051760 | 0.0258798 | 7.8141 | 0.005908 | ** |
| N_Gemme:Defogl | 1 | 0.000041 | 0.0000412 | 0.0124 | 0.912891 | |
| N_Gemme:Dirad | 1 | 0.014324 | 0.0143240 | 4.3250 | 0.057909 | . |
| Defogl:Dirad | 1 | 0.008790 | 0.0087903 | 2.6541 | 0.127261 | |
| N_Gemme:Vigoria | 2 | 0.005572 | 0.0027859 | 0.8412 | 0.453378 | |
| Defogl:Vigoria | 2 | 0.002425 | 0.0012127 | 0.3662 | 0.700318 | |
| Dirad:Vigoria | 2 | 0.005847 | 0.0029235 | 0.8827 | 0.437052 | |
| N_Gemme:Defogl:Dirad | 1 | 0.001912 | 0.0019116 | 0.5772 | 0.460969 | |
| Residuals | 13 | 0.043055 | 0.0033119 | | | |

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

AcTitolA

Analysis of Variance Table

Response: Br_2008M[, 15]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.0381 | 0.0381 | 0.5984 | 0.4530319 | |
| IASMA_2 | 1 | 1.0370 | 1.0370 | 16.2872 | 0.0014137 | ** |
| IASMA_3 | 1 | 1.5958 | 1.5958 | 25.0625 | 0.0002403 | *** |
| N_Gemme | 1 | 0.0569 | 0.0569 | 0.8936 | 0.3617550 | |
| Defogl | 1 | 0.0317 | 0.0317 | 0.4986 | 0.4925784 | |
| Dirad | 1 | 0.0001 | 0.0001 | 0.0020 | 0.9645829 | |
| Vigoria | 2 | 6.3417 | 3.1708 | 49.7997 | 8.047e-07 | *** |
| N_Gemme:Defogl | 1 | 0.0300 | 0.0300 | 0.4719 | 0.5041824 | |
| N_Gemme:Dirad | 1 | 0.5153 | 0.5153 | 8.0935 | 0.0137910 | * |
| Defogl:Dirad | 1 | 0.0279 | 0.0279 | 0.4377 | 0.5197866 | |
| N_Gemme:Vigoria | 2 | 0.1662 | 0.0831 | 1.3049 | 0.3044611 | |
| Defogl:Vigoria | 2 | 0.4356 | 0.2178 | 3.4207 | 0.0640358 | . |
| Dirad:Vigoria | 2 | 0.5167 | 0.2583 | 4.0572 | 0.0427429 | * |
| N_Gemme:Defogl:Dirad | 1 | 0.0054 | 0.0054 | 0.0850 | 0.7752927 | |
| Residuals | 13 | 0.8277 | 0.0637 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: 0.746
IASMA_3: 0.811

AcTartA

Analysis of Variance Table

Response: Br_2008M[, 16]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 2.4538 | 2.45383 | 37.7050 | 3.542e-05 | *** |
| IASMA_2 | 1 | 0.1155 | 0.11552 | 1.7751 | 0.205641 | |
| IASMA_3 | 1 | 0.6481 | 0.64807 | 9.9581 | 0.007589 | ** |
| N_Gemme | 1 | 0.3649 | 0.36492 | 5.6073 | 0.034065 | * |
| Defogl | 1 | 0.0001 | 0.00013 | 0.0021 | 0.964402 | |
| Dirad | 1 | 0.0042 | 0.00425 | 0.0652 | 0.802408 | |
| Vigoria | 2 | 4.0890 | 2.04450 | 31.4152 | 1.051e-05 | *** |
| N_Gemme:Defogl | 1 | 0.0011 | 0.00115 | 0.0176 | 0.896421 | |
| N_Gemme:Dirad | 1 | 0.3401 | 0.34011 | 5.2261 | 0.039671 | * |
| Defogl:Dirad | 1 | 0.0024 | 0.00240 | 0.0369 | 0.850626 | |
| N_Gemme:Vigoria | 2 | 0.0951 | 0.04756 | 0.7308 | 0.500284 | |
| Defogl:Vigoria | 2 | 0.3466 | 0.17330 | 2.6629 | 0.107334 | |
| Dirad:Vigoria | 2 | 0.7617 | 0.38084 | 5.8518 | 0.015406 | * |
| N_Gemme:Defogl:Dirad | 1 | 0.0012 | 0.00120 | 0.0184 | 0.894105 | |
| Residuals | 13 | 0.8460 | 0.06508 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.862
IASMA_2: n.s
IASMA_3: 0.659

AcMalicoA

Analysis of Variance Table

Response: Br_2008M[, 17]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 2.97386 | 2.97386 | 68.8972 | 1.49e-06 | *** |
| IASMA_2 | 1 | 0.65263 | 0.65263 | 15.1198 | 0.001867 | ** |

```
IASMA_3              1 0.11634 0.11634  2.6953 0.124601
N_Gemme              1 0.08766 0.08766  2.0309 0.177689
Defogl               1 0.00614 0.00614  0.1422 0.712220
Dirad                1 0.00003 0.00003  0.0008 0.977856
Vigoria              2 0.89735 0.44868 10.3947 0.002012 **
N_Gemme:Defogl       1 0.10156 0.10156  2.3529 0.149024
N_Gemme:Dirad        1 0.01137 0.01137  0.2634 0.616373
Defogl:Dirad         1 0.00105 0.00105  0.0243 0.878559
N_Gemme:Vigoria      2 0.01357 0.00679  0.1572 0.856100
Defogl:Vigoria       2 0.09157 0.04578  1.0607 0.374352
Dirad:Vigoria        2 0.06743 0.03372  0.7811 0.478245
N_Gemme:Defogl:Dirad  1 0.00663 0.00663  0.1536 0.701479
Residuals           13 0.56113 0.04316
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.917
IASMA_2: -0.733
IASMA_3: n.s


KA

Analysis of Variance Table

Response: Br_2008M[, 18]
                    Df   Sum Sq   Mean Sq F value Pr(>F)
IASMA_1              1 0.003065 0.0030652  0.5037 0.4904
IASMA_2              1 0.002999 0.0029993  0.4929 0.4950
IASMA_3              1 0.021649 0.0216487  3.5577 0.0818 .
N_Gemme              1 0.000560 0.0005601  0.0920 0.7664
Defogl               1 0.005294 0.0052940  0.8700 0.3680
Dirad                1 0.007500 0.0075000  1.2325 0.2870
Vigoria              2 0.031801 0.0159005  2.6131 0.1112
N_Gemme:Defogl       1 0.011838 0.0118384  1.9455 0.1864
N_Gemme:Dirad        1 0.000253 0.0002532  0.0416 0.8415
Defogl:Dirad         1 0.002790 0.0027898  0.4585 0.5102
N_Gemme:Vigoria      2 0.006856 0.0034280  0.5634 0.5826
Defogl:Vigoria       2 0.011686 0.0058428  0.9602 0.4084
Dirad:Vigoria        2 0.011089 0.0055444  0.9112 0.4263
N_Gemme:Defogl:Dirad  1 0.008159 0.0081585  1.3408 0.2677
Residuals           13 0.079105 0.0060850
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


ApaA

Analysis of Variance Table

Response: Br_2008M[, 19]
                    Df Sum Sq Mean Sq F value   Pr(>F)
IASMA_1              1 3809.4  3809.4 11.7790 0.004459 **
IASMA_2              1 3501.0  3501.0 10.8256 0.005857 **
IASMA_3              1   56.8    56.8  0.1758 0.681869
N_Gemme              1    1.6     1.6  0.0049 0.945218
Defogl               1 1336.5  1336.5  4.1325 0.063012 .
```

```
Dirad                 1   39.4    39.4  0.1218 0.732697
Vigoria               2 3793.3  1896.7  5.8647 0.015302 *
N_Gemme:Defogl        1   18.7    18.7  0.0578 0.813805
N_Gemme:Dirad         1  110.9   110.9  0.3428 0.568235
Defogl:Dirad          1   49.1    49.1  0.1518 0.703107
N_Gemme:Vigoria       2  473.1   236.6  0.7315 0.499991
Defogl:Vigoria        2  121.1    60.6  0.1872 0.831434
Dirad:Vigoria         2  854.0   427.0  1.3203 0.300597
N_Gemme:Defogl:Dirad  1   85.3    85.3  0.2636 0.616257
Residuals            13 4204.3   323.4
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.689
IASMA_2: 0.674
IASMA_3: n.s
```

Antoctot1A

Analysis of Variance Table

```
Response: Br_2008M[, 20]
                     Df Sum Sq Mean Sq F value   Pr(>F)
IASMA_1               1  59918   59918 12.3081 0.003852 **
IASMA_2               1  76070   76070 15.6259 0.001652 **
IASMA_3               1  32100   32100  6.5938 0.023389 *
N_Gemme               1    315     315  0.0646 0.803281
Defogl                1  14008   14008  2.8775 0.113625
Dirad                 1   1801    1801  0.3700 0.553494
Vigoria               2  33917   16959  3.4836 0.061458 .
N_Gemme:Defogl        1  11017   11017  2.2631 0.156395
N_Gemme:Dirad         1   2144    2144  0.4404 0.518503
Defogl:Dirad          1    859     859  0.1765 0.681280
N_Gemme:Vigoria       2   9716    4858  0.9979 0.395215
Defogl:Vigoria        2  12536    6268  1.2875 0.308925
Dirad:Vigoria         2   7070    3535  0.7261 0.502403
N_Gemme:Defogl:Dirad  1    272     272  0.0559 0.816826
Residuals            13  63287    4868
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.697
IASMA_2: -0.739
IASMA_3: 0.58
```

Poliftot1A

Analysis of Variance Table

```
Response: Br_2008M[, 21]
                     Df Sum Sq Mean Sq F value   Pr(>F)
IASMA_1               1 175874  175874  8.2294 0.013176 *
IASMA_2               1 281626  281626 13.1777 0.003051 **
IASMA_3               1  36186   36186  1.6932 0.215772
N_Gemme               1   5094    5094  0.2384 0.633525
Defogl                1  83958   83958  3.9285 0.069021 .
Dirad                 1   7858    7858  0.3677 0.554701
Vigoria               2 101228   50614  2.3683 0.132733
N_Gemme:Defogl        1   6386    6386  0.2988 0.593894
```

```
N_Gemme:Dirad         1   4706    4706  0.2202 0.646657
Defogl:Dirad          1   1871    1871  0.0875 0.771995
N_Gemme:Vigoria       2  37334   18667  0.8734 0.440636
Defogl:Vigoria        2   2137    1069  0.0500 0.951413
Dirad:Vigoria         2  41585   20792  0.9729 0.403884
N_Gemme:Defogl:Dirad  1   8280    8280  0.3875 0.544407
Residuals            13 277829   21371
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
IASMA_1: 0.623
IASMA_2: -0.71
IASMA_3: n.s
```

Antoctot2A

Analysis of Variance Table

```
Response: Br_2008M[, 22]
                     Df Sum Sq Mean Sq F value    Pr(>F)
IASMA_1               1 283665  283665 32.4018 7.388e-05 ***
IASMA_2               1 284694  284694 32.5194 7.262e-05 ***
IASMA_3               1  18997   18997  2.1700  0.164525
N_Gemme               1   3898    3898  0.4452  0.516289
Defogl                1 111383  111383 12.7228  0.003443 **
Dirad                 1    864     864  0.0987  0.758390
Vigoria               2  47844   23922  2.7325  0.102179
N_Gemme:Defogl        1  24404   24404  2.7876  0.118885
N_Gemme:Dirad         1    300     300  0.0342  0.856037
Defogl:Dirad          1  11374   11374  1.2992  0.274932
N_Gemme:Vigoria       2   2515    1257  0.1436  0.867567
Defogl:Vigoria        2 116866   58433  6.6745  0.010131 *
Dirad:Vigoria         2  14601    7300  0.8339  0.456311
N_Gemme:Defogl:Dirad  1    465     465  0.0531  0.821280
Residuals            13 113810    8755
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
IASMA_1: 0.845
IASMA_2: -0.845
IASMA_3: n.s
```

Poliftot2A

Analysis of Variance Table

```
Response: Br_2008M[, 23]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IASMA_1               1  986588  986588  9.5580 0.008584 **
IASMA_2               1  985760  985760  9.5500 0.008606 **
IASMA_3               1    3380    3380  0.0327 0.859197
N_Gemme               1    2453    2453  0.0238 0.879842
Defogl                1  595744  595744  5.7715 0.031941 *
Dirad                 1    5200    5200  0.0504 0.825904
Vigoria               2  153673   76837  0.7444 0.494225
N_Gemme:Defogl        1    1192    1192  0.0115 0.916065
N_Gemme:Dirad         1    6665    6665  0.0646 0.803385
Defogl:Dirad          1   27620   27620  0.2676 0.613649
N_Gemme:Vigoria       2   34081   17040  0.1651 0.849571
```

```
Defogl:Vigoria        2   83661   41830  0.4052 0.674949
Dirad:Vigoria         2   50752   25376  0.2458 0.785600
N_Gemme:Defogl:Dirad  1   28225   28225  0.2734 0.609830
Residuals            13 1341872  103221
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.651
IASMA_2: -0.651
IASMA_3: n.s


PvinacciaB

Analysis of Variance Table

Response: Br_2008M[, 24]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1               1 4361743 4361743 88.7655 3.576e-07 ***
IASMA_2               1 2123324 2123324 43.2116 1.787e-05 ***
IASMA_3               1 1247892 1247892 25.3958 0.0002266 ***
N_Gemme               1  120861  120861  2.4596 0.1408174
Defogl                1  425230  425230  8.6538 0.0114522 *
Dirad                 1  158439  158439  3.2244 0.0958179 .
Vigoria               2  729760  364880  7.4256 0.0070654 **
N_Gemme:Defogl        1   25684   25684  0.5227 0.4824985
N_Gemme:Dirad         1    2070    2070  0.0421 0.8405430
Defogl:Dirad          1  203984  203984  4.1513 0.0624924 .
N_Gemme:Vigoria       2   28917   14458  0.2942 0.7499295
Defogl:Vigoria        2    1294     647  0.0132 0.9869373
Dirad:Vigoria         2   18006    9003  0.1832 0.8346994
N_Gemme:Defogl:Dirad  1   55331   55331  1.1260 0.3079373
Residuals            13  638791   49138
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.934
IASMA_2: 0.877
IASMA_3: -0.813


DensMostoB

Analysis of Variance Table

Response: Br_2008M[, 25]
                     Df     Sum Sq    Mean Sq F value    Pr(>F)
IASMA_1               1 0.00012447 0.00012447  8.9082 0.0105453 *
IASMA_2               1 0.00025103 0.00025103 17.9666 0.0009673 ***
IASMA_3               1 0.00005455 0.00005455  3.9043 0.0697791 .
N_Gemme               1 0.00000418 0.00000418  0.2990 0.5937694
Defogl                1 0.00037227 0.00037227 26.6433 0.0001829 ***
Dirad                 1 0.00000036 0.00000036  0.0257 0.8750230
Vigoria               2 0.00009881 0.00004941  3.5361 0.0593971 .
N_Gemme:Defogl        1 0.00000403 0.00000403  0.2887 0.6001029
N_Gemme:Dirad         1 0.00002866 0.00002866  2.0510 0.1757110
Defogl:Dirad          1 0.00000474 0.00000474  0.3394 0.5701673
N_Gemme:Vigoria       2 0.00000239 0.00000120  0.0856 0.9184508
Defogl:Vigoria        2 0.00011420 0.00005710  4.0866 0.0419767 *
Dirad:Vigoria         2 0.00005860 0.00002930  2.0971 0.1624246
N_Gemme:Defogl:Dirad  1 0.00001028 0.00001028  0.7355 0.4066299
```

```
Residuals           13 0.00018164 0.00001397
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.638
IASMA_2: -0.762
IASMA_3: n.s
```

BrixB

Analysis of Variance Table

```
Response: Br_2008M[, 26]
                    Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1              1  5.5572  5.5572  8.8669 0.0106869 *
IASMA_2              1 11.1482 11.1482 17.7877 0.0010061 **
IASMA_3              1  2.6246  2.6246  4.1877 0.0614953 .
N_Gemme              1  0.1984  0.1984  0.3166 0.5832528
Defogl               1 17.9101 17.9101 28.5769 0.0001330 ***
Dirad                1  0.0007  0.0007  0.0012 0.9734217
Vigoria              2  4.1544  2.0772  3.3143 0.0686833 .
N_Gemme:Defogl       1  0.1431  0.1431  0.2283 0.6407374
N_Gemme:Dirad        1  1.3354  1.3354  2.1308 0.1681067
Defogl:Dirad         1  0.1593  0.1593  0.2541 0.6226354
N_Gemme:Vigoria      2  0.1292  0.0646  0.1031 0.9027959
Defogl:Vigoria       2  5.1467  2.5734  4.1060 0.0414819 *
Dirad:Vigoria        2  2.8855  1.4427  2.3020 0.1393654
N_Gemme:Defogl:Dirad  1  0.4347  0.4347  0.6936 0.4199853
Residuals           13  8.1476  0.6267
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.637
IASMA_2: -0.76
IASMA_3: n.s
```

PhB

Analysis of Variance Table

```
Response: Br_2008M[, 27]
                    Df    Sum Sq   Mean Sq F value   Pr(>F)
IASMA_1              1 0.0063731 0.0063731  3.1560 0.099044 .
IASMA_2              1 0.0047268 0.0047268  2.3407 0.149993
IASMA_3              1 0.0131613 0.0131613  6.5175 0.024058 *
N_Gemme              1 0.0011888 0.0011888  0.5887 0.456631
Defogl               1 0.0206348 0.0206348 10.2184 0.007013 **
Dirad                1 0.0003734 0.0003734  0.1849 0.674250
Vigoria              2 0.0264656 0.0132328  6.5529 0.010761 *
N_Gemme:Defogl       1 0.0006376 0.0006376  0.3157 0.583740
N_Gemme:Dirad        1 0.0044504 0.0044504  2.2038 0.161506
Defogl:Dirad         1 0.0002747 0.0002747  0.1360 0.718208
N_Gemme:Vigoria      2 0.0023320 0.0011660  0.5774 0.575114
Defogl:Vigoria       2 0.0079811 0.0039905  1.9761 0.178097
Dirad:Vigoria        2 0.0032391 0.0016196  0.8020 0.469418
N_Gemme:Defogl:Dirad  1 0.0028469 0.0028469  1.4098 0.256331
Residuals           13 0.0262519 0.0020194
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
IASMA_1: n.s
IASMA_2: n.s
IASMA_3: 0.578


AcTitolB

Analysis of Variance Table

Response: Br_2008M[, 28]
                     Df Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1               1 0.3242  0.3242  1.5509 0.2349838    
IASMA_2               1 0.0459  0.0459  0.2196 0.6471267    
IASMA_3               1 2.2170  2.2170 10.6053 0.0062487 ** 
N_Gemme               1 0.0226  0.0226  0.1081 0.7475016    
Defogl                1 0.1123  0.1123  0.5372 0.4766098    
Dirad                 1 0.0018  0.0018  0.0084 0.9282017    
Vigoria               2 8.3808  4.1904 20.0452 0.0001067 ***
N_Gemme:Defogl        1 0.0090  0.0090  0.0430 0.8388828    
N_Gemme:Dirad         1 0.0883  0.0883  0.4222 0.5271572    
Defogl:Dirad          1 0.0248  0.0248  0.1185 0.7362105    
N_Gemme:Vigoria       2 0.4283  0.2141  1.0244 0.3862656    
Defogl:Vigoria        2 0.1123  0.0561  0.2685 0.7686325    
Dirad:Vigoria         2 0.1515  0.0758  0.3625 0.7027758    
N_Gemme:Defogl:Dirad  1 0.1133  0.1133  0.5420 0.4746993    
Residuals            13 2.7176  0.2090                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: -0.67


AcTartB

Analysis of Variance Table

Response: Br_2008M[, 29]
                     Df Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1               1 2.5615 2.56152 21.6928 0.0004483 ***
IASMA_2               1 0.1093 0.10927  0.9254 0.3536252    
IASMA_3               1 1.3917 1.39166 11.7856 0.0044509 ** 
N_Gemme               1 0.0608 0.06085  0.5153 0.4855515    
Defogl                1 0.7206 0.72063  6.1028 0.0281145 *  
Dirad                 1 0.0291 0.02906  0.2461 0.6281318    
Vigoria               2 5.5816 2.79082 23.6347 4.677e-05 ***
N_Gemme:Defogl        1 0.0088 0.00877  0.0742 0.7895518    
N_Gemme:Dirad         1 0.0428 0.04279  0.3623 0.5575585    
Defogl:Dirad          1 0.0059 0.00587  0.0497 0.8269985    
N_Gemme:Vigoria       2 0.0876 0.04381  0.3710 0.6971202    
Defogl:Vigoria        2 0.1028 0.05139  0.4352 0.6562182    
Dirad:Vigoria         2 0.0589 0.02943  0.2492 0.7830460    
N_Gemme:Defogl:Dirad  1 0.0168 0.01676  0.1419 0.7124305    
Residuals            13 1.5351 0.11808                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.791
IASMA_2: n.s
```

IASMA_3: -0.69

AcMalicoB

Analysis of Variance Table

Response: Br_2008M[, 30]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 2.55037 | 2.55037 | 17.1312 | 0.001165 | ** |
| IASMA_2 | 1 | 0.35269 | 0.35269 | 2.3691 | 0.147739 | |
| IASMA_3 | 1 | 0.23987 | 0.23987 | 1.6113 | 0.226570 | |
| N_Gemme | 1 | 0.01264 | 0.01264 | 0.0849 | 0.775392 | |
| Defogl | 1 | 0.09370 | 0.09370 | 0.6294 | 0.441824 | |
| Dirad | 1 | 0.00006 | 0.00006 | 0.0004 | 0.983654 | |
| Vigoria | 2 | 1.22289 | 0.61145 | 4.1072 | 0.041451 | * |
| N_Gemme:Defogl | 1 | 0.01224 | 0.01224 | 0.0822 | 0.778805 | |
| N_Gemme:Dirad | 1 | 0.13611 | 0.13611 | 0.9143 | 0.356424 | |
| Defogl:Dirad | 1 | 0.01498 | 0.01498 | 0.1006 | 0.756121 | |
| N_Gemme:Vigoria | 2 | 0.28716 | 0.14358 | 0.9644 | 0.406870 | |
| Defogl:Vigoria | 2 | 0.12226 | 0.06113 | 0.4106 | 0.671557 | |
| Dirad:Vigoria | 2 | 0.07147 | 0.03574 | 0.2401 | 0.789996 | |
| N_Gemme:Defogl:Dirad | 1 | 0.01073 | 0.01073 | 0.0721 | 0.792512 | |
| Residuals | 13 | 1.93534 | 0.14887 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.754
IASMA_2: n.s
IASMA_3: n.s

KB

Analysis of Variance Table

Response: Br_2008M[, 31]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.000056 | 0.000056 | 0.0072 | 0.933535 | |
| IASMA_2 | 1 | 0.024599 | 0.024599 | 3.1949 | 0.097194 | . |
| IASMA_3 | 1 | 0.012268 | 0.012268 | 1.5934 | 0.229023 | |
| N_Gemme | 1 | 0.009129 | 0.009129 | 1.1857 | 0.295974 | |
| Defogl | 1 | 0.050033 | 0.050033 | 6.4982 | 0.024231 | * |
| Dirad | 1 | 0.002287 | 0.002287 | 0.2971 | 0.594953 | |
| Vigoria | 2 | 0.117561 | 0.058780 | 7.6343 | 0.006414 | ** |
| N_Gemme:Defogl | 1 | 0.000480 | 0.000480 | 0.0623 | 0.806775 | |
| N_Gemme:Dirad | 1 | 0.010491 | 0.010491 | 1.3626 | 0.264060 | |
| Defogl:Dirad | 1 | 0.004578 | 0.004578 | 0.5946 | 0.454425 | |
| N_Gemme:Vigoria | 2 | 0.012542 | 0.006271 | 0.8145 | 0.464237 | |
| Defogl:Vigoria | 2 | 0.044101 | 0.022051 | 2.8639 | 0.093211 | . |
| Dirad:Vigoria | 2 | 0.014684 | 0.007342 | 0.9536 | 0.410736 | |
| N_Gemme:Defogl:Dirad | 1 | 0.006328 | 0.006328 | 0.8219 | 0.381132 | |
| Residuals | 13 | 0.100094 | 0.007700 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

ApaB

Analysis of Variance Table

Response: Br_2008M[, 32]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 5680.2 | 5680.2 | 22.8206 | 0.0003614 | *** |
| IASMA_2 | 1 | 286.7 | 286.7 | 1.1518 | 0.3026894 | |
| IASMA_3 | 1 | 0.1 | 0.1 | 0.0003 | 0.9855368 | |
| N_Gemme | 1 | 1.0 | 1.0 | 0.0041 | 0.9497266 | |
| Defogl | 1 | 2201.2 | 2201.2 | 8.8437 | 0.0107673 | * |
| Dirad | 1 | 4.4 | 4.4 | 0.0177 | 0.8960949 | |
| Vigoria | 2 | 2647.5 | 1323.8 | 5.3183 | 0.0205273 | * |
| N_Gemme:Defogl | 1 | 112.9 | 112.9 | 0.4535 | 0.5124950 | |
| N_Gemme:Dirad | 1 | 1332.1 | 1332.1 | 5.3516 | 0.0377122 | * |
| Defogl:Dirad | 1 | 0.2 | 0.2 | 0.0008 | 0.9777663 | |
| N_Gemme:Vigoria | 2 | 125.2 | 62.6 | 0.2516 | 0.7812714 | |
| Defogl:Vigoria | 2 | 1015.8 | 507.9 | 2.0405 | 0.1695499 | |
| Dirad:Vigoria | 2 | 264.8 | 132.4 | 0.5318 | 0.5997745 | |
| N_Gemme:Defogl:Dirad | 1 | 597.4 | 597.4 | 2.3999 | 0.1453355 | |
| Residuals | 13 | 3235.8 | 248.9 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.798
IASMA_2: n.s
IASMA_3: n.s

Antoctot1B

Analysis of Variance Table

Response: Br_2008M[, 33]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 56645 | 56645 | 44.5608 | 1.527e-05 | *** |
| IASMA_2 | 1 | 4637 | 4637 | 3.6480 | 0.078450 | . |
| IASMA_3 | 1 | 3286 | 3286 | 2.5846 | 0.131914 | |
| N_Gemme | 1 | 6532 | 6532 | 5.1386 | 0.041108 | * |
| Defogl | 1 | 18644 | 18644 | 14.6663 | 0.002086 | ** |
| Dirad | 1 | 144 | 144 | 0.1133 | 0.741757 | |
| Vigoria | 2 | 7473 | 3736 | 2.9394 | 0.088473 | . |
| N_Gemme:Defogl | 1 | 0 | 0 | 0.0000 | 0.997819 | |
| N_Gemme:Dirad | 1 | 2401 | 2401 | 1.8890 | 0.192545 | |
| Defogl:Dirad | 1 | 7160 | 7160 | 5.6323 | 0.033731 | * |
| N_Gemme:Vigoria | 2 | 97 | 48 | 0.0381 | 0.962735 | |
| Defogl:Vigoria | 2 | 15186 | 7593 | 5.9731 | 0.014458 | * |
| Dirad:Vigoria | 2 | 2007 | 1003 | 0.7893 | 0.474784 | |
| N_Gemme:Defogl:Dirad | 1 | 2785 | 2785 | 2.1909 | 0.162653 | |
| Residuals | 13 | 16526 | 1271 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.88
IASMA_2: n.s
IASMA_3: n.s

Poliftot1B

Analysis of Variance Table

```
Response: Br_2008M[, 34]
                     Df Sum Sq Mean Sq F value  Pr(>F)  
IASMA_1               1  65518   65518  3.9186 0.06933 .
IASMA_2               1   1515    1515  0.0906 0.76815  
IASMA_3               1   3183    3183  0.1904 0.66976  
N_Gemme               1   3578    3578  0.2140 0.65129  
Defogl                1  45050   45050  2.6944 0.12466  
Dirad                 1  39496   39496  2.3622 0.14828  
Vigoria               2  12408    6204  0.3710 0.69709  
N_Gemme:Defogl        1   4675    4675  0.2796 0.60586  
N_Gemme:Dirad         1    381     381  0.0228 0.88239  
Defogl:Dirad          1  73486   73486  4.3951 0.05617 .
N_Gemme:Vigoria       2   1272     636  0.0381 0.96277  
Defogl:Vigoria        2 129358   64679  3.8684 0.04806 *
Dirad:Vigoria         2  17964    8982  0.5372 0.59682  
N_Gemme:Defogl:Dirad  1  10696   10696  0.6397 0.43819  
Residuals            13 217359   16720                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


Antoctot2B

Analysis of Variance Table

Response: Br_2008M[, 35]
                     Df Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1               1 274970  274970 46.9085 1.172e-05 ***
IASMA_2               1   2389    2389  0.4076 0.5342719    
IASMA_3               1   2799    2799  0.4774 0.5017402    
N_Gemme               1   1310    1310  0.2235 0.6442121    
Defogl                1 223389  223389 38.1091 3.360e-05 ***
Dirad                 1   4230    4230  0.7216 0.4109757    
Vigoria               2 177391   88695 15.1310 0.0004036 ***
N_Gemme:Defogl        1   2526    2526  0.4310 0.5229583    
N_Gemme:Dirad         1  15793   15793  2.6943 0.1246677    
Defogl:Dirad          1  30972   30972  5.2837 0.0387572 *  
N_Gemme:Vigoria       2   1334     667  0.1138 0.8933417    
Defogl:Vigoria        2  38182   19091  3.2568 0.0713568 .  
Dirad:Vigoria         2   5663    2831  0.4830 0.6275544    
N_Gemme:Defogl:Dirad  1   3637    3637  0.6205 0.4449923    
Residuals            13  76204    5862                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.885
IASMA_2: n.s
IASMA_3: n.s


Poliftot2B

Analysis of Variance Table

Response: Br_2008M[, 36]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
```

| | | | | | | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 320660 | 320660 | 3.7796 | 0.07385 | . |
| IASMA_2 | 1 | 142502 | 142502 | 1.6797 | 0.21751 | |
| IASMA_3 | 1 | 238089 | 238089 | 2.8063 | 0.11777 | |
| N_Gemme | 1 | 27606 | 27606 | 0.3254 | 0.57811 | |
| Defogl | 1 | 724083 | 724083 | 8.5347 | 0.01191 | * |
| Dirad | 1 | 134884 | 134884 | 1.5899 | 0.22951 | |
| Vigoria | 2 | 525172 | 262586 | 3.0951 | 0.07955 | . |
| N_Gemme:Defogl | 1 | 67061 | 67061 | 0.7904 | 0.39012 | |
| N_Gemme:Dirad | 1 | 1167 | 1167 | 0.0138 | 0.90843 | |
| Defogl:Dirad | 1 | 296004 | 296004 | 3.4890 | 0.08448 | . |
| N_Gemme:Vigoria | 2 | 15046 | 7523 | 0.0887 | 0.91569 | |
| Defogl:Vigoria | 2 | 310061 | 155031 | 1.8273 | 0.19983 | |
| Dirad:Vigoria | 2 | 58769 | 29385 | 0.3464 | 0.71359 | |
| N_Gemme:Defogl:Dirad | 1 | 76673 | 76673 | 0.9037 | 0.35912 | |
| Residuals | 13 | 1102922 | 84840 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

BROLIO 2009M IBIMET

PvinacciaA

Analysis of Variance Table

Response: Br_2009M[, 11]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 4218841 | 4218841 | 66.9587 | 1.745e-06 | *** |
| IBIMET_2 | 1 | 421987 | 421987 | 6.6975 | 0.022515 | * |
| IBIMET_3 | 1 | 36568 | 36568 | 0.5804 | 0.459760 | |
| N_Gemme | 1 | 57724 | 57724 | 0.9162 | 0.355948 | |
| Defogl | 1 | 58024 | 58024 | 0.9209 | 0.354742 | |
| Dirad | 1 | 1007003 | 1007003 | 15.9825 | 0.001518 | ** |
| Vigoria | 2 | 570029 | 285014 | 4.5236 | 0.032273 | * |
| N_Gemme:Defogl | 1 | 17068 | 17068 | 0.2709 | 0.611488 | |
| N_Gemme:Dirad | 1 | 1145 | 1145 | 0.0182 | 0.894830 | |
| Defogl:Dirad | 1 | 50637 | 50637 | 0.8037 | 0.386298 | |
| N_Gemme:Vigoria | 2 | 78059 | 39030 | 0.6195 | 0.553393 | |
| Defogl:Vigoria | 2 | 395452 | 197726 | 3.1382 | 0.077263 | . |
| Dirad:Vigoria | 2 | 30717 | 15359 | 0.2438 | 0.787177 | |
| N_Gemme:Defogl:Dirad | 1 | 205039 | 205039 | 3.2542 | 0.094450 | . |
| Residuals | 13 | 819086 | 63007 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.915
IBIMET_2: -0.583
IBIMET_3: n.s

DensMostoA

Analysis of Variance Table

Response: Br_2009M[, 12]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 0.00059329 | 0.00059329 | 48.8408 | 9.501e-06 | *** |

```
IBIMET_2             1 0.00002103 0.00002103  1.7312  0.210992
IBIMET_3             1 0.00000769 0.00000769  0.6328  0.440610
N_Gemme              1 0.00000266 0.00000266  0.2186  0.647866
Defogl               1 0.00001472 0.00001472  1.2121  0.290887
Dirad                1 0.00003937 0.00003937  3.2409  0.095057 .
Vigoria              2 0.00038141 0.00019070 15.6991  0.000341 ***
N_Gemme:Defogl       1 0.00008706 0.00008706  7.1673  0.019003 *
N_Gemme:Dirad        1 0.00001684 0.00001684  1.3866  0.260092
Defogl:Dirad         1 0.00005413 0.00005413  4.4562  0.054711 .
N_Gemme:Vigoria      2 0.00002326 0.00001163  0.9575  0.409328
Defogl:Vigoria       2 0.00006879 0.00003440  2.8316  0.095328 .
Dirad:Vigoria        2 0.00005510 0.00002755  2.2681  0.142904
N_Gemme:Defogl:Dirad  1 0.00000054 0.00000054  0.0444  0.836308
Residuals           13 0.00015792 0.00001215
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.889
IBIMET_2: n.s
IBIMET_3: n.s
```

BrixA

Analysis of Variance Table

```
Response: Br_2009M[, 13]
                    Df  Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1             1 27.0709 27.0709 49.9378 8.459e-06 ***
IBIMET_2             1  1.0168  1.0168  1.8756  0.194027
IBIMET_3             1  0.3722  0.3722  0.6866  0.422289
N_Gemme              1  0.1634  0.1634  0.3014  0.592330
Defogl               1  0.7026  0.7026  1.2961  0.275478
Dirad                1  1.7348  1.7348  3.2002  0.096941 .
Vigoria              2 16.6908  8.3454 15.3949  0.000373 ***
N_Gemme:Defogl       1  4.1861  4.1861  7.7221  0.015650 *
N_Gemme:Dirad        1  0.7188  0.7188  1.3259  0.270274
Defogl:Dirad         1  2.5069  2.5069  4.6245  0.050914 .
N_Gemme:Vigoria      2  1.1865  0.5932  1.0944  0.363702
Defogl:Vigoria       2  3.2525  1.6263  3.0000  0.084867 .
Dirad:Vigoria        2  2.8222  1.4111  2.6030  0.112003
N_Gemme:Defogl:Dirad  1  0.0215  0.0215  0.0397  0.845059
Residuals           13  7.0472  0.5421
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.891
IBIMET_2: n.s
IBIMET_3: n.s
```

PhA

Analysis of Variance Table

```
Response: Br_2009M[, 14]
                    Df   Sum Sq  Mean Sq F value    Pr(>F)
IBIMET_1             1 0.050027 0.050027 14.9574 0.0019421 **
IBIMET_2             1 0.002690 0.002690  0.8042 0.3861508
IBIMET_3             1 0.049976 0.049976 14.9422 0.0019494 **
N_Gemme              1 0.009468 0.009468  2.8309 0.1163140
```

```
Defogl               1 0.003966 0.003966  1.1857 0.2959805
Dirad                1 0.014669 0.014669  4.3859 0.0563964 .
Vigoria              2 0.113255 0.056628 16.9309 0.0002401 ***
N_Gemme:Defogl       1 0.003420 0.003420  1.0226 0.3303666
N_Gemme:Dirad        1 0.014275 0.014275  4.2682 0.0593623 .
Defogl:Dirad         1 0.003970 0.003970  1.1871 0.2957031
N_Gemme:Vigoria      2 0.002008 0.001004  0.3002 0.7456643
Defogl:Vigoria       2 0.021493 0.010747  3.2131 0.0734692 .
Dirad:Vigoria        2 0.017758 0.008879  2.6547 0.1079581
N_Gemme:Defogl:Dirad 1 0.005755 0.005755  1.7206 0.2123093
Residuals           13 0.043480 0.003345
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.731
IBIMET_2: n.s
IBIMET_3: -0.731
```

AcTitolA

Analysis of Variance Table

```
Response: Br_2009M[, 15]
                    Df Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1             1 1.2961  1.2961  9.7276 0.0081447 **
IBIMET_2             1 0.0002  0.0002  0.0016 0.9683742
IBIMET_3             1 5.1868  5.1868 38.9298 3.023e-05 ***
N_Gemme              1 0.0958  0.0958  0.7193 0.4117284
Defogl               1 1.5180  1.5180 11.3932 0.0049721 **
Dirad                1 1.1318  1.1318  8.4946 0.0120663 *
Vigoria              2 4.2344  2.1172 15.8906 0.0003225 ***
N_Gemme:Defogl       1 0.0339  0.0339  0.2547 0.6222637
N_Gemme:Dirad        1 0.4809  0.4809  3.6092 0.0798725 .
Defogl:Dirad         1 0.0246  0.0246  0.1848 0.6743127
N_Gemme:Vigoria      2 0.0142  0.0071  0.0533 0.9483025
Defogl:Vigoria       2 1.9344  0.9672  7.2594 0.0076391 **
Dirad:Vigoria        2 0.4859  0.2430  1.8236 0.2004068
N_Gemme:Defogl:Dirad 1 0.0717  0.0717  0.5384 0.4761108
Residuals           13 1.7321  0.1332
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.654
IBIMET_2: n.s
IBIMET_3: 0.866
```

AcTartA

Analysis of Variance Table

```
Response: Br_2009M[, 16]
                    Df Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1             1 0.0232  0.0232  0.1159 0.738971
IBIMET_2             1 0.3566  0.3566  1.7840 0.204574
IBIMET_3             1 6.0965  6.0965 30.4989 9.83e-05 ***
N_Gemme              1 0.1339  0.1339  0.6698 0.427865
Defogl               1 1.1186  1.1186  5.5960 0.034217 *
Dirad                1 0.7031  0.7031  3.5172 0.083369 .
Vigoria              2 4.6838  2.3419 11.7159 0.001233 **
```

```
N_Gemme:Defogl         1 0.0073  0.0073  0.0364 0.851712
N_Gemme:Dirad          1 0.3962  0.3962  1.9819 0.182655
Defogl:Dirad           1 0.0192  0.0192  0.0959 0.761721
N_Gemme:Vigoria        2 0.0260  0.0130  0.0650 0.937327
Defogl:Vigoria         2 1.6467  0.8234  4.1191 0.041151 *
Dirad:Vigoria          2 0.7209  0.3604  1.8031 0.203641
N_Gemme:Defogl:Dirad  1 0.0093  0.0093  0.0465 0.832528
Residuals             13 2.5986  0.1999
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: 0.837

AcMalicoA

Analysis of Variance Table

```
Response: Br_2009M[, 17]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1              1 0.87003 0.87003 21.3124 0.000483 ***
IBIMET_2              1 0.00125 0.00125  0.0306 0.863743
IBIMET_3              1 0.23796 0.23796  5.8291 0.031235 *
N_Gemme               1 0.23152 0.23152  5.6714 0.033216 *
Defogl                1 0.00044 0.00044  0.0108 0.918885
Dirad                 1 0.05076 0.05076  1.2435 0.284989
Vigoria               2 0.43677 0.21839  5.3496 0.020177 *
N_Gemme:Defogl        1 0.09446 0.09446  2.3139 0.152169
N_Gemme:Dirad         1 0.09726 0.09726  2.3825 0.146685
Defogl:Dirad          1 0.00346 0.00346  0.0847 0.775649
N_Gemme:Vigoria       2 0.03201 0.01600  0.3920 0.683405
Defogl:Vigoria        2 0.02390 0.01195  0.2927 0.751045
Dirad:Vigoria         2 0.09654 0.04827  1.1825 0.337423
N_Gemme:Defogl:Dirad  1 0.00138 0.00138  0.0338 0.856964
Residuals            13 0.53070 0.04082
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: 0.788
IBIMET_2: n.s
IBIMET_3: 0.556

KA

Analysis of Variance Table

```
Response: Br_2009M[, 18]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
IBIMET_1              1 0.015855 0.015855  1.9345 0.18762
IBIMET_2              1 0.045098 0.045098  5.5025 0.03551 *
IBIMET_3              1 0.039735 0.039735  4.8482 0.04634 *
N_Gemme               1 0.037089 0.037089  4.5254 0.05311 .
Defogl                1 0.007070 0.007070  0.8626 0.36992
Dirad                 1 0.000092 0.000092  0.0112 0.91738
Vigoria               2 0.065207 0.032604  3.9781 0.04489 *
N_Gemme:Defogl        1 0.001284 0.001284  0.1566 0.69871
N_Gemme:Dirad         1 0.026602 0.026602  3.2458 0.09484 .
Defogl:Dirad          1 0.000056 0.000056  0.0068 0.93544
```

```
N_Gemme:Vigoria       2 0.006680 0.003340  0.4075 0.67351
Defogl:Vigoria        2 0.001813 0.000906  0.1106 0.89614
Dirad:Vigoria         2 0.038685 0.019342  2.3600 0.13354
N_Gemme:Defogl:Dirad  1 0.000843 0.000843  0.1029 0.75352
Residuals            13 0.106546 0.008196
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: -0.545
IBIMET_3: 0.521
```

ApaA

```
Analysis of Variance Table

Response: Br_2009M[, 19]
                     Df Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1              1 2881.6 2881.59  9.7413 0.008110 **
IBIMET_2              1  641.2  641.21  2.1676 0.164736
IBIMET_3              1  757.1  757.06  2.5593 0.133661
N_Gemme               1 1118.9 1118.88  3.7824 0.073750 .
Defogl                1    2.1    2.13  0.0072 0.933617
Dirad                 1    1.4    1.44  0.0049 0.945370
Vigoria               2 4962.1 2481.06  8.3873 0.004578 **
N_Gemme:Defogl        1  507.7  507.68  1.7162 0.212855
N_Gemme:Dirad         1  265.5  265.51  0.8976 0.360711
Defogl:Dirad          1   39.5   39.53  0.1336 0.720575
N_Gemme:Vigoria       2  257.6  128.80  0.4354 0.656101
Defogl:Vigoria        2  380.7  190.37  0.6435 0.541372
Dirad:Vigoria         2  535.9  267.97  0.9059 0.428246
N_Gemme:Defogl:Dirad  1   12.3   12.31  0.0416 0.841494
Residuals            13 3845.5  295.81
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.654
IBIMET_2: n.s
IBIMET_3: n.s
```

Antoctot1A

```
Analysis of Variance Table

Response: Br_2009M[, 20]
                     Df Sum Sq Mean Sq  F value    Pr(>F)
IBIMET_1              1 267102  267102 107.7345 1.166e-07 ***
IBIMET_2              1  41733   41733  16.8328  0.001247 **
IBIMET_3              1   4331    4331   1.7469  0.209052
N_Gemme               1   1219    1219   0.4917  0.495533
Defogl                1    222     222   0.0895  0.769504
Dirad                 1  34577   34577  13.9463  0.002500 **
Vigoria               2  47434   23717   9.5661  0.002789 **
N_Gemme:Defogl        1   5901    5901   2.3802  0.146868
N_Gemme:Dirad         1  23497   23497   9.4776  0.008802 **
Defogl:Dirad          1     22      22   0.0088  0.926704
N_Gemme:Vigoria       2   2615    1307   0.5273  0.602296
Defogl:Vigoria        2   8773    4386   1.7692  0.209134
Dirad:Vigoria         2    107      53   0.0215  0.978729
```

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| N_Gemme:Defogl:Dirad | 1 | 576 | 576 | 0.2325 | 0.637692 | |
| Residuals | 13 | 32230 | 2479 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.945
IBIMET_2: -0.751
IBIMET_3: n.s

Poliftot1A

Analysis of Variance Table

Response: Br_2009M[, 21]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 784431 | 784431 | 132.4038 | 3.452e-08 | *** |
| IBIMET_2 | 1 | 26426 | 26426 | 4.4605 | 0.05461 | . |
| IBIMET_3 | 1 | 4133 | 4133 | 0.6976 | 0.41869 | |
| N_Gemme | 1 | 25953 | 25953 | 4.3806 | 0.05653 | . |
| Defogl | 1 | 3 | 3 | 0.0005 | 0.98229 | |
| Dirad | 1 | 10808 | 10808 | 1.8242 | 0.19985 | |
| Vigoria | 2 | 50586 | 25293 | 4.2692 | 0.03756 | * |
| N_Gemme:Defogl | 1 | 10124 | 10124 | 1.7089 | 0.21378 | |
| N_Gemme:Dirad | 1 | 2843 | 2843 | 0.4798 | 0.50070 | |
| Defogl:Dirad | 1 | 6435 | 6435 | 1.0861 | 0.31633 | |
| N_Gemme:Vigoria | 2 | 3146 | 1573 | 0.2655 | 0.77085 | |
| Defogl:Vigoria | 2 | 34462 | 17231 | 2.9084 | 0.09038 | . |
| Dirad:Vigoria | 2 | 2747 | 1374 | 0.2318 | 0.79628 | |
| N_Gemme:Defogl:Dirad | 1 | 11049 | 11049 | 1.8650 | 0.19521 | |
| Residuals | 13 | 77019 | 5925 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.954
IBIMET_2: n.s
IBIMET_3: n.s

Antoctot2A

Analysis of Variance Table

Response: Br_2009M[, 22]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 1084313 | 1084313 | 57.8000 | 3.888e-06 | *** |
| IBIMET_2 | 1 | 67599 | 67599 | 3.6034 | 0.08009 | . |
| IBIMET_3 | 1 | 15813 | 15813 | 0.8429 | 0.37528 | |
| N_Gemme | 1 | 197 | 197 | 0.0105 | 0.92004 | |
| Defogl | 1 | 9398 | 9398 | 0.5010 | 0.49157 | |
| Dirad | 1 | 62021 | 62021 | 3.3061 | 0.09213 | . |
| Vigoria | 2 | 218247 | 109124 | 5.8169 | 0.01569 | * |
| N_Gemme:Defogl | 1 | 698 | 698 | 0.0372 | 0.85006 | |
| N_Gemme:Dirad | 1 | 129502 | 129502 | 6.9032 | 0.02089 | * |
| Defogl:Dirad | 1 | 1034 | 1034 | 0.0551 | 0.81808 | |
| N_Gemme:Vigoria | 2 | 44280 | 22140 | 1.1802 | 0.33808 | |
| Defogl:Vigoria | 2 | 39836 | 19918 | 1.0617 | 0.37402 | |
| Dirad:Vigoria | 2 | 9835 | 4918 | 0.2621 | 0.77337 | |
| N_Gemme:Defogl:Dirad | 1 | 43419 | 43419 | 2.3145 | 0.15212 | |
| Residuals | 13 | 243877 | 18760 | | | |

---

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.904
IBIMET_2: n.s
IBIMET_3: n.s

Poliftot2A

Analysis of Variance Table

Response: Br_2009M[, 23]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 3031908 | 3031908 | 85.9137 | 4.309e-07 | *** |
| IBIMET_2 | 1 | 1834 | 1834 | 0.0520 | 0.82320 | |
| IBIMET_3 | 1 | 6220 | 6220 | 0.1763 | 0.68147 | |
| N_Gemme | 1 | 66604 | 66604 | 1.8873 | 0.19273 | |
| Defogl | 1 | 18275 | 18275 | 0.5178 | 0.48450 | |
| Dirad | 1 | 4837 | 4837 | 0.1371 | 0.71718 | |
| Vigoria | 2 | 131373 | 65686 | 1.8613 | 0.19460 | |
| N_Gemme:Defogl | 1 | 24073 | 24073 | 0.6821 | 0.42375 | |
| N_Gemme:Dirad | 1 | 21550 | 21550 | 0.6107 | 0.44854 | |
| Defogl:Dirad | 1 | 31126 | 31126 | 0.8820 | 0.36478 | |
| N_Gemme:Vigoria | 2 | 2924 | 1462 | 0.0414 | 0.95955 | |
| Defogl:Vigoria | 2 | 332145 | 166073 | 4.7059 | 0.02901 | * |
| Dirad:Vigoria | 2 | 73798 | 36899 | 1.0456 | 0.37926 | |
| N_Gemme:Defogl:Dirad | 1 | 2185 | 2185 | 0.0619 | 0.80736 | |
| Residuals | 13 | 458772 | 35290 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.932
IBIMET_2: n.s
IBIMET_3: n.s

PvinacciaB

Analysis of Variance Table

Response: Br_2009M[, 24]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 5898969 | 5898969 | 55.4691 | 4.849e-06 | *** |
| IBIMET_2 | 1 | 946804 | 946804 | 8.9030 | 0.0105632 | * |
| IBIMET_3 | 1 | 275682 | 275682 | 2.5923 | 0.1313882 | |
| N_Gemme | 1 | 133025 | 133025 | 1.2509 | 0.2836302 | |
| Defogl | 1 | 171511 | 171511 | 1.6128 | 0.2263664 | |
| Dirad | 1 | 2486691 | 2486691 | 23.3828 | 0.0003254 | *** |
| Vigoria | 2 | 1350516 | 675258 | 6.3496 | 0.0119168 | * |
| N_Gemme:Defogl | 1 | 96104 | 96104 | 0.9037 | 0.3591346 | |
| N_Gemme:Dirad | 1 | 2834 | 2834 | 0.0266 | 0.8728456 | |
| Defogl:Dirad | 1 | 104376 | 104376 | 0.9815 | 0.3399198 | |
| N_Gemme:Vigoria | 2 | 422247 | 211124 | 1.9852 | 0.1768566 | |
| Defogl:Vigoria | 2 | 164831 | 82416 | 0.7750 | 0.4808767 | |
| Dirad:Vigoria | 2 | 2272836 | 1136418 | 10.6860 | 0.0018001 | ** |
| N_Gemme:Defogl:Dirad | 1 | 75834 | 75834 | 0.7131 | 0.4136927 | |
| Residuals | 13 | 1382509 | 106347 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.9

```
IBIMET_2: -0.638
IBIMET_3: n.s
```

DensMostoB

```
Analysis of Variance Table

Response: Br_2009M[, 25]
                     Df     Sum Sq    Mean Sq F value   Pr(>F)   
IBIMET_1              1 0.00031578 3.1578e-04 14.3669 0.002248 **
IBIMET_2              1 0.00014090 1.4090e-04  6.4103 0.025037 * 
IBIMET_3              1 0.00004822 4.8223e-05  2.1940 0.162379   
N_Gemme               1 0.00000957 9.5660e-06  0.4352 0.520951   
Defogl                1 0.00000798 7.9770e-06  0.3629 0.557246   
Dirad                 1 0.00003219 3.2186e-05  1.4644 0.247782   
Vigoria               2 0.00032790 1.6395e-04  7.4592 0.006956 **
N_Gemme:Defogl        1 0.00002166 2.1658e-05  0.9854 0.338995   
N_Gemme:Dirad         1 0.00006460 6.4601e-05  2.9391 0.110184   
Defogl:Dirad          1 0.00001282 1.2825e-05  0.5835 0.458590   
N_Gemme:Vigoria       2 0.00003855 1.9276e-05  0.8770 0.439263   
Defogl:Vigoria        2 0.00002070 1.0350e-05  0.4709 0.634689   
Dirad:Vigoria         2 0.00003298 1.6489e-05  0.7502 0.491663   
N_Gemme:Defogl:Dirad  1 0.00002150 2.1503e-05  0.9783 0.340665   
Residuals            13 0.00028574 2.1980e-05                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.725
IBIMET_2: -0.575
IBIMET_3: n.s
```

BrixB

```
Analysis of Variance Table

Response: Br_2009M[, 26]
                     Df  Sum Sq Mean Sq F value   Pr(>F)   
IBIMET_1              1 14.7732 14.7732 14.4575 0.002198 **
IBIMET_2              1  6.5993  6.5993  6.4582 0.024594 * 
IBIMET_3              1  2.5533  2.5533  2.4988 0.137950   
N_Gemme               1  0.4097  0.4097  0.4009 0.537592   
Defogl                1  0.3511  0.3511  0.3436 0.567814   
Dirad                 1  1.4896  1.4896  1.4577 0.248799   
Vigoria               2 13.8907  6.9454  6.7969 0.009540 **
N_Gemme:Defogl        1  0.9534  0.9534  0.9330 0.351705   
N_Gemme:Dirad         1  3.0441  3.0441  2.9790 0.108021   
Defogl:Dirad          1  0.7262  0.7262  0.7107 0.414445   
N_Gemme:Vigoria       2  1.7753  0.8876  0.8687 0.442494   
Defogl:Vigoria        2  1.0274  0.5137  0.5027 0.616168   
Dirad:Vigoria         2  1.5338  0.7669  0.7505 0.491517   
N_Gemme:Defogl:Dirad  1  0.9671  0.9671  0.9464 0.348381   
Residuals            13 13.2839  1.0218                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.726
IBIMET_2: -0.576
IBIMET_3: n.s
```

PhB

Analysis of Variance Table

Response: Br_2009M[, 27]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 0.016425 | 0.016425 | 2.2929 | 0.15390 | |
| IBIMET_2 | 1 | 0.012166 | 0.012166 | 1.6983 | 0.21511 | |
| IBIMET_3 | 1 | 0.049873 | 0.049873 | 6.9621 | 0.02045 | * |
| N_Gemme | 1 | 0.002028 | 0.002028 | 0.2830 | 0.60369 | |
| Defogl | 1 | 0.000525 | 0.000525 | 0.0733 | 0.79091 | |
| Dirad | 1 | 0.051203 | 0.051203 | 7.1477 | 0.01914 | * |
| Vigoria | 2 | 0.090825 | 0.045412 | 6.3394 | 0.01198 | * |
| N_Gemme:Defogl | 1 | 0.010344 | 0.010344 | 1.4440 | 0.25093 | |
| N_Gemme:Dirad | 1 | 0.015515 | 0.015515 | 2.1658 | 0.16490 | |
| Defogl:Dirad | 1 | 0.000423 | 0.000423 | 0.0590 | 0.81185 | |
| N_Gemme:Vigoria | 2 | 0.015924 | 0.007962 | 1.1115 | 0.35841 | |
| Defogl:Vigoria | 2 | 0.009582 | 0.004791 | 0.6688 | 0.52910 | |
| Dirad:Vigoria | 2 | 0.022256 | 0.011128 | 1.5534 | 0.24836 | |
| N_Gemme:Defogl:Dirad | 1 | 0.000468 | 0.000468 | 0.0654 | 0.80222 | |
| Residuals | 13 | 0.093126 | 0.007164 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: -0.591

AcTitolB

Analysis of Variance Table

Response: Br_2009M[, 28]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 0.0034 | 0.00338 | 0.0126 | 0.91250 | |
| IBIMET_2 | 1 | 0.1067 | 0.10670 | 0.3958 | 0.54018 | |
| IBIMET_3 | 1 | 1.6506 | 1.65064 | 6.1225 | 0.02790 | * |
| N_Gemme | 1 | 0.0737 | 0.07366 | 0.2732 | 0.60997 | |
| Defogl | 1 | 0.3565 | 0.35652 | 1.3224 | 0.27088 | |
| Dirad | 1 | 2.0736 | 2.07358 | 7.6912 | 0.01582 | * |
| Vigoria | 2 | 2.9920 | 1.49599 | 5.5488 | 0.01810 | * |
| N_Gemme:Defogl | 1 | 0.0105 | 0.01045 | 0.0388 | 0.84695 | |
| N_Gemme:Dirad | 1 | 0.4776 | 0.47760 | 1.7715 | 0.20607 | |
| Defogl:Dirad | 1 | 0.0222 | 0.02220 | 0.0824 | 0.77866 | |
| N_Gemme:Vigoria | 2 | 0.3881 | 0.19404 | 0.7197 | 0.50530 | |
| Defogl:Vigoria | 2 | 0.8904 | 0.44521 | 1.6513 | 0.22959 | |
| Dirad:Vigoria | 2 | 0.1147 | 0.05736 | 0.2128 | 0.81110 | |
| N_Gemme:Defogl:Dirad | 1 | 0.1413 | 0.14127 | 0.5240 | 0.48197 | |
| Residuals | 13 | 3.5049 | 0.26960 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: -0.566

AcTartB

```
Analysis of Variance Table

Response: Br_2009M[, 29]
                    Df Sum Sq Mean Sq F value   Pr(>F)   
IBIMET_1             1 0.2142 0.21421  0.8467 0.374260   
IBIMET_2             1 0.3689 0.36887  1.4580 0.248762   
IBIMET_3             1 2.6936 2.69363 10.6466 0.006173 **
N_Gemme              1 0.2077 0.20769  0.8209 0.381408   
Defogl               1 0.5032 0.50324  1.9891 0.181915   
Dirad                1 2.2267 2.22666  8.8009 0.010917 * 
Vigoria              2 3.4043 1.70213  6.7277 0.009869 **
N_Gemme:Defogl       1 0.0265 0.02653  0.1049 0.751232   
N_Gemme:Dirad        1 0.5635 0.56349  2.2272 0.159463   
Defogl:Dirad         1 0.1148 0.11478  0.4537 0.512400   
N_Gemme:Vigoria      2 0.1765 0.08827  0.3489 0.711866   
Defogl:Vigoria       2 0.5298 0.26491  1.0470 0.378779   
Dirad:Vigoria        2 0.1809 0.09047  0.3576 0.706034   
N_Gemme:Defogl:Dirad  1 0.0532 0.05323  0.2104 0.654044   
Residuals           13 3.2890 0.25300                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: -0.671
```

AcMalicoB

```
Analysis of Variance Table

Response: Br_2009M[, 30]
                    Df  Sum Sq Mean Sq  F value    Pr(>F)    
IBIMET_1             1 1.89855 1.89855 129.7669 3.891e-08 ***
IBIMET_2             1 0.18420 0.18420  12.5902  0.003568 ** 
IBIMET_3             1 0.01226 0.01226   0.8381  0.376619    
N_Gemme              1 0.00971 0.00971   0.6637  0.429936    
Defogl               1 0.02181 0.02181   1.4907  0.243792    
Dirad                1 0.00023 0.00023   0.0155  0.902920    
Vigoria              2 0.71182 0.35591  24.3265 4.036e-05 ***
N_Gemme:Defogl       1 0.00565 0.00565   0.3860  0.545145    
N_Gemme:Dirad        1 0.00506 0.00506   0.3457  0.566649    
Defogl:Dirad         1 0.02267 0.02267   1.5496  0.235173    
N_Gemme:Vigoria      2 0.00293 0.00146   0.1000  0.905533    
Defogl:Vigoria       2 0.11476 0.05738   3.9218  0.046484 *  
Dirad:Vigoria        2 0.18637 0.09319   6.3693  0.011798 *  
N_Gemme:Defogl:Dirad  1 0.04733 0.04733   3.2348  0.095336 .  
Residuals           13 0.19020 0.01463                       
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.953
IBIMET_2: 0.701
IBIMET_3: n.s
```

KB

```
Analysis of Variance Table

Response: Br_2009M[, 31]
```

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 0.082332 | 0.082332 | 11.7272 | 0.004524 | ** |
| IBIMET_2 | 1 | 0.014054 | 0.014054 | 2.0019 | 0.180608 | |
| IBIMET_3 | 1 | 0.035636 | 0.035636 | 5.0760 | 0.042174 | * |
| N_Gemme | 1 | 0.001024 | 0.001024 | 0.1458 | 0.708718 | |
| Defogl | 1 | 0.003667 | 0.003667 | 0.5223 | 0.482678 | |
| Dirad | 1 | 0.043004 | 0.043004 | 6.1255 | 0.027873 | * |
| Vigoria | 2 | 0.151190 | 0.075595 | 10.7676 | 0.001746 | ** |
| N_Gemme:Defogl | 1 | 0.036705 | 0.036705 | 5.2282 | 0.039637 | * |
| N_Gemme:Dirad | 1 | 0.002209 | 0.002209 | 0.3146 | 0.584382 | |
| Defogl:Dirad | 1 | 0.010000 | 0.010000 | 1.4244 | 0.254006 | |
| N_Gemme:Vigoria | 2 | 0.006431 | 0.003216 | 0.4580 | 0.642363 | |
| Defogl:Vigoria | 2 | 0.018280 | 0.009140 | 1.3019 | 0.305245 | |
| Dirad:Vigoria | 2 | 0.143896 | 0.071948 | 10.2481 | 0.002129 | ** |
| N_Gemme:Defogl:Dirad | 1 | 0.007072 | 0.007072 | 1.0073 | 0.333856 | |
| Residuals | 13 | 0.091268 | 0.007021 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.689
IBIMET_2: n.s
IBIMET_3: -0.53

ApaB

Analysis of Variance Table

Response: Br_2009M[, 32]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 1611.1 | 1611.13 | 6.4472 | 0.024695 | * |
| IBIMET_2 | 1 | 908.3 | 908.32 | 3.6348 | 0.078930 | . |
| IBIMET_3 | 1 | 229.7 | 229.66 | 0.9190 | 0.355221 | |
| N_Gemme | 1 | 434.2 | 434.24 | 1.7377 | 0.210191 | |
| Defogl | 1 | 4.6 | 4.56 | 0.0183 | 0.894561 | |
| Dirad | 1 | 0.0 | 0.04 | 0.0001 | 0.990644 | |
| Vigoria | 2 | 3416.8 | 1708.38 | 6.8363 | 0.009358 | ** |
| N_Gemme:Defogl | 1 | 215.8 | 215.80 | 0.8636 | 0.369681 | |
| N_Gemme:Dirad | 1 | 382.0 | 382.01 | 1.5287 | 0.238184 | |
| Defogl:Dirad | 1 | 30.6 | 30.59 | 0.1224 | 0.732018 | |
| N_Gemme:Vigoria | 2 | 62.1 | 31.05 | 0.1242 | 0.884204 | |
| Defogl:Vigoria | 2 | 1335.1 | 667.56 | 2.6713 | 0.106691 | |
| Dirad:Vigoria | 2 | 3939.2 | 1969.61 | 7.8817 | 0.005730 | ** |
| N_Gemme:Defogl:Dirad | 1 | 631.9 | 631.92 | 2.5287 | 0.135804 | |
| Residuals | 13 | 3248.7 | 249.90 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.576
IBIMET_2: n.s
IBIMET_3: n.s

Antoctot1B

Analysis of Variance Table

Response: Br_2009M[, 33]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 64141 | 64141 | 28.3720 | 0.0001374 | *** |
| IBIMET_2 | 1 | 6703 | 6703 | 2.9648 | 0.1087871 | |

```
IBIMET_3             1   1035    1035  0.4578 0.5105255
N_Gemme              1   3356    3356  1.4846 0.2447143
Defogl               1  18022   18022  7.9719 0.0143698 *
Dirad                1   3771    3771  1.6682 0.2189899
Vigoria              2  16479    8240  3.6447 0.0553847 .
N_Gemme:Defogl       1   1885    1885  0.8337 0.3778413
N_Gemme:Dirad        1      3       3  0.0012 0.9724480
Defogl:Dirad         1   8086    8086  3.5766 0.0810898 .
N_Gemme:Vigoria      2   1416     708  0.3133 0.7364184
Defogl:Vigoria       2    807     403  0.1785 0.8385761
Dirad:Vigoria        2  14488    7244  3.2044 0.0738991 .
N_Gemme:Defogl:Dirad 1   6590    6590  2.9150 0.1115123
Residuals           13  29389    2261
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.828
IBIMET_2: n.s
IBIMET_3: n.s
```

Poliftot1B

Analysis of Variance Table

```
Response: Br_2009M[, 34]
                    Df Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1             1 294775  294775 71.7991 1.185e-06 ***
IBIMET_2             1    638     638  0.1553  0.699879
IBIMET_3             1  10606   10606  2.5833  0.131999
N_Gemme              1   6848    6848  1.6679  0.219026
Defogl               1  37498   37498  9.1335  0.009812 **
Dirad                1   8725    8725  2.1251  0.168636
Vigoria              2  12919    6459  1.5734  0.244391
N_Gemme:Defogl       1     40      40  0.0099  0.922436
N_Gemme:Dirad        1   9006    9006  2.1937  0.162404
Defogl:Dirad         1   4294    4294  1.0458  0.325122
N_Gemme:Vigoria      2   2206    1103  0.2687  0.768522
Defogl:Vigoria       2  10297    5149  1.2541  0.317688
Dirad:Vigoria        2  57171   28586  6.9627  0.008802 **
N_Gemme:Defogl:Dirad 1   1515    1515  0.3690  0.554013
Residuals           13  53372    4106
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.92
IBIMET_2: n.s
IBIMET_3: n.s
```

Antoctot2B

Analysis of Variance Table

```
Response: Br_2009M[, 35]
                    Df Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1             1 479894  479894 18.9602 0.0007807 ***
IBIMET_2             1  27382   27382  1.0818 0.3172448
IBIMET_3             1   9852    9852  0.3893 0.5434854
N_Gemme              1    329     329  0.0130 0.9109719
Defogl               1 117178  117178  4.6296 0.0508026 .
```

```
Dirad                  1    270     270  0.0107 0.9192939
Vigoria                2  89019   44509  1.7585 0.2108964
N_Gemme:Defogl         1    380     380  0.0150 0.9043896
N_Gemme:Dirad          1     43      43  0.0017 0.9677413
Defogl:Dirad           1  23314   23314  0.9211 0.3546923
N_Gemme:Vigoria        2   5595    2798  0.1105 0.8961863
Defogl:Vigoria         2  68888   34444  1.3608 0.2906599
Dirad:Vigoria          2   8388    4194  0.1657 0.8490549
N_Gemme:Defogl:Dirad  1   2288    2288  0.0904 0.7684406
Residuals             13 329037   25311
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: 0.77
IBIMET_2: n.s
IBIMET_3: n.s

Poliftot2B

Analysis of Variance Table

```
Response: Br_2009M[, 36]
                     Df  Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_1              1 2158407 2158407 39.9683 2.650e-05 ***
IBIMET_2              1     313     313  0.0058   0.94048    
IBIMET_3              1   58784   58784  1.0885   0.31581    
N_Gemme               1    1922    1922  0.0356   0.85327    
Defogl                1  255367  255367  4.7288   0.04872 *  
Dirad                 1    2982    2982  0.0552   0.81787    
Vigoria               2   89033   44517  0.8243   0.46020    
N_Gemme:Defogl        1   40023   40023  0.7411   0.40490    
N_Gemme:Dirad         1   41442   41442  0.7674   0.39692    
Defogl:Dirad          1    5483    5483  0.1015   0.75507    
N_Gemme:Vigoria       2    7839    3919  0.0726   0.93037    
Defogl:Vigoria        2   77878   38939  0.7211   0.50470    
Dirad:Vigoria         2   28349   14174  0.2625   0.77312    
N_Gemme:Defogl:Dirad  1   43744   43744  0.8100   0.38448    
Residuals            13  702039   54003                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: 0.869
IBIMET_2: n.s
IBIMET_3: n.s

BROLIO 2009M DIPROVE

PvinacciaA

Analysis of Variance Table

```
Response: Br_2009M[, 11]
                     Df  Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1             1 1037907 1037907 15.2503  0.001808 ** 
DIPROVE_2             1 3283012 3283012 48.2383 1.014e-05 ***
DIPROVE_3             1  388008  388008  5.7011  0.032832 *  
N_Gemme               1     423     423  0.0062  0.938396    
Defogl                1  346424  346424  5.0901  0.041930 *  
```

```
Dirad                 1  608657  608657  8.9432  0.010427 *
Vigoria               2  680734  340367  5.0011  0.024498 *
N_Gemme:Defogl        1    1834    1834  0.0270  0.872126
N_Gemme:Dirad         1    5915    5915  0.0869  0.772801
Defogl:Dirad          1   46604   46604  0.6848  0.422881
N_Gemme:Vigoria       2   62603   31302  0.4599  0.641220
Defogl:Vigoria        2  371623  185812  2.7302  0.102346
Dirad:Vigoria         2   46670   23335  0.3429  0.715962
N_Gemme:Defogl:Dirad  1  202209  202209  2.9711  0.108447
Residuals            13  884757   68058
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.735
DIPROVE_2: 0.888
DIPROVE_3: 0.552

DensMostoA

Analysis of Variance Table

```
Response: Br_2009M[, 12]
                     Df     Sum Sq    Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.00049096 0.00049096 13.2144 0.003022 **
DIPROVE_2             1 0.00012770 0.00012770  3.4372 0.086567 .
DIPROVE_3             1 0.00001448 0.00001448  0.3897 0.543250
N_Gemme               1 0.00000298 0.00000298  0.0803 0.781357
Defogl                1 0.00000001 0.00000001  0.0003 0.986647
Dirad                 1 0.00003149 0.00003149  0.8476 0.374006
Vigoria               2 0.00009149 0.00004574  1.2312 0.323845
N_Gemme:Defogl        1 0.00002757 0.00002757  0.7421 0.404590
N_Gemme:Dirad         1 0.00001327 0.00001327  0.3572 0.560306
Defogl:Dirad          1 0.00005209 0.00005209  1.4020 0.257586
N_Gemme:Vigoria       2 0.00000093 0.00000046  0.0125 0.987609
Defogl:Vigoria        2 0.00001285 0.00000642  0.1729 0.843102
Dirad:Vigoria         2 0.00016040 0.00008020  2.1587 0.155060
N_Gemme:Defogl:Dirad  1 0.00001459 0.00001459  0.3926 0.541792
Residuals            13 0.00048299 0.00003715
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.71
DIPROVE_2: n.s
DIPROVE_3: n.s

BrixA

Analysis of Variance Table

```
Response: Br_2009M[, 13]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 22.4849 22.4849 13.5568 0.002764 **
DIPROVE_2             1  5.8307  5.8307  3.5155 0.083437 .
DIPROVE_3             1  0.6119  0.6119  0.3689 0.554056
N_Gemme               1  0.1761  0.1761  0.1062 0.749696
Defogl                1  0.0000  0.0000  0.0000 0.999908
Dirad                 1  1.3802  1.3802  0.8321 0.378259
Vigoria               2  3.8781  1.9391  1.1691 0.341264
N_Gemme:Defogl        1  1.3755  1.3755  0.8293 0.379050
```

```
N_Gemme:Dirad         1  0.6445  0.6445  0.3886 0.543827
Defogl:Dirad          1  2.4281  2.4281  1.4640 0.247841
N_Gemme:Vigoria       2  0.0743  0.0371  0.0224 0.977893
Defogl:Vigoria        2  0.5989  0.2995  0.1805 0.836871
Dirad:Vigoria         2  7.7825  3.8912  2.3461 0.134907
N_Gemme:Defogl:Dirad  1  0.6660  0.6660  0.4016 0.537273
Residuals            13 21.5614  1.6586
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.714
DIPROVE_2: n.s
DIPROVE_3: n.s
```

PhA

```
Analysis of Variance Table

Response: Br_2009M[, 14]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.024659 0.024659  3.2946 0.09264 .
DIPROVE_2             1 0.021361 0.021361  2.8540 0.11497
DIPROVE_3             1 0.030918 0.030918  4.1310 0.06306 .
N_Gemme               1 0.006751 0.006751  0.9020 0.35956
Defogl                1 0.022122 0.022122  2.9558 0.10928
Dirad                 1 0.021246 0.021246  2.8387 0.11586
Vigoria               2 0.099388 0.049694  6.6396 0.01031 *
N_Gemme:Defogl        1 0.000049 0.000049  0.0065 0.93705
N_Gemme:Dirad         1 0.000001 0.000001  0.0002 0.99036
Defogl:Dirad          1 0.004804 0.004804  0.6419 0.43744
N_Gemme:Vigoria       2 0.007728 0.003864  0.5163 0.60847
Defogl:Vigoria        2 0.004749 0.002374  0.3173 0.73363
Dirad:Vigoria         2 0.014860 0.007430  0.9927 0.39700
N_Gemme:Defogl:Dirad  1 0.000278 0.000278  0.0372 0.85004
Residuals            13 0.097298 0.007484
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

AcTitolA

```
Analysis of Variance Table

Response: Br_2009M[, 15]
                     Df Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.2915 0.29151  0.7478 0.40285
DIPROVE_2             1 0.5684 0.56841  1.4581 0.24874
DIPROVE_3             1 0.4302 0.43022  1.1036 0.31261
N_Gemme               1 0.1456 0.14563  0.3736 0.55159
Defogl                1 2.3824 2.38237  6.1114 0.02802 *
Dirad                 1 1.6874 1.68740  4.3286 0.05782 .
Vigoria               2 5.5899 2.79496  7.1698 0.00797 **
N_Gemme:Defogl        1 0.0207 0.02070  0.0531 0.82135
N_Gemme:Dirad         1 0.0178 0.01777  0.0456 0.83423
Defogl:Dirad          1 0.0902 0.09022  0.2314 0.63845
N_Gemme:Vigoria       2 0.3491 0.17457  0.4478 0.64852
```

```
Defogl:Vigoria         2 0.9501 0.47503  1.2186 0.32730
Dirad:Vigoria          2 0.5914 0.29569  0.7585 0.48801
N_Gemme:Defogl:Dirad   1 0.0584 0.05843  0.1499 0.70491
Residuals             13 5.0677 0.38983
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


AcTartA

Analysis of Variance Table

Response: Br_2009M[, 16]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.0097  0.0097  0.0310 0.863028
DIPROVE_2             1 0.1476  0.1476  0.4701 0.505004
DIPROVE_3             1 0.0091  0.0091  0.0289 0.867713
N_Gemme               1 0.0985  0.0985  0.3137 0.584946
Defogl                1 2.8487  2.8487  9.0745 0.009998 **
Dirad                 1 1.4450  1.4450  4.6031 0.051379 .
Vigoria               2 7.6253  3.8126 12.1450 0.001060 **
N_Gemme:Defogl        1 0.0699  0.0699  0.2227 0.644795
N_Gemme:Dirad         1 0.0538  0.0538  0.1713 0.685747
Defogl:Dirad          1 0.0813  0.0813  0.2590 0.619361
N_Gemme:Vigoria       2 0.1479  0.0739  0.2355 0.793453
Defogl:Vigoria        2 0.7874  0.3937  1.2541 0.317667
Dirad:Vigoria         2 0.9647  0.4824  1.5365 0.251766
N_Gemme:Defogl:Dirad  1 0.1698  0.1698  0.5410 0.475067
Residuals            13 4.0810  0.3139
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


AcMalicoA

Analysis of Variance Table

Response: Br_2009M[, 17]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.23619 0.23619  5.7016 0.032826 *
DIPROVE_2             1 0.21815 0.21815  5.2660 0.039035 *
DIPROVE_3             1 0.03166 0.03166  0.7643 0.397842
N_Gemme               1 0.19103 0.19103  4.6115 0.051195 .
Defogl                1 0.23779 0.23779  5.7403 0.032333 *
Dirad                 1 0.06971 0.06971  1.6828 0.217109
Vigoria               2 0.73097 0.36549  8.8228 0.003795 **
N_Gemme:Defogl        1 0.24510 0.24510  5.9168 0.030192 *
N_Gemme:Dirad         1 0.03194 0.03194  0.7710 0.395854
Defogl:Dirad          1 0.00437 0.00437  0.1055 0.750535
N_Gemme:Vigoria       2 0.04359 0.02180  0.5261 0.602945
Defogl:Vigoria        2 0.01474 0.00737  0.1779 0.839060
Dirad:Vigoria         2 0.11428 0.05714  1.3793 0.286259
N_Gemme:Defogl:Dirad  1 0.00039 0.00039  0.0095 0.923909
```

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| Residuals | 13 | 0.53853 | 0.04143 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.552
DIPROVE_2: 0.537
DIPROVE_3: n.s

KA

Analysis of Variance Table

Response: Br_2009M[, 18]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.003106 | 0.003106 | 0.3068 | 0.58906 | |
| DIPROVE_2 | 1 | 0.014305 | 0.014305 | 1.4130 | 0.25581 | |
| DIPROVE_3 | 1 | 0.066696 | 0.066696 | 6.5881 | 0.02344 | * |
| N_Gemme | 1 | 0.020962 | 0.020962 | 2.0706 | 0.17380 | |
| Defogl | 1 | 0.007558 | 0.007558 | 0.7466 | 0.40322 | |
| Dirad | 1 | 0.000825 | 0.000825 | 0.0815 | 0.77982 | |
| Vigoria | 2 | 0.057105 | 0.028553 | 2.8204 | 0.09607 | . |
| N_Gemme:Defogl | 1 | 0.008207 | 0.008207 | 0.8107 | 0.38430 | |
| N_Gemme:Dirad | 1 | 0.003023 | 0.003023 | 0.2986 | 0.59402 | |
| Defogl:Dirad | 1 | 0.000503 | 0.000503 | 0.0496 | 0.82714 | |
| N_Gemme:Vigoria | 2 | 0.006795 | 0.003398 | 0.3356 | 0.72091 | |
| Defogl:Vigoria | 2 | 0.006645 | 0.003322 | 0.3282 | 0.72603 | |
| Dirad:Vigoria | 2 | 0.063743 | 0.031871 | 3.1482 | 0.07674 | . |
| N_Gemme:Defogl:Dirad | 1 | 0.001574 | 0.001574 | 0.1554 | 0.69978 | |
| Residuals | 13 | 0.131607 | 0.010124 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.58

ApaA

Analysis of Variance Table

Response: Br_2009M[, 19]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 2487.3 | 2487.32 | 4.3054 | 0.05841 | . |
| DIPROVE_2 | 1 | 1612.3 | 1612.29 | 2.7908 | 0.11870 | |
| DIPROVE_3 | 1 | 743.9 | 743.87 | 1.2876 | 0.27699 | |
| N_Gemme | 1 | 455.6 | 455.65 | 0.7887 | 0.39063 | |
| Defogl | 1 | 52.2 | 52.20 | 0.0904 | 0.76848 | |
| Dirad | 1 | 67.9 | 67.92 | 0.1176 | 0.73717 | |
| Vigoria | 2 | 497.8 | 248.91 | 0.4308 | 0.65891 | |
| N_Gemme:Defogl | 1 | 44.9 | 44.88 | 0.0777 | 0.78483 | |
| N_Gemme:Dirad | 1 | 5.4 | 5.45 | 0.0094 | 0.92412 | |
| Defogl:Dirad | 1 | 12.5 | 12.51 | 0.0217 | 0.88527 | |
| N_Gemme:Vigoria | 2 | 408.4 | 204.22 | 0.3535 | 0.70877 | |
| Defogl:Vigoria | 2 | 782.9 | 391.45 | 0.6776 | 0.52491 | |
| Dirad:Vigoria | 2 | 1513.4 | 756.71 | 1.3098 | 0.30323 | |
| N_Gemme:Defogl:Dirad | 1 | 14.2 | 14.15 | 0.0245 | 0.87804 | |
| Residuals | 13 | 7510.5 | 577.73 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```
DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


Antoctot1A

Analysis of Variance Table

Response: Br_2009M[, 20]
                     Df Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1             1  67572   67572 13.6436  0.002702 ** 
DIPROVE_2             1 192896  192896 38.9479 3.016e-05 ***
DIPROVE_3             1  43491   43491  8.7813  0.010987 *  
N_Gemme               1      8       8  0.0016  0.969045    
Defogl                1   2252    2252  0.4548  0.511885    
Dirad                 1  19751   19751  3.9880  0.067200 .  
Vigoria               2  40185   20093  4.0569  0.042751 *  
N_Gemme:Defogl        1   8106    8106  1.6366  0.223153    
N_Gemme:Dirad         1  14706   14706  2.9693  0.108546    
Defogl:Dirad          1     18      18  0.0036  0.952947    
N_Gemme:Vigoria       2   4747    2374  0.4793  0.629750    
Defogl:Vigoria        2   8883    4442  0.8968  0.431674    
Dirad:Vigoria         2   1294     647  0.1306  0.878694    
N_Gemme:Defogl:Dirad  1   2045    2045  0.4128  0.531706    
Residuals            13  64385    4953                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.716
DIPROVE_2: -0.866
DIPROVE_3: -0.635


Poliftot1A

Analysis of Variance Table

Response: Br_2009M[, 21]
                     Df Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1             1 214132  214132 19.2061 0.0007412 ***
DIPROVE_2             1 364222  364222 32.6682 7.105e-05 ***
DIPROVE_3             1  73255   73255  6.5704 0.0235918 *  
N_Gemme               1  12191   12191  1.0935 0.3147601    
Defogl                1  24777   24777  2.2223 0.1598897    
Dirad                 1   2875    2875  0.2579 0.6201014    
Vigoria               2 120717   60359  5.4137 0.0194815 *  
N_Gemme:Defogl        1   6879    6879  0.6170 0.4462406    
N_Gemme:Dirad         1   1234    1234  0.1106 0.7447222    
Defogl:Dirad          1   8758    8758  0.7855 0.3915510    
N_Gemme:Vigoria       2   1071     535  0.0480 0.9532780    
Defogl:Vigoria        2  66067   33034  2.9629 0.0870534 .  
Dirad:Vigoria         2   5921    2960  0.2655 0.7708592    
N_Gemme:Defogl:Dirad  1   3129    3129  0.2806 0.6052140    
Residuals            13 144939   11149                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.772
DIPROVE_2: -0.846
```

DIPROVE_3: 0.579

Antoctot2A

```
Analysis of Variance Table

Response: Br_2009M[, 22]
                     Df Sum Sq Mean Sq F value   Pr(>F)    
DIPROVE_1             1 362772  362772 12.8945 0.003289 ** 
DIPROVE_2             1 652540  652540 23.1942 0.000337 ***
DIPROVE_3             1 133888  133888  4.7590 0.048102 *  
N_Gemme               1   2667    2667  0.0948 0.763025    
Defogl                1  44260   44260  1.5732 0.231828    
Dirad                 1  22850   22850  0.8122 0.383870    
Vigoria               2  92575   46288  1.6453 0.230702    
N_Gemme:Defogl        1    858     858  0.0305 0.864080    
N_Gemme:Dirad         1  80932   80932  2.8767 0.113672    
Defogl:Dirad          1   3241    3241  0.1152 0.739727    
N_Gemme:Vigoria       2  50601   25300  0.8993 0.430728    
Defogl:Vigoria        2  72813   36407  1.2941 0.307238    
Dirad:Vigoria         2  24869   12434  0.4420 0.652078    
N_Gemme:Defogl:Dirad  1  59463   59463  2.1136 0.169709    
Residuals            13 365739   28134                     
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: 0.706
DIPROVE_2: -0.801
DIPROVE_3: -0.518

Poliftot2A

```
Analysis of Variance Table

Response: Br_2009M[, 23]
                     Df  Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1             1 1180074 1180074 22.2617 0.0004018 ***
DIPROVE_2             1  939816  939816 17.7293 0.0010192 ** 
DIPROVE_3             1  181915  181915  3.4318 0.0867890 .  
N_Gemme               1   30552   30552  0.5764 0.4612870    
Defogl                1  289972  289972  5.4702 0.0359656 *  
Dirad                 1   23571   23571  0.4447 0.5165412    
Vigoria               2  128551   64275  1.2125 0.3289707    
N_Gemme:Defogl        1   20210   20210  0.3813 0.5475972    
N_Gemme:Dirad         1    5934    5934  0.1119 0.7432764    
Defogl:Dirad          1   23715   23715  0.4474 0.5152847    
N_Gemme:Vigoria       2    4297    2148  0.0405 0.9604014    
Defogl:Vigoria        2  572965  286482  5.4044 0.0195813 *  
Dirad:Vigoria         2   98547   49273  0.9295 0.4194603    
N_Gemme:Defogl:Dirad  1   18385   18385  0.3468 0.5660075    
Residuals            13  689120   53009                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: 0.795
DIPROVE_2: -0.76
DIPROVE_3: n.s

PvinacciaB

```
Analysis of Variance Table

Response: Br_2009M[, 24]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1            1 1301016 1301016 14.0439 0.0024389 ** 
DIPROVE_2            1 4663789 4663789 50.3437 8.107e-06 ***
DIPROVE_3            1  451553  451553  4.8743 0.0458369 *  
N_Gemme              1   16272   16272  0.1757 0.6819785    
Defogl               1   87800   87800  0.9478 0.3480558    
Dirad                1 1858483 1858483 20.0616 0.0006207 ***
Vigoria              2 1650511  825255  8.9083 0.0036604 ** 
N_Gemme:Defogl       1   12537   12537  0.1353 0.7188823    
N_Gemme:Dirad        1  180909  180909  1.9528 0.1856745    
Defogl:Dirad         1   82947   82947  0.8954 0.3612802    
N_Gemme:Vigoria      2  261397  130699  1.4108 0.2789273    
Defogl:Vigoria       2  266816  133408  1.4401 0.2723164    
Dirad:Vigoria        2 3407357 1703679 18.3905 0.0001621 ***
N_Gemme:Defogl:Dirad  1  339074  339074  3.6602 0.0780084 .  
Residuals           13 1204307   92639                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: 0.721
DIPROVE_2: 0.891
DIPROVE_3: -0.522

DensMostoB

```
Analysis of Variance Table

Response: Br_2009M[, 25]
                    Df     Sum Sq    Mean Sq F value  Pr(>F)  
DIPROVE_1            1 0.00025765 2.5765e-04  4.6602 0.05015 .
DIPROVE_2            1 0.00001176 1.1756e-05  0.2126 0.65234  
DIPROVE_3            1 0.00001842 1.8423e-05  0.3332 0.57363  
N_Gemme              1 0.00002495 2.4953e-05  0.4513 0.51347  
Defogl               1 0.00003984 3.9839e-05  0.7206 0.41131  
Dirad                1 0.00002118 2.1175e-05  0.3830 0.54670  
Vigoria              2 0.00006461 3.2307e-05  0.5843 0.57147  
N_Gemme:Defogl       1 0.00000095 9.5400e-07  0.0172 0.89752  
N_Gemme:Dirad        1 0.00001361 1.3612e-05  0.2462 0.62804  
Defogl:Dirad         1 0.00000337 3.3700e-06  0.0609 0.80886  
N_Gemme:Vigoria      2 0.00003785 1.8926e-05  0.3423 0.71633  
Defogl:Vigoria       2 0.00001277 6.3850e-06  0.1155 0.89183  
Dirad:Vigoria        2 0.00013466 6.7331e-05  1.2178 0.32750  
N_Gemme:Defogl:Dirad  1 0.00002071 2.0706e-05  0.3745 0.55111  
Residuals           13 0.00071874 5.5288e-05                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

BrixB

```
Analysis of Variance Table
```

```
Response: Br_2009M[, 26]
                    Df Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1            1 11.906 11.9056  4.6604 0.05014 .
DIPROVE_2            1  0.501  0.5010  0.1961 0.66515  
DIPROVE_3            1  0.811  0.8112  0.3176 0.58267  
N_Gemme              1  1.078  1.0777  0.4219 0.52732  
Defogl               1  1.784  1.7839  0.6983 0.41845  
Dirad                1  1.032  1.0323  0.4041 0.53602  
Vigoria              2  2.622  1.3109  0.5132 0.61024  
N_Gemme:Defogl       1  0.035  0.0350  0.0137 0.90864  
N_Gemme:Dirad        1  0.650  0.6505  0.2546 0.62228  
Defogl:Dirad         1  0.234  0.2338  0.0915 0.76704  
N_Gemme:Vigoria      2  1.675  0.8373  0.3277 0.72633  
Defogl:Vigoria       2  0.557  0.2783  0.1089 0.89759  
Dirad:Vigoria        2  6.343  3.1716  1.2415 0.32105  
N_Gemme:Defogl:Dirad  1  0.941  0.9409  0.3683 0.55437  
Residuals           13 33.210  2.5546                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

PhB

Analysis of Variance Table

```
Response: Br_2009M[, 27]
                    Df   Sum Sq  Mean Sq F value   Pr(>F)   
DIPROVE_1            1 0.000861 0.000861  0.1250 0.729361   
DIPROVE_2            1 0.002054 0.002054  0.2982 0.594238   
DIPROVE_3            1 0.014559 0.014559  2.1141 0.169659   
N_Gemme              1 0.005642 0.005642  0.8192 0.381872   
Defogl               1 0.005236 0.005236  0.7603 0.399061   
Dirad                1 0.053050 0.053050  7.7035 0.015751 * 
Vigoria              2 0.145561 0.072780 10.5686 0.001882 **
N_Gemme:Defogl       1 0.001992 0.001992  0.2892 0.599808   
N_Gemme:Dirad        1 0.006218 0.006218  0.9030 0.359324   
Defogl:Dirad         1 0.000222 0.000222  0.0323 0.860242   
N_Gemme:Vigoria      2 0.017031 0.008516  1.2366 0.322380   
Defogl:Vigoria       2 0.003457 0.001729  0.2510 0.781706   
Dirad:Vigoria        2 0.045189 0.022594  3.2810 0.070217 . 
N_Gemme:Defogl:Dirad  1 0.000088 0.000088  0.0127 0.911838   
Residuals           13 0.089524 0.006886                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

AcTitolB

Analysis of Variance Table

```
Response: Br_2009M[, 28]
                    Df Sum Sq Mean Sq F value  Pr(>F)  
```

| | | | | | | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.0073 | 0.00727 | 0.0218 | 0.88476 | |
| DIPROVE_2 | 1 | 0.0049 | 0.00494 | 0.0148 | 0.90495 | |
| DIPROVE_3 | 1 | 0.0309 | 0.03087 | 0.0927 | 0.76557 | |
| N_Gemme | 1 | 0.1812 | 0.18120 | 0.5443 | 0.47377 | |
| Defogl | 1 | 0.3271 | 0.32714 | 0.9827 | 0.33964 | |
| Dirad | 1 | 2.3849 | 2.38492 | 7.1638 | 0.01903 | * |
| Vigoria | 2 | 3.8515 | 1.92575 | 5.7846 | 0.01596 | * |
| N_Gemme:Defogl | 1 | 0.0440 | 0.04399 | 0.1321 | 0.72208 | |
| N_Gemme:Dirad | 1 | 0.2537 | 0.25372 | 0.7621 | 0.39850 | |
| Defogl:Dirad | 1 | 0.0257 | 0.02567 | 0.0771 | 0.78561 | |
| N_Gemme:Vigoria | 2 | 0.5347 | 0.26735 | 0.8031 | 0.46897 | |
| Defogl:Vigoria | 2 | 0.3544 | 0.17722 | 0.5323 | 0.59951 | |
| Dirad:Vigoria | 2 | 0.1944 | 0.09718 | 0.2919 | 0.75161 | |
| N_Gemme:Defogl:Dirad | 1 | 0.2835 | 0.28351 | 0.8516 | 0.37291 | |
| Residuals | 13 | 4.3279 | 0.33291 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

AcTartB

Analysis of Variance Table

Response: Br_2009M[, 29]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.1000 | 0.10003 | 0.2812 | 0.60483 | |
| DIPROVE_2 | 1 | 0.1158 | 0.11584 | 0.3257 | 0.57793 | |
| DIPROVE_3 | 1 | 0.2102 | 0.21024 | 0.5911 | 0.45573 | |
| N_Gemme | 1 | 0.3962 | 0.39619 | 1.1139 | 0.31045 | |
| Defogl | 1 | 0.4585 | 0.45851 | 1.2891 | 0.27671 | |
| Dirad | 1 | 2.6764 | 2.67645 | 7.5251 | 0.01675 | * |
| Vigoria | 2 | 4.7508 | 2.37540 | 6.6787 | 0.01011 | * |
| N_Gemme:Defogl | 1 | 0.1051 | 0.10505 | 0.2954 | 0.59600 | |
| N_Gemme:Dirad | 1 | 0.2964 | 0.29639 | 0.8333 | 0.37793 | |
| Defogl:Dirad | 1 | 0.1057 | 0.10571 | 0.2972 | 0.59486 | |
| N_Gemme:Vigoria | 2 | 0.2498 | 0.12491 | 0.3512 | 0.71033 | |
| Defogl:Vigoria | 2 | 0.1223 | 0.06114 | 0.1719 | 0.84395 | |
| Dirad:Vigoria | 2 | 0.2046 | 0.10229 | 0.2876 | 0.75472 | |
| N_Gemme:Defogl:Dirad | 1 | 0.1373 | 0.13731 | 0.3861 | 0.54511 | |
| Residuals | 13 | 4.6237 | 0.35567 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

AcMalicoB

Analysis of Variance Table

Response: Br_2009M[, 30]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.47682 | 0.47682 | 17.3454 | 0.0011102 | ** |
| DIPROVE_2 | 1 | 0.68724 | 0.68724 | 24.9998 | 0.0002430 | *** |
| DIPROVE_3 | 1 | 0.35352 | 0.35352 | 12.8598 | 0.0033192 | ** |

```
N_Gemme               1 0.01146 0.01146  0.4170 0.5296578
Defogl                1 0.05199 0.05199  1.8914 0.1922813
Dirad                 1 0.00380 0.00380  0.1382 0.7161080
Vigoria               2 1.15875 0.57938 21.0760 8.327e-05 ***
N_Gemme:Defogl        1 0.01209 0.01209  0.4397 0.5188549
N_Gemme:Dirad         1 0.02348 0.02348  0.8541 0.3722304
Defogl:Dirad          1 0.02267 0.02267  0.8248 0.3803085
N_Gemme:Vigoria       2 0.00086 0.00043  0.0156 0.9845618
Defogl:Vigoria        2 0.06418 0.03209  1.1673 0.3417881
Dirad:Vigoria         2 0.16694 0.08347  3.0364 0.0827849 .
N_Gemme:Defogl:Dirad  1 0.02236 0.02236  0.8136 0.3834785
Residuals            13 0.35737 0.02749
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: 0.756
DIPROVE_2: 0.811
DIPROVE_3: -0.705

KB

Analysis of Variance Table

```
Response: Br_2009M[, 31]
                     Df   Sum Sq  Mean Sq F value    Pr(>F)
DIPROVE_1             1 0.005966 0.005966  0.9244 0.3538687
DIPROVE_2             1 0.011906 0.011906  1.8447 0.1975108
DIPROVE_3             1 0.027302 0.027302  4.2300 0.0603636 .
N_Gemme               1 0.002460 0.002460  0.3811 0.5476820
Defogl                1 0.003492 0.003492  0.5410 0.4750618
Dirad                 1 0.043429 0.043429  6.7286 0.0222599 *
Vigoria               2 0.261756 0.130878 20.2773 0.0001008 ***
N_Gemme:Defogl        1 0.011824 0.011824  1.8319 0.1989689
N_Gemme:Dirad         1 0.000019 0.000019  0.0030 0.9570455
Defogl:Dirad          1 0.008388 0.008388  1.2995 0.2748646
N_Gemme:Vigoria       2 0.007990 0.003995  0.6189 0.5536550
Defogl:Vigoria        2 0.026663 0.013332  2.0655 0.1663577
Dirad:Vigoria         2 0.151665 0.075832 11.7489 0.0012187 **
N_Gemme:Defogl:Dirad  1 0.000000 0.000000  0.0000 0.9998245
Residuals            13 0.083907 0.006454
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

ApaB

Analysis of Variance Table

```
Response: Br_2009M[, 32]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 3204.5  3204.5 11.8998 0.004311 **
DIPROVE_2             1  601.8   601.8  2.2346 0.158822
DIPROVE_3             1  818.3   818.3  3.0386 0.104892
N_Gemme               1  201.7   201.7  0.7491 0.402447
Defogl                1  193.8   193.8  0.7197 0.411592
Dirad                 1  106.5   106.5  0.3957 0.540237
```

```
Vigoria               2  895.5   447.7  1.6627 0.227521
N_Gemme:Defogl        1  162.4   162.4  0.6030 0.451352
N_Gemme:Dirad         1  674.8   674.8  2.5057 0.137448
Defogl:Dirad          1   11.3    11.3  0.0419 0.841050
N_Gemme:Vigoria       2   90.8    45.4  0.1687 0.846616
Defogl:Vigoria        2  459.9   230.0  0.8540 0.448271
Dirad:Vigoria         2 5348.5  2674.2  9.9306 0.002411 **
N_Gemme:Defogl:Dirad  1  179.5   179.5  0.6666 0.428936
Residuals            13 3500.8   269.3
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: 0.691
DIPROVE_2: n.s
DIPROVE_3: n.s

Antoctot1B

Analysis of Variance Table

```
Response: Br_2009M[, 33]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1  35040   35040 14.8483 0.001995 **
DIPROVE_2             1  38161   38161 16.1710 0.001453 **
DIPROVE_3             1   4870    4870  2.0638 0.174462
N_Gemme               1   3465    3465  1.4682 0.247191
Defogl                1   1052    1052  0.4459 0.515987
Dirad                 1   1547    1547  0.6554 0.432743
Vigoria               2    889     445  0.1884 0.830500
N_Gemme:Defogl        1  11853   11853  5.0229 0.043104 *
N_Gemme:Dirad         1    907     907  0.3846 0.545893
Defogl:Dirad          1   7552    7552  3.2003 0.096936 .
N_Gemme:Vigoria       2   1283     642  0.2719 0.766151
Defogl:Vigoria        2   4110    2055  0.8709 0.441621
Dirad:Vigoria         2  18842    9421  3.9923 0.044492 *
N_Gemme:Defogl:Dirad  1  15921   15921  6.7466 0.022114 *
Residuals            13  30678    2360
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.73
DIPROVE_2: -0.745
DIPROVE_3: n.s

Poliftot1B

Analysis of Variance Table

```
Response: Br_2009M[, 34]
                     Df Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1             1 166213  166213 39.6483 2.759e-05 ***
DIPROVE_2             1  91721   91721 21.8788 0.0004325 ***
DIPROVE_3             1  15205   15205  3.6269 0.0792169 .
N_Gemme               1   7000    7000  1.6697 0.2187979
Defogl                1  10244   10244  2.4437 0.1420065
Dirad                 1   5285    5285  1.2608 0.2818167
Vigoria               2  12304    6152  1.4675 0.2662833
N_Gemme:Defogl        1   7422    7422  1.7705 0.2061890
N_Gemme:Dirad         1  26795   26795  6.3917 0.0252117 *
```

```
Defogl:Dirad          1   4000    4000  0.9541 0.3465055
N_Gemme:Vigoria       2   1617     808  0.1928 0.8269255
Defogl:Vigoria        2  30750   15375  3.6676 0.0545796 .
Dirad:Vigoria         2  61193   30596  7.2984 0.0074999 **
N_Gemme:Defogl:Dirad  1  15662   15662  3.7359 0.0753354 .
Residuals            13  54499    4192
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.868
DIPROVE_2: -0.792
DIPROVE_3: n.s
```

Antoctot2B

```
Analysis of Variance Table

Response: Br_2009M[, 35]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 314856  314856 10.2571 0.006932 **
DIPROVE_2             1 204563  204563  6.6641 0.022792 *
DIPROVE_3             1  52708   52708  1.7171 0.212748
N_Gemme               1   2011    2011  0.0655 0.801983
Defogl                1   2692    2692  0.0877 0.771787
Dirad                 1   1258    1258  0.0410 0.842692
Vigoria               2   2488    1244  0.0405 0.960399
N_Gemme:Defogl        1  36740   36740  1.1969 0.293801
N_Gemme:Dirad         1   6235    6235  0.2031 0.659648
Defogl:Dirad          1  24173   24173  0.7875 0.390984
N_Gemme:Vigoria       2   7327    3663  0.1193 0.888467
Defogl:Vigoria        2  49858   24929  0.8121 0.465217
Dirad:Vigoria         2  47698   23849  0.7769 0.480037
N_Gemme:Defogl:Dirad  1  10197   10197  0.3322 0.574225
Residuals            13 399053   30696
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.664
DIPROVE_2: -0.582
DIPROVE_3: n.s
```

Poliftot2B

```
Analysis of Variance Table

Response: Br_2009M[, 36]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1             1 1489938 1489938 23.6218 0.0003114 ***
DIPROVE_2             1  478528  478528  7.5867 0.0163995 *
DIPROVE_3             1  169414  169414  2.6859 0.1252015
N_Gemme               1      59      59  0.0009 0.9761294
Defogl                1   38057   38057  0.6034 0.4512022
Dirad                 1   11610   11610  0.1841 0.6749234
Vigoria               2  127669   63835  1.0120 0.3903974
N_Gemme:Defogl        1    1598    1598  0.0253 0.8759804
N_Gemme:Dirad         1  144209  144209  2.2863 0.1544415
Defogl:Dirad          1    8689    8689  0.1378 0.7164994
N_Gemme:Vigoria       2   12677    6339  0.1005 0.9050870
Defogl:Vigoria        2   68266   34133  0.5412 0.5946365
```

```
Dirad:Vigoria         2  132226   66113  1.0482 0.3784113
N_Gemme:Defogl:Dirad  1   10695   10695  0.1696 0.6872076
Residuals            13  819970   63075
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.803
DIPROVE_2: -0.607
DIPROVE_3: n.s

BROLIO 2009M IASMA

PvinacciaA

Analysis of Variance Table

```
Response: Br_2009M[, 11]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IASMA_1               1 3557332 3557332 46.5467 1.22e-05 ***
IASMA_2               1  217583  217583  2.8470 0.115376
IASMA_3               1  243049  243049  3.1802 0.097885 .
N_Gemme               1   50952   50952  0.6667 0.428918
Defogl                1   73512   73512  0.9619 0.344614
Dirad                 1 1165285 1165285 15.2474 0.001810 **
Vigoria               2  982488  491244  6.4278 0.011456 *
N_Gemme:Defogl        1    8159    8159  0.1068 0.749064
N_Gemme:Dirad         1    1266    1266  0.0166 0.899546
Defogl:Dirad          1   22746   22746  0.2976 0.594610
N_Gemme:Vigoria       2   28180   14090  0.1844 0.833769
Defogl:Vigoria        2  335152  167576  2.1927 0.151160
Dirad:Vigoria         2   74092   37046  0.4847 0.626558
N_Gemme:Defogl:Dirad  1  214057  214057  2.8009 0.118090
Residuals            13  993526   76425
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: 0.884
IASMA_2: n.s
IASMA_3: n.s

DensMostoA

Analysis of Variance Table

```
Response: Br_2009M[, 12]
                     Df     Sum Sq    Mean Sq F value    Pr(>F)
IASMA_1               1 0.00052993 0.00052993 19.4278 0.0007076 ***
IASMA_2               1 0.00000158 0.00000158  0.0578 0.8136915
IASMA_3               1 0.00004304 0.00004304  1.5777 0.2311951
N_Gemme               1 0.00000017 0.00000017  0.0064 0.9375731
Defogl                1 0.00003754 0.00003754  1.3761 0.2618135
Dirad                 1 0.00006212 0.00006212  2.2773 0.1551966
Vigoria               2 0.00004697 0.00002348  0.8610 0.4455181
N_Gemme:Defogl        1 0.00007263 0.00007263  2.6628 0.1266970
N_Gemme:Dirad         1 0.00000212 0.00000212  0.0777 0.7847609
Defogl:Dirad          1 0.00002096 0.00002096  0.7683 0.3966576
N_Gemme:Vigoria       2 0.00002008 0.00001004  0.3681 0.6990577
Defogl:Vigoria        2 0.00022660 0.00011330  4.1536 0.0402908 *
Dirad:Vigoria         2 0.00010440 0.00005220  1.9137 0.1868682
```

```
N_Gemme:Defogl:Dirad  1 0.00000107 0.00000107  0.0394 0.8458210
Residuals            13 0.00035460 0.00002728
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.774
IASMA_2: n.s
IASMA_3: n.s


BrixA

Analysis of Variance Table

Response: Br_2009M[, 13]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1               1 23.8296 23.8296 19.5648 0.0006876 ***
IASMA_2               1  0.0900  0.0900  0.0739 0.7900349
IASMA_3               1  2.0468  2.0468  1.6805 0.2174008
N_Gemme               1  0.0027  0.0027  0.0022 0.9632958
Defogl                1  1.8125  1.8125  1.4881 0.2441780
Dirad                 1  2.7736  2.7736  2.2772 0.1552063
Vigoria               2  1.9123  0.9561  0.7850 0.4765836
N_Gemme:Defogl        1  3.4721  3.4721  2.8507 0.1151643
N_Gemme:Dirad         1  0.1138  0.1138  0.0934 0.7646947
Defogl:Dirad          1  0.9837  0.9837  0.8076 0.3851666
N_Gemme:Vigoria       2  1.0446  0.5223  0.4288 0.6601598
Defogl:Vigoria        2 10.3789  5.1895  4.2607 0.0377551 *
Dirad:Vigoria         2  5.1506  2.5753  2.1144 0.1603180
N_Gemme:Defogl:Dirad  1  0.0482  0.0482  0.0396 0.8453858
Residuals            13 15.8338  1.2180
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.775
IASMA_2: n.s
IASMA_3: n.s


PhA

Analysis of Variance Table

Response: Br_2009M[, 14]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.034053 0.034053  3.7178 0.07596 .
IASMA_2               1 0.038123 0.038123  4.1621 0.06219 .
IASMA_3               1 0.001255 0.001255  0.1370 0.71728
N_Gemme               1 0.000789 0.000789  0.0862 0.77373
Defogl                1 0.005688 0.005688  0.6209 0.44483
Dirad                 1 0.011335 0.011335  1.2375 0.28611
Vigoria               2 0.065091 0.032545  3.5532 0.05874 .
N_Gemme:Defogl        1 0.000934 0.000934  0.1019 0.75458
N_Gemme:Dirad         1 0.003790 0.003790  0.4138 0.53125
Defogl:Dirad          1 0.000223 0.000223  0.0244 0.87836
N_Gemme:Vigoria       2 0.000615 0.000307  0.0336 0.96708
Defogl:Vigoria        2 0.060088 0.030044  3.2801 0.07026 .
Dirad:Vigoria         2 0.006344 0.003172  0.3463 0.71362
N_Gemme:Defogl:Dirad  1 0.008811 0.008811  0.9620 0.34459
Residuals            13 0.119074 0.009160
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


AcTitolA

Analysis of Variance Table

Response: Br_2009M[, 15]
                     Df Sum Sq Mean Sq F value  Pr(>F)  
IASMA_1               1 0.2389 0.23891  0.5660 0.46525  
IASMA_2               1 2.7492 2.74917  6.5131 0.02410 *
IASMA_3               1 0.0000 0.00003  0.0001 0.99353  
N_Gemme               1 0.0306 0.03057  0.0724 0.79206  
Defogl                1 0.7370 0.73698  1.7460 0.20917  
Dirad                 1 1.0037 1.00369  2.3779 0.14705  
Vigoria               2 3.9875 1.99375  4.7234 0.02872 *
N_Gemme:Defogl        1 0.0006 0.00060  0.0014 0.97057  
N_Gemme:Dirad         1 0.0907 0.09066  0.2148 0.65071  
Defogl:Dirad          1 0.0369 0.03693  0.0875 0.77206  
N_Gemme:Vigoria       2 0.0285 0.01427  0.0338 0.96684  
Defogl:Vigoria        2 3.4608 1.73038  4.0994 0.04165 *
Dirad:Vigoria         2 0.2738 0.13690  0.3243 0.72870  
N_Gemme:Defogl:Dirad  1 0.1154 0.11544  0.2735 0.60979  
Residuals            13 5.4873 0.42210                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: 0.578
IASMA_3: n.s


AcTartA

Analysis of Variance Table

Response: Br_2009M[, 16]
                     Df Sum Sq Mean Sq F value   Pr(>F)   
IASMA_1               1 0.5708  0.5708  1.4618 0.248178   
IASMA_2               1 3.7112  3.7112  9.5049 0.008728 **
IASMA_3               1 0.2428  0.2428  0.6219 0.444490   
N_Gemme               1 0.0042  0.0042  0.0108 0.918807   
Defogl                1 0.5327  0.5327  1.3644 0.263753   
Dirad                 1 0.5412  0.5412  1.3860 0.260182   
Vigoria               2 4.2646  2.1323  5.4611 0.018985 * 
N_Gemme:Defogl        1 0.0112  0.0112  0.0287 0.868074   
N_Gemme:Dirad         1 0.0818  0.0818  0.2096 0.654651   
Defogl:Dirad          1 0.0425  0.0425  0.1088 0.746771   
N_Gemme:Vigoria       2 0.0056  0.0028  0.0072 0.992867   
Defogl:Vigoria        2 2.9777  1.4888  3.8131 0.049763 * 
Dirad:Vigoria         2 0.4583  0.2291  0.5868 0.570156   
N_Gemme:Defogl:Dirad  1 0.0191  0.0191  0.0490 0.828323   
Residuals            13 5.0759  0.3905                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
```

IASMA_2: 0.65
IASMA_3: n.s

AcMalicoA

Analysis of Variance Table

Response: Br_2009M[, 17]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.62503 | 0.62503 | 12.0735 | 0.004109 | ** |
| IASMA_2 | 1 | 0.16380 | 0.16380 | 3.1641 | 0.098652 | . |
| IASMA_3 | 1 | 0.01094 | 0.01094 | 0.2114 | 0.653261 | |
| N_Gemme | 1 | 0.11517 | 0.11517 | 2.2247 | 0.159686 | |
| Defogl | 1 | 0.20554 | 0.20554 | 3.9704 | 0.067732 | . |
| Dirad | 1 | 0.04128 | 0.04128 | 0.7974 | 0.388105 | |
| Vigoria | 2 | 0.52922 | 0.26461 | 5.1114 | 0.023025 | * |
| N_Gemme:Defogl | 1 | 0.12998 | 0.12998 | 2.5107 | 0.137087 | |
| N_Gemme:Dirad | 1 | 0.07001 | 0.07001 | 1.3524 | 0.265754 | |
| Defogl:Dirad | 1 | 0.01882 | 0.01882 | 0.3634 | 0.556971 | |
| N_Gemme:Vigoria | 2 | 0.04755 | 0.02377 | 0.4592 | 0.641629 | |
| Defogl:Vigoria | 2 | 0.02014 | 0.01007 | 0.1945 | 0.825584 | |
| Dirad:Vigoria | 2 | 0.05220 | 0.02610 | 0.5042 | 0.615356 | |
| N_Gemme:Defogl:Dirad | 1 | 0.00576 | 0.00576 | 0.1112 | 0.744104 | |
| Residuals | 13 | 0.67300 | 0.05177 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.694
IASMA_2: n.s
IASMA_3: n.s

KA

Analysis of Variance Table

Response: Br_2009M[, 18]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.036473 | 0.036473 | 2.8284 | 0.1165 |
| IASMA_2 | 1 | 0.003238 | 0.003238 | 0.2511 | 0.6247 |
| IASMA_3 | 1 | 0.000562 | 0.000562 | 0.0436 | 0.8378 |
| N_Gemme | 1 | 0.016689 | 0.016689 | 1.2942 | 0.2758 |
| Defogl | 1 | 0.038172 | 0.038172 | 2.9602 | 0.1090 |
| Dirad | 1 | 0.000446 | 0.000446 | 0.0346 | 0.8553 |
| Vigoria | 2 | 0.065374 | 0.032687 | 2.5348 | 0.1176 |
| N_Gemme:Defogl | 1 | 0.000141 | 0.000141 | 0.0109 | 0.9184 |
| N_Gemme:Dirad | 1 | 0.007822 | 0.007822 | 0.6066 | 0.4500 |
| Defogl:Dirad | 1 | 0.001546 | 0.001546 | 0.1199 | 0.7347 |
| N_Gemme:Vigoria | 2 | 0.006439 | 0.003220 | 0.2497 | 0.7827 |
| Defogl:Vigoria | 2 | 0.012503 | 0.006252 | 0.4848 | 0.6265 |
| Dirad:Vigoria | 2 | 0.035597 | 0.017799 | 1.3803 | 0.2860 |
| N_Gemme:Defogl:Dirad | 1 | 0.000012 | 0.000012 | 0.0009 | 0.9764 |
| Residuals | 13 | 0.167637 | 0.012895 | | |

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

ApaA

```
Analysis of Variance Table

Response: Br_2009M[, 19]
                    Df Sum Sq Mean Sq F value  Pr(>F)  
IASMA_1              1 1947.9 1947.87  3.2514 0.09458 .
IASMA_2              1    0.9    0.85  0.0014 0.97047  
IASMA_3              1 1353.8 1353.82  2.2598 0.15667  
N_Gemme              1  686.5  686.47  1.1459 0.30389  
Defogl               1  212.1  212.06  0.3540 0.56208  
Dirad                1   33.6   33.59  0.0561 0.81650  
Vigoria              2  491.7  245.84  0.4104 0.67171  
N_Gemme:Defogl       1  299.6  299.63  0.5001 0.49192  
N_Gemme:Dirad        1    1.9    1.89  0.0031 0.95610  
Defogl:Dirad         1  358.9  358.95  0.5992 0.45275  
N_Gemme:Vigoria      2  304.9  152.43  0.2544 0.77913  
Defogl:Vigoria       2 1357.9  678.94  1.1333 0.35181  
Dirad:Vigoria        2 1281.9  640.93  1.0699 0.37142  
N_Gemme:Defogl:Dirad  1   89.8   89.80  0.1499 0.70489  
Residuals           13 7788.1  599.08                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

Antoctot1A

```
Analysis of Variance Table

Response: Br_2009M[, 20]
                    Df Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1              1 289638  289638 60.7590 2.969e-06 ***
IASMA_2              1   8115    8115  1.7024   0.21460    
IASMA_3              1   7242    7242  1.5191   0.23958    
N_Gemme              1   2504    2504  0.5253   0.48144    
Defogl               1   1225    1225  0.2570   0.62070    
Dirad                1  42970   42970  9.0140   0.01019 *  
Vigoria              2  14028    7014  1.4714   0.26544    
N_Gemme:Defogl       1   5233    5233  1.0978   0.31384    
N_Gemme:Dirad        1  17768   17768  3.7273   0.07563 .  
Defogl:Dirad         1   1240    1240  0.2600   0.61863    
N_Gemme:Vigoria      2   4389    2195  0.4604   0.64096    
Defogl:Vigoria       2  11602    5801  1.2169   0.32777    
Dirad:Vigoria        2   1957     978  0.2052   0.81705    
N_Gemme:Defogl:Dirad  1    458     458  0.0960   0.76157    
Residuals           13  61971    4767                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.908
IASMA_2: n.s
IASMA_3: n.s
```

Poliftot1A

```
Analysis of Variance Table
```

```
Response: Br_2009M[, 21]
                    Df Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1              1 725696  725696 68.3749 1.554e-06 ***
IASMA_2              1  10269   10269  0.9675   0.34326    
IASMA_3              1    995     995  0.0938   0.76431    
N_Gemme              1  24414   24414  2.3003   0.15328    
Defogl               1   3408    3408  0.3211   0.58058    
Dirad                1  17008   17008  1.6025   0.22776    
Vigoria              2  79836   39918  3.7610   0.05143 .  
N_Gemme:Defogl       1   9725    9725  0.9163   0.35591    
N_Gemme:Dirad        1   1404    1404  0.1323   0.72194    
Defogl:Dirad         1   2077    2077  0.1957   0.66545    
N_Gemme:Vigoria      2   5193    2596  0.2446   0.78651    
Defogl:Vigoria       2  20091   10045  0.9465   0.41329    
Dirad:Vigoria        2   5217    2609  0.2458   0.78564    
N_Gemme:Defogl:Dirad 1   6857    6857  0.6460   0.43599    
Residuals           13 137975   10613                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.917
IASMA_2: n.s
IASMA_3: n.s
```

Antoctot2A

Analysis of Variance Table

```
Response: Br_2009M[, 22]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1              1 1171159 1171159 38.2158 3.314e-05 ***
IASMA_2              1    6624    6624  0.2162    0.6497    
IASMA_3              1    7758    7758  0.2532    0.6233    
N_Gemme              1    1463    1463  0.0478    0.8304    
Defogl               1    2234    2234  0.0729    0.7914    
Dirad                1   74004   74004  2.4148    0.1442    
Vigoria              2   33055   16528  0.5393    0.5957    
N_Gemme:Defogl       1     227     227  0.0074    0.9327    
N_Gemme:Dirad        1   83365   83365  2.7202    0.1230    
Defogl:Dirad         1   13022   13022  0.4249    0.5259    
N_Gemme:Vigoria      2   51879   25939  0.8464    0.4513    
Defogl:Vigoria       2   56670   28335  0.9246    0.4213    
Dirad:Vigoria        2   32510   16255  0.5304    0.6006    
N_Gemme:Defogl:Dirad 1   37698   37698  1.2301    0.2875    
Residuals           13  398397   30646                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.864
IASMA_2: n.s
IASMA_3: n.s
```

Poliftot2A

Analysis of Variance Table

```
Response: Br_2009M[, 23]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1              1 2746094 2746094 52.9987 6.181e-06 ***
```

```
IASMA_2               1    1277    1277  0.0247    0.8776
IASMA_3               1   18894   18894  0.3647    0.5563
N_Gemme               1   54693   54693  1.0556    0.3230
Defogl                1  154778  154778  2.9872    0.1076
Dirad                 1    4235    4235  0.0817    0.7795
Vigoria               2  151412   75706  1.4611    0.2677
N_Gemme:Defogl        1   16150   16150  0.3117    0.5861
N_Gemme:Dirad         1    2584    2584  0.0499    0.8268
Defogl:Dirad          1    5794    5794  0.1118    0.7434
N_Gemme:Vigoria       2   14400    7200  0.1390    0.8715
Defogl:Vigoria        2  235755  117878  2.2750    0.1422
Dirad:Vigoria         2  122693   61347  1.1840    0.3370
N_Gemme:Defogl:Dirad  1    5277    5277  0.1018    0.7547
Residuals            13  673587   51814
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.896
IASMA_2: n.s
IASMA_3: n.s


PvinacciaB

Analysis of Variance Table

Response: Br_2009M[, 24]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1               1 5033905 5033905 38.6505 3.133e-05 ***
IASMA_2               1  626260  626260  4.8084 0.0471147 *
IASMA_3               1  223054  223054  1.7126 0.2133096
N_Gemme               1  100570  100570  0.7722 0.3954949
Defogl                1      73      73  0.0006 0.9814355
Dirad                 1 3226760 3226760 24.7752 0.0002528 ***
Vigoria               2  769645  384822  2.9547 0.0875453 .
N_Gemme:Defogl        1    2329    2329  0.0179 0.8956612
N_Gemme:Dirad         1  208105  208105  1.5978 0.2284057
Defogl:Dirad          1   61326   61326  0.4709 0.5046457
N_Gemme:Vigoria       2  255980  127990  0.9827 0.4004545
Defogl:Vigoria        2  481189  240595  1.8473 0.1967388
Dirad:Vigoria         2 3032263 1516131 11.6409 0.0012666 **
N_Gemme:Defogl:Dirad  1   70169   70169  0.5388 0.4759775
Residuals            13 1693142  130242
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.865
IASMA_2: -0.52
IASMA_3: n.s


DensMostoB

Analysis of Variance Table

Response: Br_2009M[, 25]
                     Df     Sum Sq    Mean Sq F value   Pr(>F)
IASMA_1               1 0.00031299 3.1299e-04  9.6325 0.008388 **
IASMA_2               1 0.00001235 1.2349e-05  0.3800 0.548229
IASMA_3               1 0.00016336 1.6336e-04  5.0274 0.043023 *
N_Gemme               1 0.00002954 2.9540e-05  0.9091 0.357745
```

```
Defogl               1 0.00002766 2.7664e-05  0.8514 0.372968
Dirad                1 0.00005652 5.6520e-05  1.7395 0.209969
Vigoria              2 0.00008793 4.3967e-05  1.3531 0.292527
N_Gemme:Defogl       1 0.00002680 2.6802e-05  0.8248 0.380295
N_Gemme:Dirad        1 0.00000232 2.3190e-06  0.0714 0.793548
Defogl:Dirad         1 0.00000101 1.0080e-06  0.0310 0.862883
N_Gemme:Vigoria      2 0.00004375 2.1875e-05  0.6732 0.526976
Defogl:Vigoria       2 0.00007473 3.7367e-05  1.1500 0.346845
Dirad:Vigoria        2 0.00011428 5.7142e-05  1.7586 0.210888
N_Gemme:Defogl:Dirad 1 0.00000542 5.4230e-06  0.1669 0.689539
Residuals           13 0.00042241 3.2493e-05
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.652
IASMA_2: n.s
IASMA_3: 0.528
```

```
BrixB

Analysis of Variance Table

Response: Br_2009M[, 26]
                    Df  Sum Sq Mean Sq F value   Pr(>F)
IASMA_1              1 14.3821 14.3821  9.5804 0.008525 **
IASMA_2              1  0.6558  0.6558  0.4369 0.520178
IASMA_3              1  7.6328  7.6328  5.0845 0.042027 *
N_Gemme              1  1.2809  1.2809  0.8532 0.372468
Defogl               1  1.2756  1.2756  0.8497 0.373417
Dirad                1  2.5994  2.5994  1.7315 0.210949
Vigoria              2  3.4396  1.7198  1.1456 0.348146
N_Gemme:Defogl       1  1.1569  1.1569  0.7707 0.395949
N_Gemme:Dirad        1  0.1173  0.1173  0.0781 0.784244
Defogl:Dirad         1  0.0905  0.0905  0.0603 0.809924
N_Gemme:Vigoria      2  2.0025  1.0012  0.6670 0.529978
Defogl:Vigoria       2  3.5281  1.7640  1.1751 0.339545
Dirad:Vigoria        2  5.4696  2.7348  1.8217 0.200700
N_Gemme:Defogl:Dirad 1  0.2314  0.2314  0.1541 0.700989
Residuals           13 19.5157  1.5012
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.651
IASMA_2: n.s
IASMA_3: 0.53
```

```
PhB

Analysis of Variance Table

Response: Br_2009M[, 27]
                    Df   Sum Sq  Mean Sq F value   Pr(>F)
IASMA_1              1 0.027160 0.027160  4.2992 0.058562 .
IASMA_2              1 0.056144 0.056144  8.8871 0.010617 *
IASMA_3              1 0.000662 0.000662  0.1048 0.751278
N_Gemme              1 0.000081 0.000081  0.0128 0.911536
Defogl               1 0.002208 0.002208  0.3496 0.564487
Dirad                1 0.035770 0.035770  5.6621 0.033337 *
Vigoria              2 0.099118 0.049559  7.8448 0.005827 **
```

```
N_Gemme:Defogl        1 0.006566 0.006566  1.0393 0.326584
N_Gemme:Dirad         1 0.004026 0.004026  0.6373 0.439046
Defogl:Dirad          1 0.000097 0.000097  0.0154 0.903285
N_Gemme:Vigoria       2 0.012766 0.006383  1.0104 0.390969
Defogl:Vigoria        2 0.012451 0.006225  0.9854 0.399517
Dirad:Vigoria         2 0.050079 0.025039  3.9636 0.045292 *
N_Gemme:Defogl:Dirad  1 0.001428 0.001428  0.2261 0.642330
Residuals            13 0.082127 0.006317
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: 0.637
IASMA_3: n.s


AcTitolB

Analysis of Variance Table

Response: Br_2009M[, 28]
                     Df Sum Sq Mean Sq F value   Pr(>F)
IASMA_1               1 0.1910 0.19103  0.7290 0.408661
IASMA_2               1 2.5024 2.50242  9.5498 0.008606 **
IASMA_3               1 0.1901 0.19010  0.7255 0.409768
N_Gemme               1 0.0289 0.02894  0.1104 0.744934
Defogl                1 0.0011 0.00107  0.0041 0.949931
Dirad                 1 1.4256 1.42563  5.4405 0.036394 *
Vigoria               2 2.5250 1.26249  4.8180 0.027192 *
N_Gemme:Defogl        1 0.0505 0.05054  0.1929 0.667737
N_Gemme:Dirad         1 0.3147 0.31472  1.2011 0.292998
Defogl:Dirad          1 0.0021 0.00206  0.0079 0.930666
N_Gemme:Vigoria       2 0.2933 0.14664  0.5596 0.584610
Defogl:Vigoria        2 1.2956 0.64779  2.4721 0.123059
Dirad:Vigoria         2 0.4863 0.24315  0.9279 0.420055
N_Gemme:Defogl:Dirad  1 0.0929 0.09290  0.3545 0.561791
Residuals            13 3.4065 0.26204
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: -0.651
IASMA_3: n.s


AcTartB

Analysis of Variance Table

Response: Br_2009M[, 29]
                     Df Sum Sq Mean Sq F value   Pr(>F)
IASMA_1               1 0.6868  0.6868  2.6403 0.128169
IASMA_2               1 4.0644  4.0644 15.6251 0.001653 **
IASMA_3               1 0.0319  0.0319  0.1225 0.731893
N_Gemme               1 0.0029  0.0029  0.0113 0.916995
Defogl                1 0.0075  0.0075  0.0289 0.867662
Dirad                 1 1.4708  1.4708  5.6543 0.033440 *
Vigoria               2 2.8472  1.4236  5.4728 0.018865 *
N_Gemme:Defogl        1 0.1093  0.1093  0.4203 0.528094
N_Gemme:Dirad         1 0.3436  0.3436  1.3210 0.271127
Defogl:Dirad          1 0.0331  0.0331  0.1271 0.727136
```

```
N_Gemme:Vigoria       2 0.1296  0.0648  0.2491 0.783163
Defogl:Vigoria        2 0.8849  0.4425  1.7011 0.220691
Dirad:Vigoria         2 0.5355  0.2678  1.0294 0.384602
N_Gemme:Defogl:Dirad  1 0.0240  0.0240  0.0921 0.766323
Residuals            13 3.3815  0.2601
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: -0.739
IASMA_3: n.s


AcMalicoB

Analysis of Variance Table

Response: Br_2009M[, 30]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1               1 1.73227 1.73227 63.5129 2.332e-06 ***
IASMA_2               1 0.59465 0.59465 21.8028 0.0004389 ***
IASMA_3               1 0.01091 0.01091  0.4000 0.5380770
N_Gemme               1 0.00705 0.00705  0.2586 0.6195791
Defogl                1 0.01756 0.01756  0.6437 0.4368006
Dirad                 1 0.03836 0.03836  1.4065 0.2568576
Vigoria               2 0.38515 0.19258  7.0607 0.0083967 **
N_Gemme:Defogl        1 0.00201 0.00201  0.0735 0.7905105
N_Gemme:Dirad         1 0.02423 0.02423  0.8883 0.3631326
Defogl:Dirad          1 0.02803 0.02803  1.0276 0.3292296
N_Gemme:Vigoria       2 0.02539 0.01270  0.4655 0.6379008
Defogl:Vigoria        2 0.05101 0.02551  0.9352 0.4173957
Dirad:Vigoria         2 0.12022 0.06011  2.2040 0.1498925
N_Gemme:Defogl:Dirad  1 0.02213 0.02213  0.8113 0.3841276
Residuals            13 0.35457 0.02727
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.911
IASMA_2: 0.791
IASMA_3: n.s


KB

Analysis of Variance Table

Response: Br_2009M[, 31]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.080390 0.080390  7.5670 0.01651 *
IASMA_2               1 0.071591 0.071591  6.7388 0.02218 *
IASMA_3               1 0.002231 0.002231  0.2100 0.65436
N_Gemme               1 0.001322 0.001322  0.1245 0.72990
Defogl                1 0.009714 0.009714  0.9144 0.35640
Dirad                 1 0.020927 0.020927  1.9698 0.18390
Vigoria               2 0.140080 0.070040  6.5928 0.01055 *
N_Gemme:Defogl        1 0.020995 0.020995  1.9762 0.18324
N_Gemme:Dirad         1 0.000170 0.000170  0.0160 0.90118
Defogl:Dirad          1 0.009549 0.009549  0.8989 0.36037
N_Gemme:Vigoria       2 0.005097 0.002549  0.2399 0.79012
Defogl:Vigoria        2 0.009561 0.004780  0.4500 0.64722
Dirad:Vigoria         2 0.132538 0.066269  6.2378 0.01261 *
```

```
N_Gemme:Defogl:Dirad  1 0.004492 0.004492  0.4229 0.52683
Residuals            13 0.138109 0.010624
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.607
IASMA_2: 0.584
IASMA_3: n.s


ApaB

Analysis of Variance Table

Response: Br_2009M[, 32]
                     Df Sum Sq Mean Sq F value   Pr(>F)
IASMA_1               1  792.3  792.28  2.2126 0.160735
IASMA_2               1    0.2    0.24  0.0007 0.979649
IASMA_3               1  158.3  158.25  0.4420 0.517800
N_Gemme               1  163.6  163.57  0.4568 0.510971
Defogl                1 1356.0 1355.99  3.7869 0.073599 .
Dirad                 1    0.4    0.39  0.0011 0.974255
Vigoria               2  958.2  479.11  1.3380 0.296203
N_Gemme:Defogl        1  172.0  171.98  0.4803 0.500486
N_Gemme:Dirad         1  425.8  425.78  1.1891 0.295311
Defogl:Dirad          1  118.0  118.02  0.3296 0.575699
N_Gemme:Vigoria       2   19.1    9.55  0.0267 0.973739
Defogl:Vigoria        2 1265.4  632.68  1.7669 0.209512
Dirad:Vigoria         2 5674.2 2837.10  7.9233 0.005624 **
N_Gemme:Defogl:Dirad  1  691.8  691.83  1.9321 0.187871
Residuals            13 4654.9  358.07
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


Antoctot1B

Analysis of Variance Table

Response: Br_2009M[, 33]
                     Df Sum Sq Mean Sq F value   Pr(>F)
IASMA_1               1  64854   64854 16.7188 0.001280 **
IASMA_2               1  10114   10114  2.6073 0.130370
IASMA_3               1     78      78  0.0200 0.889595
N_Gemme               1   1818    1818  0.4687 0.505622
Defogl                1   3073    3073  0.7921 0.389634
Dirad                 1   6290    6290  1.6214 0.225192
Vigoria               2   3047    1524  0.3928 0.682909
N_Gemme:Defogl        1   4970    4970  1.2811 0.278134
N_Gemme:Dirad         1   1143    1143  0.2946 0.596481
Defogl:Dirad          1   5928    5928  1.5282 0.238260
N_Gemme:Vigoria       2   2624    1312  0.3383 0.719104
Defogl:Vigoria        2    191      96  0.0246 0.975698
Dirad:Vigoria         2  15484    7742  1.9959 0.175424
N_Gemme:Defogl:Dirad  1   6130    6130  1.5803 0.230833
Residuals            13  50428    3879
---
```

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.75
IASMA_2: n.s
IASMA_3: n.s

Poliftot1B

Analysis of Variance Table

Response: Br_2009M[, 34]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 242221 | 242221 | 32.8478 | 6.922e-05 | *** |
| IASMA_2 | 1 | 11193 | 11193 | 1.5179 | 0.23976 | |
| IASMA_3 | 1 | 2407 | 2407 | 0.3264 | 0.57753 | |
| N_Gemme | 1 | 2003 | 2003 | 0.2716 | 0.61102 | |
| Defogl | 1 | 23953 | 23953 | 3.2482 | 0.09472 | . |
| Dirad | 1 | 15506 | 15506 | 2.1028 | 0.17072 | |
| Vigoria | 2 | 15787 | 7893 | 1.0704 | 0.37123 | |
| N_Gemme:Defogl | 1 | 1711 | 1711 | 0.2320 | 0.63803 | |
| N_Gemme:Dirad | 1 | 27232 | 27232 | 3.6929 | 0.07684 | . |
| Defogl:Dirad | 1 | 2034 | 2034 | 0.2758 | 0.60830 | |
| N_Gemme:Vigoria | 2 | 4268 | 2134 | 0.2894 | 0.75343 | |
| Defogl:Vigoria | 2 | 15893 | 7947 | 1.0776 | 0.36895 | |
| Dirad:Vigoria | 2 | 47406 | 23703 | 3.2144 | 0.07341 | . |
| N_Gemme:Defogl:Dirad | 1 | 2433 | 2433 | 0.3300 | 0.57546 | |
| Residuals | 13 | 95863 | 7374 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.846
IASMA_2: n.s
IASMA_3: n.s

Antoctot2B

Analysis of Variance Table

Response: Br_2009M[, 35]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 442862 | 442862 | 11.5857 | 0.004708 | ** |
| IASMA_2 | 1 | 68040 | 68040 | 1.7800 | 0.205052 | |
| IASMA_3 | 1 | 11318 | 11318 | 0.2961 | 0.595555 | |
| N_Gemme | 1 | 2104 | 2104 | 0.0550 | 0.818175 | |
| Defogl | 1 | 7661 | 7661 | 0.2004 | 0.661749 | |
| Dirad | 1 | 7588 | 7588 | 0.1985 | 0.663262 | |
| Vigoria | 2 | 51259 | 25629 | 0.6705 | 0.528286 | |
| N_Gemme:Defogl | 1 | 3575 | 3575 | 0.0935 | 0.764596 | |
| N_Gemme:Dirad | 1 | 5821 | 5821 | 0.1523 | 0.702693 | |
| Defogl:Dirad | 1 | 10653 | 10653 | 0.2787 | 0.606450 | |
| N_Gemme:Vigoria | 2 | 2149 | 1075 | 0.0281 | 0.972335 | |
| Defogl:Vigoria | 2 | 34363 | 17181 | 0.4495 | 0.647511 | |
| Dirad:Vigoria | 2 | 17534 | 8767 | 0.2294 | 0.798195 | |
| N_Gemme:Defogl:Dirad | 1 | 8 | 8 | 0.0002 | 0.988978 | |
| Residuals | 13 | 496924 | 38225 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.686

```
IASMA_2: n.s
IASMA_3: n.s
```

Poliftot2B

```
Analysis of Variance Table

Response: Br_2009M[, 36]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1              1 1676023 1676023 23.4604 0.0003208 ***
IASMA_2              1   83061   83061  1.1627 0.3005149    
IASMA_3              1  136536  136536  1.9112 0.1901218    
N_Gemme              1   36517   36517  0.5111 0.4872833    
Defogl               1   92093   92093  1.2891 0.2767164    
Dirad                1    4853    4853  0.0679 0.7984531    
Vigoria              2  280523  140261  1.9633 0.1798536    
N_Gemme:Defogl       1   21583   21583  0.3021 0.5918813    
N_Gemme:Dirad        1  129731  129731  1.8159 0.2008162    
Defogl:Dirad         1     100     100  0.0014 0.9707291    
N_Gemme:Vigoria      2    1886     943  0.0132 0.9869017    
Defogl:Vigoria       2   21165   10582  0.1481 0.8637544    
Dirad:Vigoria        2   35251   17625  0.2467 0.7849405    
N_Gemme:Defogl:Dirad  1   65557   65557  0.9177 0.3555701    
Residuals           13  928727   71441                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.802
IASMA_2: n.s
IASMA_3: n.s
```

CACCIAGRANDE 2008M IBIMET

PvinacciaA

```
Analysis of Variance Table

Response: Ca_2008M[, 11]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_2             1 1013525 1013525 23.1147 0.0029770 ** 
IBIMET_3             1  120197  120197  2.7413 0.1488675    
N_Gemme              1   21903   21903  0.4995 0.5062147    
Defogl               1 1472499 1472499 33.5822 0.0011566 ** 
Dirad                1 1731523 1731523 39.4896 0.0007556 ***
Vigoria              2   14260    7130  0.1626 0.8535439    
N_Gemme:Defogl       1   31370   31370  0.7154 0.4300778    
N_Gemme:Dirad        1  485571  485571 11.0741 0.0158505 *  
Defogl:Dirad         1  321157  321157  7.3244 0.0352763 *  
N_Gemme:Vigoria      2  307262  153631  3.5038 0.0981455 .  
Defogl:Vigoria       2   13001    6500  0.1482 0.8652796    
Dirad:Vigoria        2   47492   23746  0.5416 0.6078258    
N_Gemme:Defogl:Dirad  1   21228   21228  0.4841 0.5125939    
Residuals            6  263085   43848                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.891
IBIMET_3: n.s
```

DensMostoA

Analysis of Variance Table

Response: Ca_2008M[, 12]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 6.3707e-05 | 6.3707e-05 | 30.4282 | 0.0014922 | ** |
| IBIMET_3 | 1 | 2.6777e-05 | 2.6777e-05 | 12.7894 | 0.0116961 | * |
| N_Gemme | 1 | 1.1562e-05 | 1.1562e-05 | 5.5222 | 0.0570627 | . |
| Defogl | 1 | 1.2094e-04 | 1.2094e-04 | 57.7639 | 0.0002701 | *** |
| Dirad | 1 | 1.0180e-04 | 1.0180e-04 | 48.6241 | 0.0004324 | *** |
| Vigoria | 2 | 1.5838e-05 | 7.9190e-06 | 3.7823 | 0.0865437 | . |
| N_Gemme:Defogl | 1 | 1.7730e-06 | 1.7730e-06 | 0.8470 | 0.3929091 | |
| N_Gemme:Dirad | 1 | 1.9018e-05 | 1.9018e-05 | 9.0837 | 0.0235812 | * |
| Defogl:Dirad | 1 | 1.6700e-07 | 1.6700e-07 | 0.0796 | 0.7872647 | |
| N_Gemme:Vigoria | 2 | 1.3333e-05 | 6.6660e-06 | 3.1841 | 0.1141672 | |
| Defogl:Vigoria | 2 | 5.3970e-06 | 2.6980e-06 | 1.2888 | 0.3422578 | |
| Dirad:Vigoria | 2 | 6.6490e-06 | 3.3250e-06 | 1.5879 | 0.2795880 | |
| N_Gemme:Defogl:Dirad | 1 | 2.1200e-07 | 2.1200e-07 | 0.1014 | 0.7609694 | |
| Residuals | 6 | 1.2562e-05 | 2.0940e-06 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.914
IBIMET_3: -0.825

BrixA

Analysis of Variance Table

Response: Ca_2008M[, 13]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 3.0559 | 3.0559 | 27.0170 | 0.0020192 | ** |
| IBIMET_3 | 1 | 1.1491 | 1.1491 | 10.1588 | 0.0189011 | * |
| N_Gemme | 1 | 0.6440 | 0.6440 | 5.6935 | 0.0543135 | . |
| Defogl | 1 | 6.2159 | 6.2159 | 54.9540 | 0.0003098 | *** |
| Dirad | 1 | 4.9070 | 4.9070 | 43.3822 | 0.0005881 | *** |
| Vigoria | 2 | 0.8308 | 0.4154 | 3.6726 | 0.0908842 | . |
| N_Gemme:Defogl | 1 | 0.0828 | 0.0828 | 0.7322 | 0.4250220 | |
| N_Gemme:Dirad | 1 | 0.9022 | 0.9022 | 7.9759 | 0.0301885 | * |
| Defogl:Dirad | 1 | 0.0422 | 0.0422 | 0.3731 | 0.5637148 | |
| N_Gemme:Vigoria | 2 | 0.5778 | 0.2889 | 2.5543 | 0.1575707 | |
| Defogl:Vigoria | 2 | 0.2998 | 0.1499 | 1.3253 | 0.3336776 | |
| Dirad:Vigoria | 2 | 0.3796 | 0.1898 | 1.6781 | 0.2637239 | |
| N_Gemme:Defogl:Dirad | 1 | 0.0062 | 0.0062 | 0.0547 | 0.8228429 | |
| Residuals | 6 | 0.6787 | 0.1131 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.905
IBIMET_3: -0.793

PhA

Analysis of Variance Table

Response: Ca_2008M[, 14]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|

| | | | | | | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 0.0117501 | 0.0117501 | 6.7492 | 0.04078 | * |
| IBIMET_3 | 1 | 0.0000721 | 0.0000721 | 0.0414 | 0.84550 | |
| N_Gemme | 1 | 0.0024899 | 0.0024899 | 1.4302 | 0.27685 | |
| Defogl | 1 | 0.0216561 | 0.0216561 | 12.4390 | 0.01241 | * |
| Dirad | 1 | 0.0149147 | 0.0149147 | 8.5669 | 0.02639 | * |
| Vigoria | 2 | 0.0056562 | 0.0028281 | 1.6244 | 0.27302 | |
| N_Gemme:Defogl | 1 | 0.0004147 | 0.0004147 | 0.2382 | 0.64284 | |
| N_Gemme:Dirad | 1 | 0.0137654 | 0.0137654 | 7.9067 | 0.03068 | * |
| Defogl:Dirad | 1 | 0.0007927 | 0.0007927 | 0.4553 | 0.52494 | |
| N_Gemme:Vigoria | 2 | 0.0029568 | 0.0014784 | 0.8492 | 0.47344 | |
| Defogl:Vigoria | 2 | 0.0095953 | 0.0047977 | 2.7557 | 0.14160 | |
| Dirad:Vigoria | 2 | 0.0014902 | 0.0007451 | 0.4280 | 0.67026 | |
| N_Gemme:Defogl:Dirad | 1 | 0.0048959 | 0.0048959 | 2.8121 | 0.14457 | |
| Residuals | 6 | 0.0104458 | 0.0017410 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.728
IBIMET_3: n.s

AcTitolA

Analysis of Variance Table

Response: Ca_2008M[, 15]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 0.15160 | 0.15160 | 3.2235 | 0.122730 | |
| IBIMET_3 | 1 | 0.75320 | 0.75320 | 16.0152 | 0.007104 | ** |
| N_Gemme | 1 | 0.01939 | 0.01939 | 0.4123 | 0.544550 | |
| Defogl | 1 | 0.33659 | 0.33659 | 7.1568 | 0.036770 | * |
| Dirad | 1 | 0.27648 | 0.27648 | 5.8787 | 0.051539 | . |
| Vigoria | 2 | 0.37449 | 0.18724 | 3.9814 | 0.079349 | . |
| N_Gemme:Defogl | 1 | 0.01853 | 0.01853 | 0.3941 | 0.553285 | |
| N_Gemme:Dirad | 1 | 0.04660 | 0.04660 | 0.9908 | 0.357991 | |
| Defogl:Dirad | 1 | 0.02683 | 0.02683 | 0.5704 | 0.478692 | |
| N_Gemme:Vigoria | 2 | 0.02995 | 0.01497 | 0.3184 | 0.738895 | |
| Defogl:Vigoria | 2 | 0.00119 | 0.00059 | 0.0126 | 0.987472 | |
| Dirad:Vigoria | 2 | 0.00156 | 0.00078 | 0.0166 | 0.983576 | |
| N_Gemme:Defogl:Dirad | 1 | 0.00633 | 0.00633 | 0.1345 | 0.726408 | |
| Residuals | 6 | 0.28218 | 0.04703 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: 0.853

AcTartA

Analysis of Variance Table

Response: Ca_2008M[, 16]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 0.00108 | 0.00108 | 0.0269 | 0.875178 | |
| IBIMET_3 | 1 | 1.06698 | 1.06698 | 26.4646 | 0.002127 | ** |
| N_Gemme | 1 | 0.01159 | 0.01159 | 0.2874 | 0.611175 | |
| Defogl | 1 | 0.08135 | 0.08135 | 2.0178 | 0.205283 | |
| Dirad | 1 | 0.20270 | 0.20270 | 5.0277 | 0.066143 | . |
| Vigoria | 2 | 0.95450 | 0.47725 | 11.8373 | 0.008266 | ** |
| N_Gemme:Defogl | 1 | 0.10052 | 0.10052 | 2.4933 | 0.165409 | |

```
N_Gemme:Dirad         1 0.00273 0.00273  0.0677 0.803377
Defogl:Dirad          1 0.00734 0.00734  0.1821 0.684433
N_Gemme:Vigoria       2 0.00702 0.00351  0.0871 0.917732
Defogl:Vigoria        2 0.00647 0.00324  0.0803 0.923851
Dirad:Vigoria         2 0.02654 0.01327  0.3291 0.731754
N_Gemme:Defogl:Dirad  1 0.00872 0.00872  0.2163 0.658305
Residuals             6 0.24190 0.04032
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: 0.903
```

AcMalicoA

Analysis of Variance Table

```
Response: Ca_2008M[, 17]
                     Df  Sum Sq Mean Sq  F value   Pr(>F)
IBIMET_2              1 1.28316 1.28316 184.5748 9.87e-06 ***
IBIMET_3              1 0.05908 0.05908   8.4976 0.026803 *
N_Gemme               1 0.00200 0.00200   0.2873 0.611232
Defogl                1 0.16106 0.16106  23.1679 0.002960 **
Dirad                 1 0.08174 0.08174  11.7574 0.013990 *
Vigoria               2 0.26744 0.13372  19.2348 0.002456 **
N_Gemme:Defogl        1 0.00210 0.00210   0.3027 0.602069
N_Gemme:Dirad         1 0.03918 0.03918   5.6362 0.055213 .
Defogl:Dirad          1 0.02045 0.02045   2.9414 0.137161
N_Gemme:Vigoria       2 0.00849 0.00425   0.6109 0.573462
Defogl:Vigoria        2 0.01028 0.00514   0.7392 0.516437
Dirad:Vigoria         2 0.01027 0.00514   0.7389 0.516588
N_Gemme:Defogl:Dirad  1 0.00593 0.00593   0.8525 0.391471
Residuals             6 0.04171 0.00695
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.984
IBIMET_3: 0.766
```

KA

Analysis of Variance Table

```
Response: Ca_2008M[, 18]
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
IBIMET_2              1 0.061770 0.061770 17.4583 0.005824 **
IBIMET_3              1 0.002593 0.002593  0.7328 0.424838
N_Gemme               1 0.003440 0.003440  0.9723 0.362175
Defogl                1 0.011641 0.011641  3.2902 0.119627
Dirad                 1 0.053092 0.053092 15.0055 0.008231 **
Vigoria               2 0.031079 0.015539  4.3919 0.066848 .
N_Gemme:Defogl        1 0.005080 0.005080  1.4358 0.276004
N_Gemme:Dirad         1 0.004362 0.004362  1.2327 0.309384
Defogl:Dirad          1 0.001749 0.001749  0.4945 0.508295
N_Gemme:Vigoria       2 0.017199 0.008599  2.4304 0.168600
Defogl:Vigoria        2 0.014166 0.007083  2.0019 0.215749
Dirad:Vigoria         2 0.006346 0.003173  0.8968 0.456276
N_Gemme:Defogl:Dirad  1 0.011428 0.011428  3.2300 0.122423
Residuals             6 0.021229 0.003538
```

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.863
IBIMET_3: n.s

ApaA

Analysis of Variance Table

Response: Ca_2008M[, 19]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 1923.47 | 1923.47 | 12.0033 | 0.01339 | * |
| IBIMET_3 | 1 | 1309.70 | 1309.70 | 8.1731 | 0.02884 | * |
| N_Gemme | 1 | 178.14 | 178.14 | 1.1117 | 0.33232 | |
| Defogl | 1 | 693.70 | 693.70 | 4.3290 | 0.08266 | . |
| Dirad | 1 | 17.89 | 17.89 | 0.1117 | 0.74964 | |
| Vigoria | 2 | 229.63 | 114.82 | 0.7165 | 0.52597 | |
| N_Gemme:Defogl | 1 | 75.19 | 75.19 | 0.4692 | 0.51892 | |
| N_Gemme:Dirad | 1 | 9.76 | 9.76 | 0.0609 | 0.81328 | |
| Defogl:Dirad | 1 | 6.50 | 6.50 | 0.0406 | 0.84706 | |
| N_Gemme:Vigoria | 2 | 124.79 | 62.40 | 0.3894 | 0.69344 | |
| Defogl:Vigoria | 2 | 97.12 | 48.56 | 0.3030 | 0.74924 | |
| Dirad:Vigoria | 2 | 9.62 | 4.81 | 0.0300 | 0.97057 | |
| N_Gemme:Defogl:Dirad | 1 | 81.51 | 81.51 | 0.5086 | 0.50251 | |
| Residuals | 6 | 961.47 | 160.25 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.817
IBIMET_3: 0.759

Antoctot1A

Analysis of Variance Table

Response: Ca_2008M[, 20]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 90042 | 90042 | 23.0851 | 0.002986 | ** |
| IBIMET_3 | 1 | 27511 | 27511 | 7.0533 | 0.037735 | * |
| N_Gemme | 1 | 3511 | 3511 | 0.9001 | 0.379381 | |
| Defogl | 1 | 4499 | 4499 | 1.1534 | 0.324123 | |
| Dirad | 1 | 15549 | 15549 | 3.9865 | 0.092861 | . |
| Vigoria | 2 | 52913 | 26456 | 6.7829 | 0.028838 | * |
| N_Gemme:Defogl | 1 | 196 | 196 | 0.0501 | 0.830242 | |
| N_Gemme:Dirad | 1 | 3253 | 3253 | 0.8341 | 0.396307 | |
| Defogl:Dirad | 1 | 14817 | 14817 | 3.7988 | 0.099189 | . |
| N_Gemme:Vigoria | 2 | 11103 | 5551 | 1.4233 | 0.311987 | |
| Defogl:Vigoria | 2 | 26914 | 13457 | 3.4501 | 0.100617 | |
| Dirad:Vigoria | 2 | 5255 | 2627 | 0.6736 | 0.544607 | |
| N_Gemme:Defogl:Dirad | 1 | 8311 | 8311 | 2.1309 | 0.194650 | |
| Residuals | 6 | 23403 | 3900 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.891
IBIMET_3: -0.735

Poliftot1A

Analysis of Variance Table

Response: Ca_2008M[, 21]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 175033 | 175033 | 9.8094 | 0.02027 | * |
| IBIMET_3 | 1 | 56598 | 56598 | 3.1720 | 0.12520 | |
| N_Gemme | 1 | 13724 | 13724 | 0.7691 | 0.41422 | |
| Defogl | 1 | 141287 | 141287 | 7.9182 | 0.03060 | * |
| Dirad | 1 | 97 | 97 | 0.0054 | 0.94359 | |
| Vigoria | 2 | 321500 | 160750 | 9.0089 | 0.01559 | * |
| N_Gemme:Defogl | 1 | 2354 | 2354 | 0.1319 | 0.72888 | |
| N_Gemme:Dirad | 1 | 8325 | 8325 | 0.4666 | 0.52006 | |
| Defogl:Dirad | 1 | 79266 | 79266 | 4.4423 | 0.07963 | . |
| N_Gemme:Vigoria | 2 | 40282 | 20141 | 1.1288 | 0.38362 | |
| Defogl:Vigoria | 2 | 50911 | 25455 | 1.4266 | 0.31128 | |
| Dirad:Vigoria | 2 | 30281 | 15140 | 0.8485 | 0.47368 | |
| N_Gemme:Defogl:Dirad | 1 | 24806 | 24806 | 1.3902 | 0.28300 | |
| Residuals | 6 | 107060 | 17843 | | | |

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.788
IBIMET_3: n.s

Antoctot2A

Analysis of Variance Table

Response: Ca_2008M[, 22]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 72815 | 72815 | 26.7460 | 0.002071 | ** |
| IBIMET_3 | 1 | 5731 | 5731 | 2.1052 | 0.196994 | |
| N_Gemme | 1 | 4968 | 4968 | 1.8249 | 0.225442 | |
| Defogl | 1 | 29961 | 29961 | 11.0050 | 0.016057 | * |
| Dirad | 1 | 36141 | 36141 | 13.2752 | 0.010790 | * |
| Vigoria | 2 | 6911 | 3456 | 1.2693 | 0.346974 | |
| N_Gemme:Defogl | 1 | 2381 | 2381 | 0.8745 | 0.385810 | |
| N_Gemme:Dirad | 1 | 3771 | 3771 | 1.3850 | 0.283814 | |
| Defogl:Dirad | 1 | 20493 | 20493 | 7.5274 | 0.033575 | * |
| N_Gemme:Vigoria | 2 | 13885 | 6943 | 2.5501 | 0.157927 | |
| Defogl:Vigoria | 2 | 2314 | 1157 | 0.4250 | 0.672048 | |
| Dirad:Vigoria | 2 | 2762 | 1381 | 0.5072 | 0.625868 | |
| N_Gemme:Defogl:Dirad | 1 | 78 | 78 | 0.0287 | 0.871106 | |
| Residuals | 6 | 16335 | 2722 | | | |

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.904
IBIMET_3: n.s

Poliftot2A

Analysis of Variance Table

Response: Ca_2008M[, 23]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 52397 | 52397 | 7.1442 | 0.036885 | * |

```
IBIMET_3             1   3126    3126  0.4262 0.538070
N_Gemme              1  17325   17325  2.3622 0.175215
Defogl               1   6140    6140  0.8372 0.395492
Dirad                1      6       6  0.0007 0.979041
Vigoria              2 128504   64252  8.7606 0.016599 *
N_Gemme:Defogl       1     13      13  0.0018 0.967293
N_Gemme:Dirad        1    783     783  0.1068 0.754941
Defogl:Dirad         1 123394  123394 16.8244 0.006345 **
N_Gemme:Vigoria      2  48352   24176  3.2964 0.108167
Defogl:Vigoria       2    264     132  0.0180 0.982232
Dirad:Vigoria        2  38814   19407  2.6461 0.150011
N_Gemme:Defogl:Dirad 1     57      57  0.0078 0.932424
Residuals            6  44005    7334
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.737
IBIMET_3: n.s


PvinacciaB

Analysis of Variance Table

Response: Ca_2008M[, 24]
                    Df  Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2             1  478154  478154  3.0282 0.13248
IBIMET_3             1   27219   27219  0.1724 0.69244
N_Gemme              1   87383   87383  0.5534 0.48503
Defogl               1  358079  358079  2.2678 0.18280
Dirad                1 1176023 1176023  7.4479 0.03423 *
Vigoria              2  226990  113495  0.7188 0.52500
N_Gemme:Defogl       1   29653   29653  0.1878 0.67991
N_Gemme:Dirad        1     762     762  0.0048 0.94688
Defogl:Dirad         1   87086   87086  0.5515 0.48574
N_Gemme:Vigoria      2  161517   80758  0.5115 0.62360
Defogl:Vigoria       2  169684   84842  0.5373 0.61002
Dirad:Vigoria        2  260708  130354  0.8255 0.48226
N_Gemme:Defogl:Dirad 1   12052   12052  0.0763 0.79161
Residuals            6  947402  157900
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


DensMostoB

Analysis of Variance Table

Response: Ca_2008M[, 25]
                    Df     Sum Sq    Mean Sq F value  Pr(>F)
IBIMET_2             1 1.1062e-04 1.1062e-04  4.6645 0.07410 .
IBIMET_3             1 1.5261e-05 1.5261e-05  0.6435 0.45303
N_Gemme              1 1.8477e-05 1.8477e-05  0.7791 0.41137
Defogl               1 6.1144e-05 6.1144e-05  2.5783 0.15946
Dirad                1 1.5260e-04 1.5260e-04  6.4351 0.04427 *
Vigoria              2 2.9860e-06 1.4930e-06  0.0629 0.93960
N_Gemme:Defogl       1 2.0840e-06 2.0840e-06  0.0879 0.77688
N_Gemme:Dirad        1 4.9657e-05 4.9657e-05  2.0939 0.19803
```

```
Defogl:Dirad          1 4.3500e-07 4.3500e-07  0.0183 0.89671
N_Gemme:Vigoria       2 1.1408e-05 5.7040e-06  0.2405 0.79345
Defogl:Vigoria        2 1.5022e-05 7.5110e-06  0.3167 0.74000
Dirad:Vigoria         2 7.9400e-07 3.9700e-07  0.0167 0.98345
N_Gemme:Defogl:Dirad  1 8.4000e-08 8.4000e-08  0.0036 0.95441
Residuals             6 1.4229e-04 2.3715e-05
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s
```

BrixB

```
Analysis of Variance Table

Response: Ca_2008M[, 26]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2              1 5.5252  5.5252  4.7604 0.07188 .
IBIMET_3              1 0.7480  0.7480  0.6445 0.45272
N_Gemme               1 0.8009  0.8009  0.6901 0.43794
Defogl                1 3.0925  3.0925  2.6644 0.15374
Dirad                 1 7.4476  7.4476  6.4167 0.04449 *
Vigoria               2 0.2109  0.1054  0.0908 0.91439
N_Gemme:Defogl        1 0.0812  0.0812  0.0700 0.80019
N_Gemme:Dirad         1 2.4504  2.4504  2.1112 0.19644
Defogl:Dirad          1 0.0029  0.0029  0.0025 0.96179
N_Gemme:Vigoria       2 0.5546  0.2773  0.2389 0.79464
Defogl:Vigoria        2 0.8160  0.4080  0.3515 0.71721
Dirad:Vigoria         2 0.0644  0.0322  0.0277 0.97277
N_Gemme:Defogl:Dirad  1 0.0155  0.0155  0.0134 0.91173
Residuals             6 6.9640  1.1607
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s
```

PhB

```
Analysis of Variance Table

Response: Ca_2008M[, 27]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
IBIMET_2              1 0.002705 0.002705  0.6632 0.44653
IBIMET_3              1 0.000019 0.000019  0.0047 0.94734
N_Gemme               1 0.005703 0.005703  1.3982 0.28175
Defogl                1 0.029096 0.029096  7.1341 0.03698 *
Dirad                 1 0.034765 0.034765  8.5240 0.02665 *
Vigoria               2 0.011849 0.005925  1.4526 0.30586
N_Gemme:Defogl        1 0.002303 0.002303  0.5646 0.48085
N_Gemme:Dirad         1 0.009632 0.009632  2.3617 0.17526
Defogl:Dirad          1 0.000343 0.000343  0.0841 0.78155
N_Gemme:Vigoria       2 0.001652 0.000826  0.2025 0.82204
Defogl:Vigoria        2 0.034371 0.017186  4.2137 0.07193 .
Dirad:Vigoria         2 0.003242 0.001621  0.3975 0.68848
N_Gemme:Defogl:Dirad  1 0.006872 0.006872  1.6848 0.24194
Residuals             6 0.024471 0.004079
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


AcTitolB

Analysis of Variance Table

Response: Ca_2008M[, 28]
                     Df  Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_2              1 0.34371 0.34371 42.1575 0.0006349 ***
IBIMET_3              1 0.17650 0.17650 21.6479 0.0034937 ** 
N_Gemme               1 0.12276 0.12276 15.0571 0.0081674 ** 
Defogl                1 0.04417 0.04417  5.4170 0.0588454 .  
Dirad                 1 0.02143 0.02143  2.6284 0.1560925    
Vigoria               2 0.00129 0.00065  0.0792 0.9247657    
N_Gemme:Defogl        1 0.13612 0.13612 16.6953 0.0064583 ** 
N_Gemme:Dirad         1 0.01726 0.01726  2.1172 0.1958943    
Defogl:Dirad          1 0.02663 0.02663  3.2666 0.1207127    
N_Gemme:Vigoria       2 0.04122 0.02061  2.5279 0.1598379    
Defogl:Vigoria        2 0.03031 0.01515  1.8587 0.2354027    
Dirad:Vigoria         2 0.06173 0.03087  3.7858 0.0864100 .  
N_Gemme:Defogl:Dirad  1 0.00254 0.00254  0.3121 0.5966181    
Residuals             6 0.04892 0.00815                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.936
IBIMET_3: 0.885


AcTartB

Analysis of Variance Table

Response: Ca_2008M[, 29]
                     Df   Sum Sq  Mean Sq F value    Pr(>F)    
IBIMET_2              1 0.110182 0.110182 25.6540 0.0022994 ** 
IBIMET_3              1 0.301445 0.301445 70.1867 0.0001574 ***
N_Gemme               1 0.002367 0.002367  0.5510 0.4859277    
Defogl                1 0.002552 0.002552  0.5941 0.4700784    
Dirad                 1 0.000729 0.000729  0.1697 0.6946765    
Vigoria               2 0.011685 0.005842  1.3603 0.3256915    
N_Gemme:Defogl        1 0.259065 0.259065 60.3191 0.0002397 ***
N_Gemme:Dirad         1 0.002179 0.002179  0.5074 0.5030078    
Defogl:Dirad          1 0.031338 0.031338  7.2965 0.0355190 *  
N_Gemme:Vigoria       2 0.030683 0.015342  3.5720 0.0951185 .  
Defogl:Vigoria        2 0.100038 0.050019 11.6462 0.0085940 ** 
Dirad:Vigoria         2 0.151650 0.075825 17.6546 0.0030642 ** 
N_Gemme:Defogl:Dirad  1 0.006863 0.006863  1.5980 0.2530743    
Residuals             6 0.025769 0.004295                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.9
IBIMET_3: 0.96


AcMalicoB
```

```
Analysis of Variance Table

Response: Ca_2008M[, 30]
                     Df  Sum Sq Mean Sq  F value    Pr(>F)    
IBIMET_2              1 1.89622 1.89622 271.0364 3.201e-06 ***
IBIMET_3              1 0.00264 0.00264   0.3777   0.56142    
N_Gemme               1 0.03857 0.03857   5.5134   0.05721 .  
Defogl                1 0.01149 0.01149   1.6422   0.24732    
Dirad                 1 0.00048 0.00048   0.0684   0.80237    
Vigoria               2 0.05553 0.02776   3.9685   0.07979 .  
N_Gemme:Defogl        1 0.02416 0.02416   3.4529   0.11251    
N_Gemme:Dirad         1 0.01929 0.01929   2.7565   0.14793    
Defogl:Dirad          1 0.00362 0.00362   0.5178   0.49884    
N_Gemme:Vigoria       2 0.07221 0.03611   5.1607   0.04968 *  
Defogl:Vigoria        2 0.00126 0.00063   0.0900   0.91518    
Dirad:Vigoria         2 0.00318 0.00159   0.2274   0.80319    
N_Gemme:Defogl:Dirad  1 0.04809 0.04809   6.8732   0.03950 *  
Residuals             6 0.04198 0.00700                       
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.989
IBIMET_3: n.s
```

KB

```
Analysis of Variance Table

Response: Ca_2008M[, 31]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)  
IBIMET_2              1 0.163440 0.163440  7.9208 0.03058 *
IBIMET_3              1 0.003645 0.003645  0.1766 0.68891  
N_Gemme               1 0.008746 0.008746  0.4238 0.53914  
Defogl                1 0.132697 0.132697  6.4310 0.04432 *
Dirad                 1 0.172757 0.172757  8.3724 0.02757 *
Vigoria               2 0.098304 0.049152  2.3821 0.17319  
N_Gemme:Defogl        1 0.002213 0.002213  0.1073 0.75440  
N_Gemme:Dirad         1 0.037867 0.037867  1.8352 0.22430  
Defogl:Dirad          1 0.010852 0.010852  0.5259 0.49562  
N_Gemme:Vigoria       2 0.011508 0.005754  0.2789 0.76594  
Defogl:Vigoria        2 0.147586 0.073793  3.5763 0.09494 .
Dirad:Vigoria         2 0.000297 0.000149  0.0072 0.99283  
N_Gemme:Defogl:Dirad  1 0.043068 0.043068  2.0872 0.19866  
Residuals             6 0.123805 0.020634                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.754
IBIMET_3: n.s
```

ApaB

```
Analysis of Variance Table

Response: Ca_2008M[, 32]
                     Df  Sum Sq Mean Sq F value   Pr(>F)   
IBIMET_2              1 1202.55 1202.55 27.4154 0.001946 **
IBIMET_3              1  775.32  775.32 17.6756 0.005659 **
```

```
N_Gemme              1  127.25  127.25  2.9010 0.139416
Defogl               1  274.18  274.18  6.2508 0.046518 *
Dirad                1  280.38  280.38  6.3921 0.044784 *
Vigoria              2  327.10  163.55  3.7286 0.088632 .
N_Gemme:Defogl       1  164.07  164.07  3.7405 0.101275
N_Gemme:Dirad        1  138.30  138.30  3.1528 0.126138
Defogl:Dirad         1    0.13    0.13  0.0029 0.958548
N_Gemme:Vigoria      2   34.56   17.28  0.3939 0.690647
Defogl:Vigoria       2  116.92   58.46  1.3327 0.331959
Dirad:Vigoria        2   50.88   25.44  0.5799 0.588493
N_Gemme:Defogl:Dirad 1    1.40    1.40  0.0320 0.863998
Residuals            6  263.18   43.86
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: -0.906
IBIMET_3: 0.864

Antoctot1B

Analysis of Variance Table

```
Response: Ca_2008M[, 33]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2              1   8976  8975.9  1.4478 0.27419
IBIMET_3              1   1085  1085.0  0.1750 0.69026
N_Gemme               1    133   132.9  0.0214 0.88840
Defogl                1   1527  1527.3  0.2464 0.63731
Dirad                 1     80    80.3  0.0130 0.91309
Vigoria               2  57471 28735.6  4.6352 0.06066 .
N_Gemme:Defogl        1    425   424.8  0.0685 0.80225
N_Gemme:Dirad         1   2516  2516.3  0.4059 0.54759
Defogl:Dirad          1     37    37.1  0.0060 0.94082
N_Gemme:Vigoria       2   8752  4376.2  0.7059 0.53050
Defogl:Vigoria        2    578   288.8  0.0466 0.95482
Dirad:Vigoria         2   2802  1401.0  0.2260 0.80422
N_Gemme:Defogl:Dirad  1    182   181.7  0.0293 0.86971
Residuals             6  37197  6199.5
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: n.s
IBIMET_3: n.s

Poliftot1B

Analysis of Variance Table

```
Response: Ca_2008M[, 34]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2              1  26217   26217  2.9489 0.13674
IBIMET_3              1   1868    1868  0.2101 0.66279
N_Gemme               1    151     151  0.0170 0.90043
Defogl                1   3474    3474  0.3908 0.55491
Dirad                 1 101840  101840 11.4552 0.01477 *
Vigoria               2 167734   83867  9.4335 0.01405 *
N_Gemme:Defogl        1  28584   28584  3.2152 0.12312
N_Gemme:Dirad         1   2484    2484  0.2794 0.61605
Defogl:Dirad          1   9516    9516  1.0704 0.34074
```

```
N_Gemme:Vigoria       2   3244    1622  0.1825 0.83768
Defogl:Vigoria        2   8983    4492  0.5052 0.62693
Dirad:Vigoria         2  10328    5164  0.5809 0.58803
N_Gemme:Defogl:Dirad  1  22832   22832  2.5682 0.16015
Residuals             6  53342    8890
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: n.s
IBIMET_3: n.s

Antoctot2B

Analysis of Variance Table

```
Response: Ca_2008M[, 35]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2              1   9177    9177  1.9114 0.21607
IBIMET_3              1   3707    3707  0.7721 0.41338
N_Gemme               1    979     979  0.2038 0.66751
Defogl                1  25486   25486  5.3085 0.06077 .
Dirad                 1  17648   17648  3.6759 0.10366
Vigoria               2  90317   45158  9.4061 0.01414 *
N_Gemme:Defogl        1     42      42  0.0087 0.92882
N_Gemme:Dirad         1   2054    2054  0.4279 0.53729
Defogl:Dirad          1    696     696  0.1450 0.71646
N_Gemme:Vigoria       2   9231    4615  0.9614 0.43434
Defogl:Vigoria        2   4410    2205  0.4592 0.65226
Dirad:Vigoria         2   4935    2467  0.5139 0.62228
N_Gemme:Defogl:Dirad  1   1301    1301  0.2710 0.62132
Residuals             6  28806    4801
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: n.s
IBIMET_3: n.s

Poliftot2B

Analysis of Variance Table

```
Response: Ca_2008M[, 36]
                     Df Sum Sq Mean Sq F value Pr(>F)
IBIMET_2              1  15895   15895  0.5241 0.4964
IBIMET_3              1   2725    2725  0.0898 0.7745
N_Gemme               1   1920    1920  0.0633 0.8098
Defogl                1  46019   46019  1.5172 0.2641
Dirad                 1 106483  106483  3.5107 0.1101
Vigoria               2  79268   39634  1.3067 0.3380
N_Gemme:Defogl        1  37315   37315  1.2302 0.3098
N_Gemme:Dirad         1    137     137  0.0045 0.9486
Defogl:Dirad          1  10910   10910  0.3597 0.5706
N_Gemme:Vigoria       2   7055    3527  0.1163 0.8922
Defogl:Vigoria        2  22839   11420  0.3765 0.7014
Dirad:Vigoria         2  25571   12786  0.4215 0.6741
N_Gemme:Defogl:Dirad  1  55419   55419  1.8271 0.2252
Residuals             6 181988   30331
```

IBIMET_2: n.s

IBIMET_3: n.s

CACCIAGRANDE 2008M DIPROVE

PvinacciaA

Analysis of Variance Table

Response: Ca_2008M[, 11]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 563986 | 563986 | 8.7635 | 0.031507 | * |
| DIPROVE_2 | 1 | 764732 | 764732 | 11.8828 | 0.018294 | * |
| DIPROVE_3 | 1 | 97605 | 97605 | 1.5166 | 0.272887 | |
| N_Gemme | 1 | 20188 | 20188 | 0.3137 | 0.599585 | |
| Defogl | 1 | 893413 | 893413 | 13.8824 | 0.013629 | * |
| Dirad | 1 | 1598645 | 1598645 | 24.8407 | 0.004161 | ** |
| Vigoria | 2 | 360613 | 180306 | 2.8017 | 0.152690 | |
| N_Gemme:Defogl | 1 | 42879 | 42879 | 0.6663 | 0.451474 | |
| N_Gemme:Dirad | 1 | 624993 | 624993 | 9.7115 | 0.026361 | * |
| Defogl:Dirad | 1 | 146461 | 146461 | 2.2758 | 0.191780 | |
| N_Gemme:Vigoria | 2 | 361954 | 180977 | 2.8121 | 0.151942 | |
| Defogl:Vigoria | 2 | 36039 | 18020 | 0.2800 | 0.766900 | |
| Dirad:Vigoria | 2 | 30645 | 15322 | 0.2381 | 0.796584 | |
| N_Gemme:Defogl:Dirad | 1 | 142 | 142 | 0.0022 | 0.964353 | |
| Residuals | 5 | 321780 | 64356 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.798
DIPROVE_2: -0.839
DIPROVE_3: n.s

DensMostoA

Analysis of Variance Table

Response: Ca_2008M[, 12]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 3.0097e-05 | 3.0097e-05 | 5.0350 | 0.074849 | . |
| DIPROVE_2 | 1 | 1.1536e-05 | 1.1536e-05 | 1.9299 | 0.223462 | |
| DIPROVE_3 | 1 | 9.0895e-05 | 9.0895e-05 | 15.2060 | 0.011415 | * |
| N_Gemme | 1 | 5.0300e-07 | 5.0300e-07 | 0.0842 | 0.783382 | |
| Defogl | 1 | 1.1773e-04 | 1.1773e-04 | 19.6946 | 0.006778 | ** |
| Dirad | 1 | 4.4118e-05 | 4.4118e-05 | 7.3806 | 0.041938 | * |
| Vigoria | 2 | 2.5550e-05 | 1.2775e-05 | 2.1372 | 0.213410 | |
| N_Gemme:Defogl | 1 | 7.5600e-07 | 7.5600e-07 | 0.1265 | 0.736642 | |
| N_Gemme:Dirad | 1 | 2.4494e-05 | 2.4494e-05 | 4.0977 | 0.098829 | . |
| Defogl:Dirad | 1 | 1.5620e-06 | 1.5620e-06 | 0.2613 | 0.630980 | |
| N_Gemme:Vigoria | 2 | 5.8680e-06 | 2.9340e-06 | 0.4908 | 0.638802 | |
| Defogl:Vigoria | 2 | 7.5820e-06 | 3.7910e-06 | 0.6342 | 0.568220 | |
| Dirad:Vigoria | 2 | 7.4250e-06 | 3.7120e-06 | 0.6210 | 0.574247 | |
| N_Gemme:Defogl:Dirad | 1 | 1.7410e-06 | 1.7410e-06 | 0.2913 | 0.612551 | |
| Residuals | 5 | 2.9888e-05 | 5.9780e-06 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.867

BrixA

```
Analysis of Variance Table

Response: Ca_2008M[, 13]
                    Df Sum Sq Mean Sq F value   Pr(>F)   
DIPROVE_1            1 1.7973  1.7973  6.3504 0.053175 . 
DIPROVE_2            1 0.5195  0.5195  1.8355 0.233473   
DIPROVE_3            1 4.6045  4.6045 16.2696 0.009986 **
N_Gemme              1 0.0304  0.0304  0.1074 0.756367   
Defogl               1 5.3714  5.3714 18.9793 0.007314 **
Dirad                1 2.3915  2.3915  8.4499 0.033521 * 
Vigoria              2 1.0649  0.5325  1.8814 0.245932   
N_Gemme:Defogl       1 0.0348  0.0348  0.1231 0.739958   
N_Gemme:Dirad        1 1.2463  1.2463  4.4038 0.089922 . 
Defogl:Dirad         1 0.0548  0.0548  0.1936 0.678306   
N_Gemme:Vigoria      2 0.2508  0.1254  0.4430 0.665073   
Defogl:Vigoria       2 0.5592  0.2796  0.9880 0.434919   
Dirad:Vigoria        2 0.3415  0.1707  0.6033 0.582497   
N_Gemme:Defogl:Dirad 1 0.0899  0.0899  0.3175 0.597442   
Residuals            5 1.4151  0.2830                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.875

PhA

```
Analysis of Variance Table

Response: Ca_2008M[, 14]
                    Df    Sum Sq   Mean Sq F value  Pr(>F)  
DIPROVE_1            1 0.0118944 0.0118944  6.0313 0.05752 .
DIPROVE_2            1 0.0028306 0.0028306  1.4353 0.28459  
DIPROVE_3            1 0.0004009 0.0004009  0.2033 0.67097  
N_Gemme              1 0.0005003 0.0005003  0.2537 0.63588  
Defogl               1 0.0183588 0.0183588  9.3091 0.02839 *
Dirad                1 0.0105926 0.0105926  5.3712 0.06826 .
Vigoria              2 0.0144041 0.0072021  3.6519 0.10527  
N_Gemme:Defogl       1 0.0000231 0.0000231  0.0117 0.91797  
N_Gemme:Dirad        1 0.0126120 0.0126120  6.3951 0.05260 .
Defogl:Dirad         1 0.0013836 0.0013836  0.7016 0.44045  
N_Gemme:Vigoria      2 0.0015036 0.0007518  0.3812 0.70131  
Defogl:Vigoria       2 0.0117691 0.0058846  2.9839 0.14032  
Dirad:Vigoria        2 0.0000185 0.0000093  0.0047 0.99532  
N_Gemme:Defogl:Dirad 1 0.0047435 0.0047435  2.4052 0.18162  
Residuals            5 0.0098606 0.0019721                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

AcTitolA

```
Analysis of Variance Table

Response: Ca_2008M[, 15]
                    Df  Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1            1 0.12647 0.12647  2.4312 0.17968  
DIPROVE_2            1 0.00097 0.00097  0.0187 0.89659  
DIPROVE_3            1 0.70978 0.70978 13.6441 0.01409 *
N_Gemme              1 0.03468 0.03468  0.6667 0.45134  
Defogl               1 0.14467 0.14467  2.7810 0.15627  
Dirad                1 0.08088 0.08088  1.5548 0.26765  
Vigoria              2 0.52002 0.26001  4.9981 0.06419 .
N_Gemme:Defogl       1 0.00033 0.00033  0.0063 0.93974  
N_Gemme:Dirad        1 0.06316 0.06316  1.2141 0.32071  
Defogl:Dirad         1 0.01730 0.01730  0.3326 0.58911  
N_Gemme:Vigoria      2 0.05857 0.02928  0.5629 0.60187  
Defogl:Vigoria       2 0.09688 0.04844  0.9312 0.45315  
Dirad:Vigoria        2 0.20915 0.10457  2.0102 0.22875  
N_Gemme:Defogl:Dirad  1 0.00191 0.00191  0.0367 0.85552  
Residuals            5 0.26011 0.05202                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.855
```

AcTartA

```
Analysis of Variance Table

Response: Ca_2008M[, 16]
                    Df  Sum Sq Mean Sq F value  Pr(>F)   
DIPROVE_1            1 0.00116 0.00116  0.0295 0.87034   
DIPROVE_2            1 0.21844 0.21844  5.5726 0.06470 . 
DIPROVE_3            1 0.89486 0.89486 22.8286 0.00498 **
N_Gemme              1 0.02918 0.02918  0.7444 0.42768   
Defogl               1 0.23234 0.23234  5.9273 0.05904 . 
Dirad                1 0.00721 0.00721  0.1839 0.68592   
Vigoria              2 0.97823 0.48911 12.4777 0.01138 * 
N_Gemme:Defogl       1 0.08305 0.08305  2.1188 0.20527   
N_Gemme:Dirad        1 0.01060 0.01060  0.2705 0.62522   
Defogl:Dirad         1 0.01435 0.01435  0.3660 0.57160   
N_Gemme:Vigoria      2 0.00468 0.00234  0.0597 0.94274   
Defogl:Vigoria       2 0.00138 0.00069  0.0176 0.98258   
Dirad:Vigoria        2 0.04683 0.02341  0.5973 0.58533   
N_Gemme:Defogl:Dirad  1 0.00116 0.00116  0.0296 0.87011   
Residuals            5 0.19600 0.03920                   
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.906
```

AcMalicoA

```
Analysis of Variance Table

Response: Ca_2008M[, 17]
```

```
                     Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.11518 0.11518  4.8284 0.079357 .
DIPROVE_2             1 0.47897 0.47897 20.0786 0.006513 **
DIPROVE_3             1 0.21144 0.21144  8.8638 0.030899 *
N_Gemme               1 0.01764 0.01764  0.7395 0.429105
Defogl                1 0.00058 0.00058  0.0245 0.881798
Dirad                 1 0.07104 0.07104  2.9780 0.144993
Vigoria               2 0.18571 0.09286  3.8926 0.095645 .
N_Gemme:Defogl        1 0.03313 0.03313  1.3890 0.291600
N_Gemme:Dirad         1 0.14625 0.14625  6.1310 0.056110 .
Defogl:Dirad          1 0.11917 0.11917  4.9955 0.075683 .
N_Gemme:Vigoria       2 0.06139 0.03069  1.2867 0.354151
Defogl:Vigoria        2 0.09053 0.04527  1.8976 0.243676
Dirad:Vigoria         2 0.26742 0.13371  5.6052 0.052838 .
N_Gemme:Defogl:Dirad  1 0.07515 0.07515  3.1502 0.136091
Residuals             5 0.11927 0.02385
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: 0.895
DIPROVE_3: -0.8

KA

Analysis of Variance Table

```
Response: Ca_2008M[, 18]
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.000008 0.000008  0.0029 0.958835
DIPROVE_2             1 0.022870 0.022870  8.0481 0.036378 *
DIPROVE_3             1 0.002099 0.002099  0.7385 0.429406
N_Gemme               1 0.003564 0.003564  1.2542 0.313645
Defogl                1 0.069011 0.069011 24.2849 0.004367 **
Dirad                 1 0.027527 0.027527  9.6868 0.026480 *
Vigoria               2 0.018600 0.009300  3.2726 0.123430
N_Gemme:Defogl        1 0.006768 0.006768  2.3816 0.183423
N_Gemme:Dirad         1 0.000896 0.000896  0.3154 0.598616
Defogl:Dirad          1 0.007886 0.007886  2.7750 0.156626
N_Gemme:Vigoria       2 0.016139 0.008070  2.8397 0.149990
Defogl:Vigoria        2 0.008067 0.004034  1.4195 0.324923
Dirad:Vigoria         2 0.029589 0.014794  5.2061 0.059946 .
N_Gemme:Defogl:Dirad  1 0.017943 0.017943  6.3142 0.053643 .
Residuals             5 0.014209 0.002842
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: 0.785
DIPROVE_3: n.s

ApaA

Analysis of Variance Table

```
Response: Ca_2008M[, 19]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1             1   61.95   61.95  0.2416 0.64390
DIPROVE_2             1  324.47  324.47  1.2651 0.31176
```

```
DIPROVE_3             1 1136.63 1136.63  4.4317 0.08917 .
N_Gemme               1  590.36  590.36  2.3018 0.18967
Defogl                1  366.24  366.24  1.4280 0.28568
Dirad                 1   99.75   99.75  0.3889 0.56021
Vigoria               2 1082.45  541.23  2.1102 0.21654
N_Gemme:Defogl        1  208.37  208.37  0.8124 0.40872
N_Gemme:Dirad         1   11.66   11.66  0.0455 0.83959
Defogl:Dirad          1   79.77   79.77  0.3110 0.60109
N_Gemme:Vigoria       2  164.39   82.20  0.3205 0.73968
Defogl:Vigoria        2   93.00   46.50  0.1813 0.83943
Dirad:Vigoria         2  170.29   85.14  0.3320 0.73220
N_Gemme:Defogl:Dirad  1   46.77   46.77  0.1823 0.68714
Residuals             5 1282.39  256.48
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

Antoctot1A

Analysis of Variance Table

```
Response: Ca_2008M[, 20]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1  10785   10785  2.3772 0.183756
DIPROVE_2             1 151408  151408 33.3728 0.002186 **
DIPROVE_3             1   1124    1124  0.2478 0.639754
N_Gemme               1     51      51  0.0113 0.919471
Defogl                1   1071    1071  0.2360 0.647638
Dirad                 1  22562   22562  4.9730 0.076162 .
Vigoria               2  35758   17879  3.9408 0.093864 .
N_Gemme:Defogl        1   4384    4384  0.9663 0.370740
N_Gemme:Dirad         1     72      72  0.0159 0.904611
Defogl:Dirad          1   6596    6596  1.4540 0.281833
N_Gemme:Vigoria       2  15864    7932  1.7484 0.265640
Defogl:Vigoria        2   4683    2342  0.5161 0.625503
Dirad:Vigoria         2   2909    1455  0.3206 0.739591
N_Gemme:Defogl:Dirad  1   7323    7323  1.6141 0.259824
Residuals             5  22684    4537
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: -0.933
DIPROVE_3: n.s
```

Poliftot1A

Analysis of Variance Table

```
Response: Ca_2008M[, 21]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1  77483   77483  5.4359 0.067086 .
DIPROVE_2             1 445505  445505 31.2545 0.002527 **
DIPROVE_3             1   3015    3015  0.2116 0.664862
N_Gemme               1   3902    3902  0.2737 0.623183
Defogl                1 128710  128710  9.0297 0.029929 *
```

```
Dirad                 1   9680    9680  0.6791 0.447418
Vigoria               2 136386   68193  4.7841 0.069009 .
N_Gemme:Defogl        1     67      67  0.0047 0.948138
N_Gemme:Dirad         1    713     713  0.0500 0.831909
Defogl:Dirad          1  27054   27054  1.8980 0.226772
N_Gemme:Vigoria       2  37664   18832  1.3212 0.346229
Defogl:Vigoria        2  18740    9370  0.6574 0.557875
Dirad:Vigoria         2  55641   27821  1.9518 0.236330
N_Gemme:Defogl:Dirad  1  35695   35695  2.5042 0.174391
Residuals             5  71270   14254
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: -0.928
DIPROVE_3: n.s
```

Antoctot2A

```
Analysis of Variance Table

Response: Ca_2008M[, 22]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1   4855    4855  1.1629 0.330126
DIPROVE_2             1  69925   69925 16.7476 0.009425 **
DIPROVE_3             1   5372    5372  1.2866 0.308104
N_Gemme               1  11021   11021  2.6397 0.165152
Defogl                1  15570   15570  3.7292 0.111330
Dirad                 1  34759   34759  8.3251 0.034374 *
Vigoria               2  15925    7963  1.9071 0.242360
N_Gemme:Defogl        1   4363    4363  1.0450 0.353550
N_Gemme:Dirad         1   2210    2210  0.5293 0.499543
Defogl:Dirad          1  11011   11011  2.6373 0.165311
N_Gemme:Vigoria       2  18062    9031  2.1630 0.210468
Defogl:Vigoria        2   1231     616  0.1474 0.866538
Dirad:Vigoria         2   3329    1665  0.3987 0.690789
N_Gemme:Defogl:Dirad  1     36      36  0.0085 0.929927
Residuals             5  20876    4175
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: -0.878
DIPROVE_3: n.s
```

Poliftot2A

```
Analysis of Variance Table

Response: Ca_2008M[, 23]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1    127     127  0.0277 0.874357
DIPROVE_2             1 141572  141572 30.8737 0.002596 **
DIPROVE_3             1   6785    6785  1.4797 0.278106
N_Gemme               1   3913    3913  0.8533 0.398020
Defogl                1  65559   65559 14.2969 0.012875 *
Dirad                 1   5983    5983  1.3048 0.305063
Vigoria               2  16623    8311  1.8125 0.255870
N_Gemme:Defogl        1   2387    2387  0.5206 0.502898
```

```
N_Gemme:Dirad         1     80      80  0.0174 0.900081  
Defogl:Dirad          1  46419   46419 10.1230 0.024493 *
N_Gemme:Vigoria       2  41195   20597  4.4918 0.076449 .
Defogl:Vigoria        2  13565    6782  1.4791 0.312886  
Dirad:Vigoria         2  91565   45783  9.9841 0.017945 *
N_Gemme:Defogl:Dirad  1   4480    4480  0.9770 0.368330  
Residuals             5  22928    4586                   
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: -0.928
DIPROVE_3: n.s
```

PvinacciaB

```
Analysis of Variance Table

Response: Ca_2008M[, 24]
                     Df  Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1             1  247925  247925  1.3894 0.29154  
DIPROVE_2             1      24      24  0.0001 0.99126  
DIPROVE_3             1  323539  323539  1.8131 0.23595  
N_Gemme               1    6470    6470  0.0363 0.85647  
Defogl                1   90236   90236  0.5057 0.50880  
Dirad                 1 1284112 1284112  7.1963 0.04368 *
Vigoria               2  280349  140174  0.7855 0.50505  
N_Gemme:Defogl        1   56636   56636  0.3174 0.59751  
N_Gemme:Dirad         1  226105  226105  1.2671 0.31142  
Defogl:Dirad          1  124392  124392  0.6971 0.44181  
N_Gemme:Vigoria       2  226063  113031  0.6334 0.56859  
Defogl:Vigoria        2  127867   63933  0.3583 0.71546  
Dirad:Vigoria         2  133571   66785  0.3743 0.70556  
N_Gemme:Defogl:Dirad  1    3217    3217  0.0180 0.89842  
Residuals             5  892206  178441                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

DensMostoB

```
Analysis of Variance Table

Response: Ca_2008M[, 25]
                     Df     Sum Sq    Mean Sq F value  Pr(>F)  
DIPROVE_1             1 3.1520e-06 3.1520e-06  0.1204 0.74272  
DIPROVE_2             1 8.1395e-05 8.1395e-05  3.1091 0.13814  
DIPROVE_3             1 8.2690e-05 8.2690e-05  3.1586 0.13567  
N_Gemme               1 6.7480e-06 6.7480e-06  0.2578 0.63325  
Defogl                1 1.2746e-04 1.2746e-04  4.8686 0.07845 .
Dirad                 1 5.8625e-05 5.8625e-05  2.2394 0.19479  
Vigoria               2 5.6710e-06 2.8350e-06  0.1083 0.89940  
N_Gemme:Defogl        1 3.5000e-06 3.5000e-06  0.1337 0.72958  
N_Gemme:Dirad         1 3.0256e-05 3.0256e-05  1.1557 0.33147  
Defogl:Dirad          1 3.0000e-09 3.0000e-09  0.0001 0.99172  
N_Gemme:Vigoria       2 1.5001e-05 7.5010e-06  0.2865 0.76243  
```

```
Defogl:Vigoria        2 1.3827e-05 6.9130e-06  0.2641 0.77799
Dirad:Vigoria         2 2.3139e-05 1.1570e-05  0.4419 0.66568
N_Gemme:Defogl:Dirad  1 4.9900e-07 4.9900e-07  0.0191 0.89555
Residuals             5 1.3090e-04 2.6179e-05
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


BrixB

Analysis of Variance Table

Response: Ca_2008M[, 26]
                     Df Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.1722  0.1722  0.1324 0.73082
DIPROVE_2             1 4.0614  4.0614  3.1224 0.13747
DIPROVE_3             1 3.9458  3.9458  3.0335 0.14203
N_Gemme               1 0.2666  0.2666  0.2049 0.66973
Defogl                1 6.1836  6.1836  4.7539 0.08108 .
Dirad                 1 2.8812  2.8812  2.2151 0.19684
Vigoria               2 0.2466  0.1233  0.0948 0.91117
N_Gemme:Defogl        1 0.2125  0.2125  0.1634 0.70278
N_Gemme:Dirad         1 1.5270  1.5270  1.1740 0.32804
Defogl:Dirad          1 0.0198  0.0198  0.0152 0.90656
N_Gemme:Vigoria       2 0.7696  0.3848  0.2958 0.75609
Defogl:Vigoria        2 0.7682  0.3841  0.2953 0.75644
Dirad:Vigoria         2 1.1768  0.5884  0.4524 0.65981
N_Gemme:Defogl:Dirad  1 0.0390  0.0390  0.0300 0.86925
Residuals             5 6.5036  1.3007
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


PhB

Analysis of Variance Table

Response: Ca_2008M[, 27]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.005509 0.005509  1.3661 0.29517
DIPROVE_2             1 0.001608 0.001608  0.3987 0.55551
DIPROVE_3             1 0.001390 0.001390  0.3447 0.58263
N_Gemme               1 0.001732 0.001732  0.4295 0.54120
Defogl                1 0.056505 0.056505 14.0125 0.01339 *
Dirad                 1 0.015507 0.015507  3.8455 0.10715
Vigoria               2 0.013319 0.006660  1.6515 0.28141
N_Gemme:Defogl        1 0.000029 0.000029  0.0071 0.93615
N_Gemme:Dirad         1 0.007402 0.007402  1.8357 0.23346
Defogl:Dirad          1 0.000797 0.000797  0.1976 0.67526
N_Gemme:Vigoria       2 0.001744 0.000872  0.2162 0.81271
Defogl:Vigoria        2 0.030981 0.015491  3.8415 0.09758 .
Dirad:Vigoria         2 0.003186 0.001593  0.3950 0.69297
N_Gemme:Defogl:Dirad  1 0.007155 0.007155  1.7743 0.24034
```

```
Residuals             5 0.020162 0.004032
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

AcTitolB

Analysis of Variance Table

```
Response: Ca_2008M[, 28]
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.022065 0.022065  1.6542 0.254727
DIPROVE_2             1 0.129015 0.129015  9.6721 0.026551 *
DIPROVE_3             1 0.306363 0.306363 22.9675 0.004916 **
N_Gemme               1 0.055683 0.055683  4.1745 0.096481 .
Defogl                1 0.032496 0.032496  2.4361 0.179318
Dirad                 1 0.000531 0.000531  0.0398 0.849767
Vigoria               2 0.085947 0.042973  3.2216 0.126197
N_Gemme:Defogl        1 0.081552 0.081552  6.1138 0.056349 .
N_Gemme:Dirad         1 0.025513 0.025513  1.9127 0.225240
Defogl:Dirad          1 0.000013 0.000013  0.0010 0.976483
N_Gemme:Vigoria       2 0.039377 0.019689  1.4760 0.313493
Defogl:Vigoria        2 0.121012 0.060506  4.5361 0.075254 .
Dirad:Vigoria         2 0.100504 0.050252  3.7673 0.100496
N_Gemme:Defogl:Dirad  1 0.007818 0.007818  0.5861 0.478496
Residuals             5 0.066695 0.013339
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: 0.812
DIPROVE_3: -0.906
```

AcTartB

Analysis of Variance Table

```
Response: Ca_2008M[, 29]
                     Df  Sum Sq  Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.00022 0.000217  0.0159 0.904597
DIPROVE_2             1 0.01322 0.013218  0.9691 0.370108
DIPROVE_3             1 0.04446 0.044457  3.2596 0.130839
N_Gemme               1 0.00309 0.003092  0.2267 0.654046
Defogl                1 0.01296 0.012964  0.9505 0.374363
Dirad                 1 0.02273 0.022735  1.6669 0.253140
Vigoria               2 0.42248 0.211240 15.4880 0.007201 **
N_Gemme:Defogl        1 0.22402 0.224016 16.4248 0.009799 **
N_Gemme:Dirad         1 0.02812 0.028117  2.0615 0.210540
Defogl:Dirad          1 0.00455 0.004546  0.3333 0.588749
N_Gemme:Vigoria       2 0.07705 0.038525  2.8246 0.151053
Defogl:Vigoria        2 0.03102 0.015509  1.1371 0.391709
Dirad:Vigoria         2 0.06794 0.033970  2.4907 0.177604
N_Gemme:Defogl:Dirad  1 0.01650 0.016504  1.2101 0.321434
Residuals             5 0.06819 0.013639
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

AcMalicoB

Analysis of Variance Table

Response: Ca_2008M[, 30]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.01754 | 0.01754 | 4.5774 | 0.0853738 | . |
| DIPROVE_2 | 1 | 0.90096 | 0.90096 | 235.1728 | 2.139e-05 | *** |
| DIPROVE_3 | 1 | 0.21508 | 0.21508 | 56.1425 | 0.0006692 | *** |
| N_Gemme | 1 | 0.00983 | 0.00983 | 2.5654 | 0.1701254 | |
| Defogl | 1 | 0.01715 | 0.01715 | 4.4769 | 0.0879643 | . |
| Dirad | 1 | 0.00090 | 0.00090 | 0.2353 | 0.6481445 | |
| Vigoria | 2 | 0.66075 | 0.33037 | 86.2361 | 0.0001332 | *** |
| N_Gemme:Defogl | 1 | 0.05428 | 0.05428 | 14.1683 | 0.0131023 | * |
| N_Gemme:Dirad | 1 | 0.05135 | 0.05135 | 13.4042 | 0.0145769 | * |
| Defogl:Dirad | 1 | 0.04196 | 0.04196 | 10.9528 | 0.0212522 | * |
| N_Gemme:Vigoria | 2 | 0.12163 | 0.06081 | 15.8739 | 0.0068289 | ** |
| Defogl:Vigoria | 2 | 0.01660 | 0.00830 | 2.1664 | 0.2100896 | |
| Dirad:Vigoria | 2 | 0.08133 | 0.04067 | 10.6151 | 0.0158642 | * |
| N_Gemme:Defogl:Dirad | 1 | 0.01020 | 0.01020 | 2.6614 | 0.1637410 | |
| Residuals | 5 | 0.01916 | 0.00383 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: 0.99
DIPROVE_3: -0.958

KB

Analysis of Variance Table

Response: Ca_2008M[, 31]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.01284 | 0.01284 | 0.5305 | 0.49905 | |
| DIPROVE_2 | 1 | 0.08738 | 0.08738 | 3.6108 | 0.11583 | |
| DIPROVE_3 | 1 | 0.00173 | 0.00173 | 0.0717 | 0.79960 | |
| N_Gemme | 1 | 0.00145 | 0.00145 | 0.0599 | 0.81640 | |
| Defogl | 1 | 0.35630 | 0.35630 | 14.7237 | 0.01216 | * |
| Dirad | 1 | 0.07689 | 0.07689 | 3.1774 | 0.13476 | |
| Vigoria | 2 | 0.09650 | 0.04825 | 1.9939 | 0.23083 | |
| N_Gemme:Defogl | 1 | 0.00045 | 0.00045 | 0.0188 | 0.89631 | |
| N_Gemme:Dirad | 1 | 0.02038 | 0.02038 | 0.8423 | 0.40086 | |
| Defogl:Dirad | 1 | 0.01234 | 0.01234 | 0.5099 | 0.50710 | |
| N_Gemme:Vigoria | 2 | 0.01565 | 0.00782 | 0.3233 | 0.73784 | |
| Defogl:Vigoria | 2 | 0.08676 | 0.04338 | 1.7927 | 0.25884 | |
| Dirad:Vigoria | 2 | 0.03483 | 0.01741 | 0.7196 | 0.53132 | |
| N_Gemme:Defogl:Dirad | 1 | 0.03229 | 0.03229 | 1.3344 | 0.30023 | |
| Residuals | 5 | 0.12099 | 0.02420 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s

```
DIPROVE_3: n.s


ApaB

Analysis of Variance Table

Response: Ca_2008M[, 32]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1             1   12.55   12.55  0.1654 0.70109
DIPROVE_2             1  195.67  195.67  2.5790 0.16920
DIPROVE_3             1 1271.64 1271.64 16.7606 0.00941 **
N_Gemme               1    7.51    7.51  0.0990 0.76572
Defogl                1  477.10  477.10  6.2883 0.05398 .
Dirad                 1    7.31    7.31  0.0963 0.76880
Vigoria               2  899.16  449.58  5.9256 0.04796 *
N_Gemme:Defogl        1  227.63  227.63  3.0003 0.14380
N_Gemme:Dirad         1   72.04   72.04  0.9496 0.37459
Defogl:Dirad          1    2.67    2.67  0.0351 0.85867
N_Gemme:Vigoria       2   60.39   30.20  0.3980 0.69120
Defogl:Vigoria        2   46.21   23.10  0.3045 0.75024
Dirad:Vigoria         2   70.09   35.05  0.4619 0.65451
N_Gemme:Defogl:Dirad  1   26.89   26.89  0.3544 0.57756
Residuals             5  379.35   75.87
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.878


Antoctot1B

Analysis of Variance Table

Response: Ca_2008M[, 33]
                     Df Sum Sq Mean Sq F value Pr(>F)
DIPROVE_1             1   5886  5885.8  0.9399 0.3768
DIPROVE_2             1   1939  1938.6  0.3096 0.6019
DIPROVE_3             1   2515  2515.1  0.4016 0.5541
N_Gemme               1    477   477.0  0.0762 0.7936
Defogl                1   3192  3191.8  0.5097 0.5072
Dirad                 1   2263  2263.0  0.3614 0.5739
Vigoria               2  38015 19007.6  3.0354 0.1371
N_Gemme:Defogl        1    102   102.1  0.0163 0.9034
N_Gemme:Dirad         1   1553  1553.3  0.2481 0.6396
Defogl:Dirad          1  12289 12289.0  1.9625 0.2202
N_Gemme:Vigoria       2  11093  5546.4  0.8857 0.4685
Defogl:Vigoria        2    974   487.2  0.0778 0.9262
Dirad:Vigoria         2   9309  4654.6  0.7433 0.5216
N_Gemme:Defogl:Dirad  1    845   844.6  0.1349 0.7285
Residuals             5  31310  6261.9

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


Poliftot1B
```

Analysis of Variance Table

Response: Ca_2008M[, 34]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 8305 | 8305 | 0.7779 | 0.41816 | |
| DIPROVE_2 | 1 | 42749 | 42749 | 4.0044 | 0.10180 | |
| DIPROVE_3 | 1 | 161 | 161 | 0.0151 | 0.90710 | |
| N_Gemme | 1 | 153 | 153 | 0.0144 | 0.90925 | |
| Defogl | 1 | 4362 | 4362 | 0.4086 | 0.55079 | |
| Dirad | 1 | 85396 | 85396 | 7.9992 | 0.03675 | * |
| Vigoria | 2 | 142390 | 71195 | 6.6690 | 0.03882 | * |
| N_Gemme:Defogl | 1 | 10675 | 10675 | 1.0000 | 0.36322 | |
| N_Gemme:Dirad | 1 | 5904 | 5904 | 0.5531 | 0.49051 | |
| Defogl:Dirad | 1 | 3643 | 3643 | 0.3412 | 0.58449 | |
| N_Gemme:Vigoria | 2 | 6368 | 3184 | 0.2983 | 0.75445 | |
| Defogl:Vigoria | 2 | 2807 | 1403 | 0.1315 | 0.87975 | |
| Dirad:Vigoria | 2 | 44006 | 22003 | 2.0611 | 0.22242 | |
| N_Gemme:Defogl:Dirad | 1 | 30303 | 30303 | 2.8385 | 0.15285 | |
| Residuals | 5 | 53378 | 10676 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

Antoctot2B

Analysis of Variance Table

Response: Ca_2008M[, 35]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 37348 | 37348 | 3.5284 | 0.1191 |
| DIPROVE_2 | 1 | 10091 | 10091 | 0.9534 | 0.3737 |
| DIPROVE_3 | 1 | 2598 | 2598 | 0.2454 | 0.6413 |
| N_Gemme | 1 | 235 | 235 | 0.0222 | 0.8874 |
| Defogl | 1 | 312 | 312 | 0.0295 | 0.8703 |
| Dirad | 1 | 22815 | 22815 | 2.1555 | 0.2020 |
| Vigoria | 2 | 20276 | 10138 | 0.9578 | 0.4445 |
| N_Gemme:Defogl | 1 | 23 | 23 | 0.0022 | 0.9645 |
| N_Gemme:Dirad | 1 | 1018 | 1018 | 0.0962 | 0.7689 |
| Defogl:Dirad | 1 | 15101 | 15101 | 1.4267 | 0.2859 |
| N_Gemme:Vigoria | 2 | 17230 | 8615 | 0.8139 | 0.4943 |
| Defogl:Vigoria | 2 | 6744 | 3372 | 0.3186 | 0.7409 |
| Dirad:Vigoria | 2 | 11918 | 5959 | 0.5630 | 0.6018 |
| N_Gemme:Defogl:Dirad | 1 | 153 | 153 | 0.0145 | 0.9089 |
| Residuals | 5 | 52924 | 10585 | | |

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

Poliftot2B

Analysis of Variance Table

Response: Ca_2008M[, 36]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 43292 | 43292 | 2.0018 | 0.21626 |

```
DIPROVE_2             1   6993    6993  0.3234 0.59418
DIPROVE_3             1    818     818  0.0378 0.85349
N_Gemme               1     24      24  0.0011 0.97449
Defogl                1   5255    5255  0.2430 0.64295
Dirad                 1 118302  118302  5.4702 0.06647 .
Vigoria               2  53488   26744  1.2366 0.36614
N_Gemme:Defogl        1  30423   30423  1.4068 0.28888
N_Gemme:Dirad         1  24679   24679  1.1412 0.33425
Defogl:Dirad          1   2529    2529  0.1170 0.74626
N_Gemme:Vigoria       2  30290   15145  0.7003 0.53935
Defogl:Vigoria        2   4269    2134  0.0987 0.90775
Dirad:Vigoria         2  84037   42019  1.9429 0.23751
N_Gemme:Defogl:Dirad  1  81011   81011  3.7459 0.11072
Residuals             5 108133   21627
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

CACCIAGRANDE 2008M IASMA

PvinacciaA

Analysis of Variance Table

```
Response: Ca_2008M[, 11]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IASMA_1               1  252544  252544  5.0340 0.074870 .
IASMA_2               1  711882  711882 14.1901 0.013064 *
IASMA_3               1  291059  291059  5.8017 0.060964 .
N_Gemme               1    1074    1074  0.0214 0.889393
Defogl                1 1063690 1063690 21.2027 0.005816 **
Dirad                 1 2043732 2043732 40.7380 0.001398 **
Vigoria               2  479719  239859  4.7812 0.069080 .
N_Gemme:Defogl        1    1268    1268  0.0253 0.879896
N_Gemme:Dirad         1  337341  337341  6.7243 0.048653 *
Defogl:Dirad          1  136481  136481  2.7205 0.159981
N_Gemme:Vigoria       2  181450   90725  1.8084 0.256479
Defogl:Vigoria        2   15789    7894  0.1574 0.858467
Dirad:Vigoria         2   78991   39496  0.7873 0.504384
N_Gemme:Defogl:Dirad  1   18215   18215  0.3631 0.573080
Residuals             5  250838   50168
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: -0.86
IASMA_3: n.s
```

DensMostoA

Analysis of Variance Table

```
Response: Ca_2008M[, 12]
                     Df     Sum Sq    Mean Sq F value  Pr(>F)
IASMA_1               1 2.5057e-05 2.5057e-05  4.2310 0.09480 .
IASMA_2               1 7.0180e-06 7.0180e-06  1.1850 0.32601
```

```
IASMA_3               1 6.5753e-05 6.5753e-05 11.1025 0.02073 *
N_Gemme               1 1.0710e-06 1.0710e-06  0.1809 0.68830
Defogl                1 8.9005e-05 8.9005e-05 15.0286 0.01168 *
Dirad                 1 6.5594e-05 6.5594e-05 11.0756 0.02082 *
Vigoria               2 8.2267e-05 4.1134e-05  6.9455 0.03604 *
N_Gemme:Defogl        1 2.0700e-07 2.0700e-07  0.0350 0.85901
N_Gemme:Dirad         1 1.2254e-05 1.2254e-05  2.0691 0.20983
Defogl:Dirad          1 6.4400e-07 6.4400e-07  0.1088 0.75493
N_Gemme:Vigoria       2 8.0200e-06 4.0100e-06  0.6771 0.54925
Defogl:Vigoria        2 8.1910e-06 4.0960e-06  0.6916 0.54305
Dirad:Vigoria         2 4.6410e-06 2.3200e-06  0.3918 0.69491
N_Gemme:Defogl:Dirad  1 4.0400e-07 4.0400e-07  0.0682 0.80434
Residuals             5 2.9612e-05 5.9220e-06
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: 0.83


BrixA

Analysis of Variance Table

Response: Ca_2008M[, 13]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1 1.3799  1.3799  4.2409 0.09451 .
IASMA_2               1 0.4412  0.4412  1.3561 0.29675
IASMA_3               1 3.2130  3.2130  9.8749 0.02560 *
N_Gemme               1 0.0792  0.0792  0.2435 0.64259
Defogl                1 4.5393  4.5393 13.9511 0.01350 *
Dirad                 1 3.3158  3.3158 10.1906 0.02420 *
Vigoria               2 3.5640  1.7820  5.4767 0.05499 .
N_Gemme:Defogl        1 0.0192  0.0192  0.0590 0.81769
N_Gemme:Dirad         1 0.5014  0.5014  1.5410 0.26952
Defogl:Dirad          1 0.0215  0.0215  0.0660 0.80748
N_Gemme:Vigoria       2 0.3226  0.1613  0.4958 0.63616
Defogl:Vigoria        2 0.4536  0.2268  0.6971 0.54071
Dirad:Vigoria         2 0.2728  0.1364  0.4192 0.67872
N_Gemme:Defogl:Dirad  1 0.0214  0.0214  0.0656 0.80802
Residuals             5 1.6269  0.3254
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: 0.815


PhA

Analysis of Variance Table

Response: Ca_2008M[, 14]
                     Df    Sum Sq   Mean Sq F value  Pr(>F)
IASMA_1               1 0.0005410 0.0005410  0.3100 0.60169
IASMA_2               1 0.0011989 0.0011989  0.6870 0.44495
IASMA_3               1 0.0040202 0.0040202  2.3035 0.18954
N_Gemme               1 0.0018221 0.0018221  1.0440 0.35376
Defogl                1 0.0193934 0.0193934 11.1119 0.02070 *
```

```
Dirad                 1 0.0140573 0.0140573  8.0545 0.03633 *
Vigoria               2 0.0261578 0.0130789  7.4939 0.03130 *
N_Gemme:Defogl        1 0.0044368 0.0044368  2.5421 0.17173
N_Gemme:Dirad         1 0.0058394 0.0058394  3.3458 0.12690
Defogl:Dirad          1 0.0000452 0.0000452  0.0259 0.87851
N_Gemme:Vigoria       2 0.0048833 0.0024417  1.3990 0.32921
Defogl:Vigoria        2 0.0037548 0.0018774  1.0757 0.40874
Dirad:Vigoria         2 0.0009237 0.0004618  0.2646 0.77761
N_Gemme:Defogl:Dirad  1 0.0050956 0.0050956  2.9196 0.14821
Residuals             5 0.0087264 0.0017453
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

AcTitolA

Analysis of Variance Table

```
Response: Ca_2008M[, 15]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1 0.30658 0.30658  3.6456 0.11448
IASMA_2               1 0.00118 0.00118  0.0141 0.91021
IASMA_3               1 0.23295 0.23295  2.7701 0.15692
N_Gemme               1 0.00066 0.00066  0.0078 0.93309
Defogl                1 0.18915 0.18915  2.2492 0.19397
Dirad                 1 0.09835 0.09835  1.1695 0.32889
Vigoria               2 0.86837 0.43418  5.1630 0.06079 .
N_Gemme:Defogl        1 0.01281 0.01281  0.1523 0.71241
N_Gemme:Dirad         1 0.00926 0.00926  0.1102 0.75343
Defogl:Dirad          1 0.00761 0.00761  0.0905 0.77562
N_Gemme:Vigoria       2 0.05344 0.02672  0.3177 0.74150
Defogl:Vigoria        2 0.06199 0.03100  0.3686 0.70905
Dirad:Vigoria         2 0.04661 0.02331  0.2771 0.76888
N_Gemme:Defogl:Dirad  1 0.01545 0.01545  0.1837 0.68604
Residuals             5 0.42048 0.08410
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

AcTartA

Analysis of Variance Table

```
Response: Ca_2008M[, 16]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1               1 0.21477 0.21477  9.7111 0.0263634 *
IASMA_2               1 0.26942 0.26942 12.1823 0.0174646 *
IASMA_3               1 0.01324 0.01324  0.5986 0.4740755
N_Gemme               1 0.00415 0.00415  0.1874 0.6831095
Defogl                1 0.05358 0.05358  2.4227 0.1803171
Dirad                 1 0.07589 0.07589  3.4315 0.1231650
Vigoria               2 1.83653 0.91826 41.5202 0.0007686 ***
N_Gemme:Defogl        1 0.08249 0.08249  3.7298 0.1113092
```

```
N_Gemme:Dirad         1 0.00917 0.00917  0.4146 0.5480067
Defogl:Dirad          1 0.01600 0.01600  0.7233 0.4338919
N_Gemme:Vigoria       2 0.02567 0.01284  0.5804 0.5933903
Defogl:Vigoria        2 0.00278 0.00139  0.0628 0.9398801
Dirad:Vigoria         2 0.00279 0.00139  0.0630 0.9396869
N_Gemme:Defogl:Dirad  1 0.00242 0.00242  0.1095 0.7541625
Residuals             5 0.11058 0.02212
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: -0.812
IASMA_2: 0.842
IASMA_3: n.s

AcMalicoA

Analysis of Variance Table

```
Response: Ca_2008M[, 17]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1 0.12298 0.12298  2.7018 0.16116
IASMA_2               1 0.45371 0.45371  9.9673 0.02518 *
IASMA_3               1 0.34889 0.34889  7.6646 0.03944 *
N_Gemme               1 0.00928 0.00928  0.2038 0.67057
Defogl                1 0.05129 0.05129  1.1267 0.33704
Dirad                 1 0.01922 0.01922  0.4222 0.54451
Vigoria               2 0.42537 0.21269  4.6724 0.07173 .
N_Gemme:Defogl        1 0.01866 0.01866  0.4100 0.55017
N_Gemme:Dirad         1 0.00457 0.00457  0.1005 0.76404
Defogl:Dirad          1 0.04226 0.04226  0.9285 0.37951
N_Gemme:Vigoria       2 0.04568 0.02284  0.5018 0.63299
Defogl:Vigoria        2 0.07951 0.03975  0.8733 0.47283
Dirad:Vigoria         2 0.14352 0.07176  1.5764 0.29454
N_Gemme:Defogl:Dirad  1 0.00037 0.00037  0.0081 0.93170
Residuals             5 0.22760 0.04552
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: n.s
IASMA_2: 0.816
IASMA_3: -0.778

KA

Analysis of Variance Table

```
Response: Ca_2008M[, 18]
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
IASMA_1               1 0.000311 0.000311  0.1392 0.724382
IASMA_2               1 0.017546 0.017546  7.8545 0.037877 *
IASMA_3               1 0.000919 0.000919  0.4116 0.549417
N_Gemme               1 0.003215 0.003215  1.4391 0.284026
Defogl                1 0.017616 0.017616  7.8857 0.037630 *
Dirad                 1 0.070513 0.070513 31.5648 0.002472 **
Vigoria               2 0.026547 0.013274  5.9419 0.047725 *
N_Gemme:Defogl        1 0.017910 0.017910  8.0171 0.036612 *
N_Gemme:Dirad         1 0.005037 0.005037  2.2546 0.193522
Defogl:Dirad          1 0.000016 0.000016  0.0073 0.935281
N_Gemme:Vigoria       2 0.032171 0.016085  7.2005 0.033718 *
```

```
Defogl:Vigoria        2 0.017813 0.008907  3.9870 0.092203 .
Dirad:Vigoria         2 0.017163 0.008582  3.8415 0.097582 .
N_Gemme:Defogl:Dirad  1 0.007229 0.007229  3.2358 0.131954
Residuals             5 0.011170 0.002234
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: 0.782
IASMA_3: n.s


ApaA

Analysis of Variance Table

Response: Ca_2008M[, 19]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1  905.64  905.64  4.2383 0.09459 .
IASMA_2               1   10.23   10.23  0.0479 0.83542
IASMA_3               1    4.77    4.77  0.0223 0.88705
N_Gemme               1  251.33  251.33  1.1762 0.32764
Defogl                1  387.65  387.65  1.8142 0.23584
Dirad                 1    0.41    0.41  0.0019 0.96683
Vigoria               2 2096.91 1048.45  4.9066 0.06619 .
N_Gemme:Defogl        1  226.52  226.52  1.0601 0.35041
N_Gemme:Dirad         1   21.52   21.52  0.1007 0.76379
Defogl:Dirad          1   38.34   38.34  0.1794 0.68946
N_Gemme:Vigoria       2  134.84   67.42  0.3155 0.74294
Defogl:Vigoria        2  122.73   61.36  0.2872 0.76197
Dirad:Vigoria         2  235.32  117.66  0.5506 0.60796
N_Gemme:Defogl:Dirad  1  213.85  213.85  1.0008 0.36304
Residuals             5 1068.41  213.68
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


Antoctot1A

Analysis of Variance Table

Response: Ca_2008M[, 20]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1  28410   28410  6.7586 0.04827 *
IASMA_2               1  47056   47056 11.1943 0.02042 *
IASMA_3               1   2515    2515  0.5983 0.47418
N_Gemme               1   3405    3405  0.8099 0.40939
Defogl                1   3679    3679  0.8751 0.39249
Dirad                 1   8304    8304  1.9756 0.21885
Vigoria               2  94698   47349 11.2640 0.01406 *
N_Gemme:Defogl        1   2983    2983  0.7097 0.43798
N_Gemme:Dirad         1   6953    6953  1.6540 0.25474
Defogl:Dirad          1  19756   19756  4.7000 0.08236 .
N_Gemme:Vigoria       2  15426    7713  1.8349 0.25258
Defogl:Vigoria        2  14224    7112  1.6920 0.27467
Dirad:Vigoria         2  18525    9263  2.2035 0.20597
N_Gemme:Defogl:Dirad  1    323     323  0.0769 0.79266
```

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| Residuals | 5 | 21018 | 4204 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.758
IASMA_2: 0.831
IASMA_3: n.s

Poliftot1A

Analysis of Variance Table

Response: Ca_2008M[, 21]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 198808 | 198808 | 7.5275 | 0.04062 | * |
| IASMA_2 | 1 | 212515 | 212515 | 8.0465 | 0.03639 | * |
| IASMA_3 | 1 | 4078 | 4078 | 0.1544 | 0.71054 | |
| N_Gemme | 1 | 3093 | 3093 | 0.1171 | 0.74612 | |
| Defogl | 1 | 123303 | 123303 | 4.6686 | 0.08311 | . |
| Dirad | 1 | 14475 | 14475 | 0.5480 | 0.49239 | |
| Vigoria | 2 | 177989 | 88995 | 3.3696 | 0.11839 | |
| N_Gemme:Defogl | 1 | 603 | 603 | 0.0228 | 0.88585 | |
| N_Gemme:Dirad | 1 | 483 | 483 | 0.0183 | 0.89769 | |
| Defogl:Dirad | 1 | 81934 | 81934 | 3.1023 | 0.13849 | |
| N_Gemme:Vigoria | 2 | 51789 | 25895 | 0.9804 | 0.43728 | |
| Defogl:Vigoria | 2 | 36953 | 18476 | 0.6996 | 0.53966 | |
| Dirad:Vigoria | 2 | 13093 | 6547 | 0.2479 | 0.78951 | |
| N_Gemme:Defogl:Dirad | 1 | 354 | 354 | 0.0134 | 0.91238 | |
| Residuals | 5 | 132055 | 26411 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.775
IASMA_2: -0.785
IASMA_3: n.s

Antoctot2A

Analysis of Variance Table

Response: Ca_2008M[, 22]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 2164 | 2164 | 1.4952 | 0.275903 | |
| IASMA_2 | 1 | 33424 | 33424 | 23.0906 | 0.004861 | ** |
| IASMA_3 | 1 | 1125 | 1125 | 0.7770 | 0.418399 | |
| N_Gemme | 1 | 7109 | 7109 | 4.9110 | 0.077511 | . |
| Defogl | 1 | 21562 | 21562 | 14.8958 | 0.011886 | * |
| Dirad | 1 | 40994 | 40994 | 28.3202 | 0.003136 | ** |
| Vigoria | 2 | 49965 | 24983 | 17.2587 | 0.005694 | ** |
| N_Gemme:Defogl | 1 | 1124 | 1124 | 0.7763 | 0.418617 | |
| N_Gemme:Dirad | 1 | 5100 | 5100 | 3.5230 | 0.119340 | |
| Defogl:Dirad | 1 | 13439 | 13439 | 9.2841 | 0.028522 | * |
| N_Gemme:Vigoria | 2 | 14949 | 7474 | 5.1635 | 0.060784 | . |
| Defogl:Vigoria | 2 | 3336 | 1668 | 1.1523 | 0.387645 | |
| Dirad:Vigoria | 2 | 14673 | 7337 | 5.0684 | 0.062710 | . |
| N_Gemme:Defogl:Dirad | 1 | 2345 | 2345 | 1.6202 | 0.259035 | |
| Residuals | 5 | 7238 | 1448 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```
IASMA_1: n.s
IASMA_2: 0.907
IASMA_3: n.s


Poliftot2A

Analysis of Variance Table

Response: Ca_2008M[, 23]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1  35458   35458  2.2979 0.18999
IASMA_2               1 158497  158497 10.2715 0.02386 *
IASMA_3               1    819     819  0.0531 0.82692
N_Gemme               1   2092    2092  0.1356 0.72779
Defogl                1   7523    7523  0.4876 0.51615
Dirad                 1   7376    7376  0.4780 0.52011
Vigoria               2  15597    7799  0.5054 0.63110
N_Gemme:Defogl        1   6437    6437  0.4172 0.54683
N_Gemme:Dirad         1  10709   10709  0.6940 0.44277
Defogl:Dirad          1  73362   73362  4.7543 0.08107 .
N_Gemme:Vigoria       2  40125   20062  1.3002 0.35103
Defogl:Vigoria        2   6641    3320  0.2152 0.81349
Dirad:Vigoria         2  17200    8600  0.5573 0.60463
N_Gemme:Defogl:Dirad  1   4190    4190  0.2715 0.62456
Residuals             5  77154   15431
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: -0.82
IASMA_3: n.s


PvinacciaB

Analysis of Variance Table

Response: Ca_2008M[, 24]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1   88144   88144  0.3790 0.56506
IASMA_2               1   14980   14980  0.0644 0.80975
IASMA_3               1  279505  279505  1.2019 0.32291
N_Gemme               1   10276   10276  0.0442 0.84180
Defogl                1  261053  261053  1.1226 0.33784
Dirad                 1 1063131 1063131  4.5716 0.08552 .
Vigoria               2  150310   75155  0.3232 0.73791
N_Gemme:Defogl        1    8070    8070  0.0347 0.85954
N_Gemme:Dirad         1    7746    7746  0.0333 0.86236
Defogl:Dirad          1   11237   11237  0.0483 0.83471
N_Gemme:Vigoria       2  513901  256950  1.1049 0.40051
Defogl:Vigoria        2  176732   88366  0.3800 0.70206
Dirad:Vigoria         2  194845   97422  0.4189 0.67888
N_Gemme:Defogl:Dirad  1   80023   80023  0.3441 0.58295
Residuals             5 1162757  232551
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
```

```
IASMA_3: n.s


DensMostoB

Analysis of Variance Table

Response: Ca_2008M[, 25]
                     Df     Sum Sq    Mean Sq F value  Pr(>F)  
IASMA_1               1 7.4310e-06 7.4310e-06  0.5482 0.49232  
IASMA_2               1 7.6567e-05 7.6567e-05  5.6488 0.06342 .
IASMA_3               1 5.7484e-05 5.7484e-05  4.2410 0.09451 .
N_Gemme               1 1.7069e-05 1.7069e-05  1.2593 0.31277  
Defogl                1 5.0562e-05 5.0562e-05  3.7303 0.11129  
Dirad                 1 5.7062e-05 5.7062e-05  4.2098 0.09543 .
Vigoria               2 1.5798e-04 7.8992e-05  5.8277 0.04938 *
N_Gemme:Defogl        1 7.1900e-07 7.1900e-07  0.0530 0.82703  
N_Gemme:Dirad         1 2.6138e-05 2.6138e-05  1.9284 0.22362  
Defogl:Dirad          1 4.2200e-07 4.2200e-07  0.0312 0.86680  
N_Gemme:Vigoria       2 2.9336e-05 1.4668e-05  1.0821 0.40691  
Defogl:Vigoria        2 1.3165e-05 6.5830e-06  0.4856 0.64159  
Dirad:Vigoria         2 8.2700e-06 4.1350e-06  0.3051 0.74987  
N_Gemme:Defogl:Dirad  1 1.2879e-05 1.2879e-05  0.9502 0.37445  
Residuals             5 6.7772e-05 1.3554e-05                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


BrixB

Analysis of Variance Table

Response: Ca_2008M[, 26]
                     Df Sum Sq Mean Sq F value  Pr(>F)  
IASMA_1               1 0.4021  0.4021  0.5802 0.48061  
IASMA_2               1 3.9029  3.9029  5.6321 0.06370 .
IASMA_3               1 2.6032  2.6032  3.7565 0.11033  
N_Gemme               1 0.7862  0.7862  1.1346 0.33551  
Defogl                1 2.5840  2.5840  3.7288 0.11135  
Dirad                 1 2.7489  2.7489  3.9667 0.10303  
Vigoria               2 7.6522  3.8261  5.5212 0.05423 .
N_Gemme:Defogl        1 0.0210  0.0210  0.0303 0.86870  
N_Gemme:Dirad         1 1.3977  1.3977  2.0169 0.21479  
Defogl:Dirad          1 0.0008  0.0008  0.0012 0.97352  
N_Gemme:Vigoria       2 1.4165  0.7082  1.0220 0.42449  
Defogl:Vigoria        2 0.6930  0.3465  0.5000 0.63392  
Dirad:Vigoria         2 0.3893  0.1946  0.2809 0.76630  
N_Gemme:Defogl:Dirad  1 0.7114  0.7114  1.0266 0.35746  
Residuals             5 3.4649  0.6930                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

PhB

Analysis of Variance Table

Response: Ca_2008M[, 27]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.0000900 | 0.0000900 | 0.0572 | 0.820470 | |
| IASMA_2 | 1 | 0.0020778 | 0.0020778 | 1.3207 | 0.302458 | |
| IASMA_3 | 1 | 0.0041532 | 0.0041532 | 2.6399 | 0.165141 | |
| N_Gemme | 1 | 0.0051821 | 0.0051821 | 3.2938 | 0.129256 | |
| Defogl | 1 | 0.0273458 | 0.0273458 | 17.3816 | 0.008746 | ** |
| Dirad | 1 | 0.0295552 | 0.0295552 | 18.7859 | 0.007469 | ** |
| Vigoria | 2 | 0.0300488 | 0.0150244 | 9.5498 | 0.019606 | * |
| N_Gemme:Defogl | 1 | 0.0058820 | 0.0058820 | 3.7387 | 0.110981 | |
| N_Gemme:Dirad | 1 | 0.0023919 | 0.0023919 | 1.5204 | 0.272371 | |
| Defogl:Dirad | 1 | 0.0009944 | 0.0009944 | 0.6320 | 0.462657 | |
| N_Gemme:Vigoria | 2 | 0.0065564 | 0.0032782 | 2.0837 | 0.219692 | |
| Defogl:Vigoria | 2 | 0.0284721 | 0.0142361 | 9.0487 | 0.021803 | * |
| Dirad:Vigoria | 2 | 0.0118076 | 0.0059038 | 3.7526 | 0.101089 | |
| N_Gemme:Defogl:Dirad | 1 | 0.0046005 | 0.0046005 | 2.9242 | 0.147954 | |
| Residuals | 5 | 0.0078663 | 0.0015733 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

AcTitolB

Analysis of Variance Table

Response: Ca_2008M[, 28]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.04782 | 0.047825 | 3.1557 | 0.13582 | |
| IASMA_2 | 1 | 0.05358 | 0.053582 | 3.5356 | 0.11883 | |
| IASMA_3 | 1 | 0.12208 | 0.122077 | 8.0553 | 0.03632 | * |
| N_Gemme | 1 | 0.09080 | 0.090799 | 5.9913 | 0.05810 | . |
| Defogl | 1 | 0.01567 | 0.015666 | 1.0337 | 0.35594 | |
| Dirad | 1 | 0.00007 | 0.000073 | 0.0048 | 0.94721 | |
| Vigoria | 2 | 0.37629 | 0.188145 | 12.4147 | 0.01150 | * |
| N_Gemme:Defogl | 1 | 0.13618 | 0.136184 | 8.9861 | 0.03018 | * |
| N_Gemme:Dirad | 1 | 0.00044 | 0.000443 | 0.0292 | 0.87096 | |
| Defogl:Dirad | 1 | 0.00004 | 0.000042 | 0.0027 | 0.96027 | |
| N_Gemme:Vigoria | 2 | 0.07270 | 0.036350 | 2.3985 | 0.18607 | |
| Defogl:Vigoria | 2 | 0.00535 | 0.002677 | 0.1766 | 0.84309 | |
| Dirad:Vigoria | 2 | 0.07044 | 0.035221 | 2.3241 | 0.19334 | |
| N_Gemme:Defogl:Dirad | 1 | 0.00733 | 0.007331 | 0.4837 | 0.51774 | |
| Residuals | 5 | 0.07577 | 0.015155 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: -0.786

AcTartB

Analysis of Variance Table

```
Response: Ca_2008M[, 29]
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
IASMA_1               1 0.008343 0.008343  0.7515 0.425641
IASMA_2               1 0.155954 0.155954 14.0469 0.013322 *
IASMA_3               1 0.043779 0.043779  3.9432 0.103811
N_Gemme               1 0.000235 0.000235  0.0211 0.890114
Defogl                1 0.000354 0.000354  0.0318 0.865375
Dirad                 1 0.069054 0.069054  6.2197 0.054896 .
Vigoria               2 0.181915 0.090958  8.1926 0.026433 *
N_Gemme:Defogl        1 0.203955 0.203955 18.3704 0.007818 **
N_Gemme:Dirad         1 0.006816 0.006816  0.6139 0.468789
Defogl:Dirad          1 0.018264 0.018264  1.6450 0.255874
N_Gemme:Vigoria       2 0.030753 0.015376  1.3850 0.332188
Defogl:Vigoria        2 0.115948 0.057974  5.2218 0.059643 .
Dirad:Vigoria         2 0.072243 0.036122  3.2535 0.124458
N_Gemme:Defogl:Dirad  1 0.073422 0.073422  6.6132 0.049938 *
Residuals             5 0.055512 0.011102
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: -0.859
IASMA_3: n.s


AcMalicoB

Analysis of Variance Table

Response: Ca_2008M[, 30]
                     Df  Sum Sq Mean Sq  F value    Pr(>F)
IASMA_1               1 0.11818 0.11818  48.0064  0.000961 ***
IASMA_2               1 0.68304 0.68304 277.4613 1.425e-05 ***
IASMA_3               1 0.00901 0.00901   3.6602  0.113922
N_Gemme               1 0.04273 0.04273  17.3561  0.008772 **
Defogl                1 0.00172 0.00172   0.6980  0.441533
Dirad                 1 0.00071 0.00071   0.2871  0.615031
Vigoria               2 1.01855 0.50927 206.8745 1.558e-05 ***
N_Gemme:Defogl        1 0.02271 0.02271   9.2234  0.028849 *
N_Gemme:Dirad         1 0.00595 0.00595   2.4164  0.180786
Defogl:Dirad          1 0.02467 0.02467  10.0197  0.024943 *
N_Gemme:Vigoria       2 0.12939 0.06470  26.2802  0.002224 **
Defogl:Vigoria        2 0.09399 0.04700  19.0904  0.004562 **
Dirad:Vigoria         2 0.02930 0.01465   5.9515  0.047590 *
N_Gemme:Defogl:Dirad  1 0.02647 0.02647  10.7513  0.021981 *
Residuals             5 0.01231 0.00246
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.952
IASMA_2: 0.991
IASMA_3: n.s


KB

Analysis of Variance Table

Response: Ca_2008M[, 31]
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
```

```
IASMA_1              1 0.003877 0.003877  0.6841 0.445837
IASMA_2              1 0.004844 0.004844  0.8548 0.397621
IASMA_3              1 0.000127 0.000127  0.0223 0.887017
N_Gemme              1 0.011845 0.011845  2.0902 0.207879
Defogl               1 0.156221 0.156221 27.5679 0.003325 **
Dirad                1 0.173751 0.173751 30.6613 0.002636 **
Vigoria              2 0.245982 0.122991 21.7039 0.003429 **
N_Gemme:Defogl       1 0.013266 0.013266  2.3410 0.186559
N_Gemme:Dirad        1 0.023493 0.023493  4.1457 0.097353 .
Defogl:Dirad         1 0.001149 0.001149  0.2027 0.671388
N_Gemme:Vigoria      2 0.043328 0.021664  3.8230 0.098297 .
Defogl:Vigoria       2 0.151812 0.075906 13.3949 0.009811 **
Dirad:Vigoria        2 0.038429 0.019214  3.3907 0.117337
N_Gemme:Defogl:Dirad  1 0.060328 0.060328 10.6459 0.022376 *
Residuals            5 0.028334 0.005667
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

ApaB

Analysis of Variance Table

```
Response: Ca_2008M[, 32]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1               1  477.93  477.93 31.2503 0.0025276 **
IASMA_2               1   39.06   39.06  2.5542 0.1708922
IASMA_3               1   88.35   88.35  5.7772 0.0613493 .
N_Gemme               1   84.89   84.89  5.5510 0.0650695 .
Defogl                1  126.18  126.18  8.2504 0.0348988 *
Dirad                 1  151.15  151.15  9.8831 0.0255585 *
Vigoria               2 1875.57  937.78 61.3191 0.0003037 ***
N_Gemme:Defogl        1  161.24  161.24 10.5428 0.0227723 *
N_Gemme:Dirad         1  189.53  189.53 12.3928 0.0169130 *
Defogl:Dirad          1   16.01   16.01  1.0468 0.3531669
N_Gemme:Vigoria       2   54.11   27.06  1.7691 0.2624212
Defogl:Vigoria        2  215.08  107.54  7.0319 0.0352292 *
Dirad:Vigoria         2   20.91   10.46  0.6836 0.5464437
N_Gemme:Defogl:Dirad  1  179.74  179.74 11.7530 0.0186707 *
Residuals             5   76.47   15.29
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.928
IASMA_2: n.s
IASMA_3: n.s
```

Antoctot1B

Analysis of Variance Table

```
Response: Ca_2008M[, 33]
                     Df Sum Sq Mean Sq F value Pr(>F)
IASMA_1               1   7814  7813.6  0.7054 0.4393
IASMA_2               1   8312  8311.8  0.7504 0.4259
IASMA_3               1   1633  1632.6  0.1474 0.7168
```

```
N_Gemme               1     44     43.8  0.0040 0.9523
Defogl                1   2024   2023.6  0.1827 0.6868
Dirad                 1   1140   1140.4  0.1030 0.7613
Vigoria               2  18195   9097.7  0.8214 0.4915
N_Gemme:Defogl        1   2081   2080.9  0.1879 0.6828
N_Gemme:Dirad         1    666    665.8  0.0601 0.8161
Defogl:Dirad          1   2260   2259.7  0.2040 0.6704
N_Gemme:Vigoria       2  15883   7941.3  0.7170 0.5324
Defogl:Vigoria        2    367    183.4  0.0166 0.9836
Dirad:Vigoria         2   4431   2215.4  0.2000 0.8250
N_Gemme:Defogl:Dirad  1   1533   1533.1  0.1384 0.7251
Residuals             5  55380  11076.1
```

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

Poliftot1B

Analysis of Variance Table

```
Response: Ca_2008M[, 34]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1  14757   14757  1.5891 0.26308
IASMA_2               1  39720   39720  4.2772 0.09346 .
IASMA_3               1  14010   14010  1.5086 0.27401
N_Gemme               1   4610    4610  0.4964 0.51253
Defogl                1   5264    5264  0.5669 0.48542
Dirad                 1 132183  132183 14.2340 0.01299 *
Vigoria               2  75291   37645  4.0538 0.08987 .
N_Gemme:Defogl        1  22544   22544  2.4276 0.17995
N_Gemme:Dirad         1   1322    1322  0.1423 0.72145
Defogl:Dirad          1    231     231  0.0249 0.88086
N_Gemme:Vigoria       2   9120    4560  0.4910 0.63870
Defogl:Vigoria        2   8548    4274  0.4602 0.65545
Dirad:Vigoria         2  34221   17110  1.8425 0.25147
N_Gemme:Defogl:Dirad  1  32348   32348  3.4833 0.12098
Residuals             5  46432    9286
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

Antoctot2B

Analysis of Variance Table

```
Response: Ca_2008M[, 35]
                     Df Sum Sq Mean Sq F value Pr(>F)
IASMA_1               1   6266   6265.8  0.5939 0.4758
IASMA_2               1   1292   1291.8  0.1224 0.7407
IASMA_3               1  25007  25006.9  2.3701 0.1843
N_Gemme               1      2      2.5  0.0002 0.9884
Defogl                1  29018  29018.0  2.7502 0.1581
Dirad                 1   2441   2441.1  0.2314 0.6508
Vigoria               2  26794  13396.8  1.2697 0.3582
N_Gemme:Defogl        1   2262   2261.7  0.2144 0.6628
```

```
N_Gemme:Dirad         1    288   287.7  0.0273 0.8753
Defogl:Dirad          1   2411  2411.1  0.2285 0.6528
N_Gemme:Vigoria       2  24994 12497.0  1.1844 0.3792
Defogl:Vigoria        2   3198  1599.2  0.1516 0.8632
Dirad:Vigoria         2   9946  4972.9  0.4713 0.6493
N_Gemme:Defogl:Dirad  1  12113 12113.3  1.1481 0.3329
Residuals             5  52755 10551.1
```

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

Poliftot2B

Analysis of Variance Table

```
Response: Ca_2008M[, 36]
                     Df Sum Sq Mean Sq F value Pr(>F)
IASMA_1               1   2615    2615  0.0765 0.7932
IASMA_2               1    898     898  0.0263 0.8776
IASMA_3               1   6158    6158  0.1801 0.6889
N_Gemme               1  10757   10757  0.3146 0.5990
Defogl                1  54070   54070  1.5816 0.2641
Dirad                 1 139457  139457  4.0792 0.0994 .
Vigoria               2   3626    1813  0.0530 0.9489
N_Gemme:Defogl        1  23933   23933  0.7000 0.4409
N_Gemme:Dirad         1    175     175  0.0051 0.9457
Defogl:Dirad          1   1931    1931  0.0565 0.8216
N_Gemme:Vigoria       2  45619   22809  0.6672 0.5536
Defogl:Vigoria        2  17709    8855  0.2590 0.7816
Dirad:Vigoria         2  48034   24017  0.7025 0.5384
N_Gemme:Defogl:Dirad  1  67624   67624  1.9780 0.2186
Residuals             5 170937   34187
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

CACCIAGRANDE 2009M IBIMET

PvinacciaA

Analysis of Variance Table

```
Response: Ca_2009M[, 11]
                Df  Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1         1 1644092 1644092 70.0495 4.241e-06 ***
IBIMET_2         1  679978  679978 28.9717 0.0002225 ***
IBIMET_3         1    4672    4672  0.1991 0.6641256
N_Gemme          1  278130  278130 11.8502 0.0055012 **
Defogl           1   83825   83825  3.5715 0.0854047 .
Vigoria          2   59513   29757  1.2678 0.3195373
N_Gemme:Defogl   1     133     133  0.0057 0.9413801
N_Gemme:Vigoria  2  335315  167658  7.1433 0.0102743 *
Defogl:Vigoria   2  199057   99529  4.2406 0.0431296 *
Residuals       11  258175   23470
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.93
IBIMET_2: -0.851
IBIMET_3: n.s


DensMostoA

Analysis of Variance Table

Response: Ca_2009M[, 12]
                Df    Sum Sq   Mean Sq  F value    Pr(>F)    
IBIMET_1         1 8.091e-04 8.091e-04 149.0682 9.736e-08 ***
IBIMET_2         1 2.658e-05 2.658e-05   4.8978   0.04895 *  
IBIMET_3         1 8.770e-06 8.770e-06   1.6159   0.22989    
N_Gemme          1 1.428e-05 1.428e-05   2.6309   0.13309    
Defogl           1 2.391e-05 2.391e-05   4.4049   0.05973 .  
Vigoria          2 1.301e-05 6.500e-06   1.1981   0.33827    
N_Gemme:Defogl   1 1.800e-06 1.800e-06   0.3313   0.57650    
N_Gemme:Vigoria  2 6.770e-06 3.380e-06   0.6235   0.55398    
Defogl:Vigoria   2 3.140e-06 1.570e-06   0.2892   0.75438    
Residuals       11 5.970e-05 5.430e-06                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.965
IBIMET_2: -0.555
IBIMET_3: n.s


BrixA

Analysis of Variance Table

Response: Ca_2009M[, 13]
                Df Sum Sq Mean Sq  F value    Pr(>F)    
IBIMET_1         1 38.784  38.784 146.8856 1.050e-07 ***
IBIMET_2         1  1.349   1.349   5.1077   0.04509 *  
IBIMET_3         1  0.401   0.401   1.5182   0.24358    
N_Gemme          1  0.869   0.869   3.2914   0.09698 .  
Defogl           1  1.212   1.212   4.5919   0.05533 .  
Vigoria          2  0.490   0.245   0.9270   0.42457    
N_Gemme:Defogl   1  0.119   0.119   0.4495   0.51640    
N_Gemme:Vigoria  2  0.393   0.197   0.7449   0.49729    
Defogl:Vigoria   2  0.134   0.067   0.2538   0.78029    
Residuals       11  2.904   0.264                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.965
IBIMET_2: -0.563
IBIMET_3: n.s


PhA

Analysis of Variance Table

Response: Ca_2009M[, 14]
                Df   Sum Sq  Mean Sq F value    Pr(>F)    
```

```
IBIMET_1         1 0.133854 0.133854 65.7040 5.764e-06 ***
IBIMET_2         1 0.003580 0.003580  1.7575  0.211813
IBIMET_3         1 0.001367 0.001367  0.6712  0.430022
N_Gemme          1 0.027705 0.027705 13.5992  0.003577 **
Defogl           1 0.000065 0.000065  0.0317  0.861904
Vigoria          2 0.003717 0.001858  0.9122  0.430000
N_Gemme:Defogl   1 0.004988 0.004988  2.4486  0.145922
N_Gemme:Vigoria  2 0.001340 0.000670  0.3290  0.726518
Defogl:Vigoria   2 0.008358 0.004179  2.0513  0.174930
Residuals       11 0.022409 0.002037
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.926
IBIMET_2: n.s
IBIMET_3: n.s


AcTitolA

Analysis of Variance Table

Response: Ca_2009M[, 15]
                Df  Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1         1 0.59692 0.59692 22.5671 0.0005992 ***
IBIMET_2         1 0.05574 0.05574  2.1071 0.1745297
IBIMET_3         1 0.10262 0.10262  3.8795 0.0745767 .
N_Gemme          1 0.00087 0.00087  0.0328 0.8596008
Defogl           1 0.06004 0.06004  2.2699 0.1600720
Vigoria          2 0.64566 0.32283 12.2048 0.0016125 **
N_Gemme:Defogl   1 0.24682 0.24682  9.3312 0.0109551 *
N_Gemme:Vigoria  2 0.08494 0.04247  1.6056 0.2444591
Defogl:Vigoria   2 0.00200 0.00100  0.0378 0.9630179
Residuals       11 0.29096 0.02645
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.82
IBIMET_2: n.s
IBIMET_3: n.s


AcTartA

Analysis of Variance Table

Response: Ca_2009M[, 16]
                Df  Sum Sq  Mean Sq F value  Pr(>F)
IBIMET_1         1 0.20027 0.200268  5.0137 0.04677 *
IBIMET_2         1 0.00643 0.006430  0.1610 0.69594
IBIMET_3         1 0.01374 0.013740  0.3440 0.56938
N_Gemme          1 0.01052 0.010517  0.2633 0.61801
Defogl           1 0.00021 0.000205  0.0051 0.94415
Vigoria          2 0.04275 0.021374  0.5351 0.60012
N_Gemme:Defogl   1 0.20222 0.202223  5.0627 0.04589 *
N_Gemme:Vigoria  2 0.00979 0.004897  0.1226 0.88582
Defogl:Vigoria   2 0.02739 0.013693  0.3428 0.71710
Residuals       11 0.43939 0.039944
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
IBIMET_1: -0.56
IBIMET_2: n.s
IBIMET_3: n.s


AcMalicoA

Analysis of Variance Table

Response: Ca_2009M[, 17]
                Df  Sum Sq Mean Sq F value   Pr(>F)   
IBIMET_1         1 1.21325 1.21325 18.1167 0.001351 **
IBIMET_2         1 0.08253 0.08253  1.2324 0.290621   
IBIMET_3         1 0.20844 0.20844  3.1125 0.105405   
N_Gemme          1 0.00459 0.00459  0.0685 0.798314   
Defogl           1 0.14959 0.14959  2.2337 0.163150   
Vigoria          2 0.12573 0.06287  0.9387 0.420332   
N_Gemme:Defogl   1 0.05211 0.05211  0.7781 0.396594   
N_Gemme:Vigoria  2 0.07242 0.03621  0.5407 0.597049   
Defogl:Vigoria   2 0.00860 0.00430  0.0642 0.938187   
Residuals       11 0.73665 0.06697                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.789
IBIMET_2: n.s
IBIMET_3: n.s


KA

Analysis of Variance Table

Response: Ca_2009M[, 18]
                Df   Sum Sq  Mean Sq F value    Pr(>F)    
IBIMET_1         1 0.286219 0.286219 36.9551 7.971e-05 ***
IBIMET_2         1 0.000091 0.000091  0.0117  0.915856    
IBIMET_3         1 0.000083 0.000083  0.0107  0.919580    
N_Gemme          1 0.117285 0.117285 15.1433  0.002513 ** 
Defogl           1 0.002078 0.002078  0.2683  0.614742    
Vigoria          2 0.083829 0.041914  5.4117  0.023098 *  
N_Gemme:Defogl   1 0.005628 0.005628  0.7267  0.412140    
N_Gemme:Vigoria  2 0.007372 0.003686  0.4759  0.633532    
Defogl:Vigoria   2 0.006166 0.003083  0.3980  0.680932    
Residuals       11 0.085196 0.007745                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.878
IBIMET_2: n.s
IBIMET_3: n.s


ApaA

Analysis of Variance Table

Response: Ca_2009M[, 19]
                Df  Sum Sq Mean Sq F value  Pr(>F)  
IBIMET_1         1  547.78  547.78  2.6426 0.13231  
IBIMET_2         1  777.22  777.22  3.7495 0.07893 .
```

```
IBIMET_3          1   50.63   50.63  0.2443 0.63087
N_Gemme           1 1104.00 1104.00  5.3260 0.04146 *
Defogl            1  281.24  281.24  1.3568 0.26873
Vigoria           2   35.51   17.76  0.0857 0.91851
N_Gemme:Defogl    1   92.05   92.05  0.4441 0.51889
N_Gemme:Vigoria   2   42.19   21.10  0.1018 0.90408
Defogl:Vigoria    2  598.24  299.12  1.4430 0.27763
Residuals        11 2280.13  207.28
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: n.s
```

Antoctot1A

```
Analysis of Variance Table

Response: Ca_2009M[, 20]
                 Df Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1          1  68145   68145 49.2935 2.208e-05 ***
IBIMET_2          1   7025    7025  5.0816   0.04555 *
IBIMET_3          1    294     294  0.2128   0.65360
N_Gemme           1    275     275  0.1991   0.66407
Defogl            1     29      29  0.0210   0.88733
Vigoria           2   7287    3643  2.6355   0.11611
N_Gemme:Defogl    1    888     888  0.6424   0.43983
N_Gemme:Vigoria   2   9733    4867  3.5204   0.06580 .
Defogl:Vigoria    2    957     479  0.3462   0.71483
Residuals        11  15207    1382
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.904
IBIMET_2: 0.562
IBIMET_3: n.s
```

Poliftot1A

```
Analysis of Variance Table

Response: Ca_2009M[, 21]
                 Df  Sum Sq Mean Sq F value  Pr(>F)
IBIMET_1          1   125.5   125.5  0.1200 0.73557
IBIMET_2          1  7634.3  7634.3  7.2999 0.02059 *
IBIMET_3          1   483.0   483.0  0.4619 0.51080
N_Gemme           1   189.9   189.9  0.1816 0.67824
Defogl            1  2567.1  2567.1  2.4546 0.14548
Vigoria           2  1893.2   946.6  0.9052 0.43260
N_Gemme:Defogl    1   108.7   108.7  0.1039 0.75324
N_Gemme:Vigoria   2  5880.6  2940.3  2.8115 0.10322
Defogl:Vigoria    2  2461.8  1230.9  1.1770 0.34419
Residuals        11 11504.0  1045.8
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: 0.632
```

```
IBIMET_3: n.s


Antoctot2A

Analysis of Variance Table

Response: Ca_2009M[, 22]
                 Df Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_1          1 346345  346345 43.6439 3.831e-05 ***
IBIMET_2          1  18954   18954  2.3884   0.15051    
IBIMET_3          1    761     761  0.0958   0.76266    
N_Gemme           1    997     997  0.1256   0.72969    
Defogl            1    414     414  0.0522   0.82345    
Vigoria           2  50796   25398  3.2005   0.08026 .  
N_Gemme:Defogl    1   2525    2525  0.3182   0.58401    
N_Gemme:Vigoria   2  48267   24133  3.0411   0.08885 .  
Defogl:Vigoria    2    299     150  0.0189   0.98136    
Residuals        11  87293    7936                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.894
IBIMET_2: n.s
IBIMET_3: n.s


Poliftot2A

Analysis of Variance Table

Response: Ca_2009M[, 23]
                 Df Sum Sq Mean Sq F value Pr(>F)
IBIMET_1          1    184   184.3  0.0189 0.8932
IBIMET_2          1   5274  5274.3  0.5406 0.4776
IBIMET_3          1    204   203.6  0.0209 0.8878
N_Gemme           1   5059  5058.8  0.5185 0.4865
Defogl            1  28359 28359.2  2.9065 0.1163
Vigoria           2  24985 12492.4  1.2803 0.3163
N_Gemme:Defogl    1   5053  5053.2  0.5179 0.4867
N_Gemme:Vigoria   2  28776 14387.9  1.4746 0.2708
Defogl:Vigoria    2   4493  2246.4  0.2302 0.7981
Residuals        11 107328  9757.1               

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: n.s


PvinacciaB

Analysis of Variance Table

Response: Ca_2009M[, 24]
                 Df Sum Sq Mean Sq F value   Pr(>F)   
IBIMET_1          1 659959  659959  7.8383 0.017284 * 
IBIMET_2          1 542652  542652  6.4450 0.027543 * 
IBIMET_3          1   9888    9888  0.1174 0.738288   
N_Gemme           1 930086  930086 11.0466 0.006787 **
Defogl            1  14313   14313  0.1700 0.688039   
Vigoria           2 162955   81477  0.9677 0.410082   
```

```
N_Gemme:Defogl   1     50      50  0.0006 0.981087
N_Gemme:Vigoria  2  49234   24617  0.2924 0.752116
Defogl:Vigoria   2 186128   93064  1.1053 0.365242
Residuals       11 926166   84197
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.645
IBIMET_2: -0.608
IBIMET_3: n.s
```

DensMostoB

Analysis of Variance Table

```
Response: Ca_2009M[, 25]
                Df     Sum Sq    Mean Sq F value    Pr(>F)    
IBIMET_1         1 0.00080527 0.00080527 54.9185 1.342e-05 ***
IBIMET_2         1 0.00000511 0.00000511  0.3482   0.56707    
IBIMET_3         1 0.00003082 0.00003082  2.1017   0.17504    
N_Gemme          1 0.00005279 0.00005279  3.6001   0.08432 .  
Defogl           1 0.00000020 0.00000020  0.0139   0.90843    
Vigoria          2 0.00002236 0.00001118  0.7626   0.48962    
N_Gemme:Defogl   1 0.00004979 0.00004979  3.3956   0.09246 .  
N_Gemme:Vigoria  2 0.00000636 0.00000318  0.2170   0.80826    
Defogl:Vigoria   2 0.00001891 0.00000945  0.6448   0.54351    
Residuals       11 0.00016129 0.00001466                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.913
IBIMET_2: n.s
IBIMET_3: n.s
```

BrixB

Analysis of Variance Table

```
Response: Ca_2009M[, 26]
                Df Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_1         1 39.093  39.093 55.3699 1.292e-05 ***
IBIMET_2         1  0.250   0.250  0.3543   0.56375    
IBIMET_3         1  1.427   1.427  2.0213   0.18283    
N_Gemme          1  2.433   2.433  3.4463   0.09036 .  
Defogl           1  0.012   0.012  0.0172   0.89797    
Vigoria          2  1.033   0.516  0.7313   0.50329    
N_Gemme:Defogl   1  2.619   2.619  3.7092   0.08034 .  
N_Gemme:Vigoria  2  0.395   0.198  0.2801   0.76096    
Defogl:Vigoria   2  0.849   0.424  0.6010   0.56530    
Residuals       11  7.766   0.706                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.913
IBIMET_2: n.s
IBIMET_3: n.s
```

PhB

```
Analysis of Variance Table

Response: Ca_2009M[, 27]
                Df   Sum Sq  Mean Sq F value    Pr(>F)    
IBIMET_1         1 0.180918 0.180918 30.1390 0.0001891 ***
IBIMET_2         1 0.015197 0.015197  2.5317 0.1398898    
IBIMET_3         1 0.001991 0.001991  0.3317 0.5762415    
N_Gemme          1 0.034221 0.034221  5.7009 0.0360109 *  
Defogl           1 0.005654 0.005654  0.9419 0.3526451    
Vigoria          2 0.008916 0.004458  0.7427 0.4982665    
N_Gemme:Defogl   1 0.000482 0.000482  0.0802 0.7822227    
N_Gemme:Vigoria  2 0.000362 0.000181  0.0301 0.9704172    
Defogl:Vigoria   2 0.003295 0.001647  0.2744 0.7650629    
Residuals       11 0.066031 0.006003                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.856
IBIMET_2: n.s
IBIMET_3: n.s


AcTitolB

Analysis of Variance Table

Response: Ca_2009M[, 28]
                Df  Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_1         1 0.65697 0.65697 23.6357 0.0005013 ***
IBIMET_2         1 0.00190 0.00190  0.0682 0.7988184    
IBIMET_3         1 0.07358 0.07358  2.6472 0.1320094    
N_Gemme          1 0.13398 0.13398  4.8201 0.0504836 .  
Defogl           1 0.01256 0.01256  0.4520 0.5152758    
Vigoria          2 0.04158 0.02079  0.7480 0.4959438    
N_Gemme:Defogl   1 0.10504 0.10504  3.7792 0.0779074 .  
N_Gemme:Vigoria  2 0.02481 0.01241  0.4463 0.6510807    
Defogl:Vigoria   2 0.01716 0.00858  0.3087 0.7405409    
Residuals       11 0.30575 0.02780                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.826
IBIMET_2: n.s
IBIMET_3: n.s


AcTartB

Analysis of Variance Table

Response: Ca_2009M[, 29]
                Df   Sum Sq  Mean Sq F value  Pr(>F)  
IBIMET_1         1 0.005023 0.005023  0.2063 0.65852  
IBIMET_2         1 0.142445 0.142445  5.8498 0.03409 *
IBIMET_3         1 0.085119 0.085119  3.4956 0.08837 .
N_Gemme          1 0.047527 0.047527  1.9518 0.18994  
Defogl           1 0.023888 0.023888  0.9810 0.34323  
Vigoria          2 0.049570 0.024785  1.0179 0.39303  
N_Gemme:Defogl   1 0.076268 0.076268  3.1321 0.10444  
N_Gemme:Vigoria  2 0.020941 0.010471  0.4300 0.66099  
```

```
Defogl:Vigoria   2 0.018046 0.009023  0.3705 0.69866
Residuals       11 0.267855 0.024350
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: n.s
IBIMET_2: -0.589
IBIMET_3: n.s

AcMalicoB

Analysis of Variance Table

```
Response: Ca_2009M[, 30]
                Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1         1 0.45677 0.45677 11.3564 0.006253 **
IBIMET_2         1 0.16121 0.16121  4.0082 0.070557 .
IBIMET_3         1 0.25340 0.25340  6.3003 0.028985 *
N_Gemme          1 0.00000 0.00000  0.0000 0.997308
Defogl           1 0.00580 0.00580  0.1441 0.711439
Vigoria          2 0.06754 0.03377  0.8397 0.457753
N_Gemme:Defogl   1 0.05830 0.05830  1.4496 0.253865
N_Gemme:Vigoria  2 0.00038 0.00019  0.0047 0.995297
Defogl:Vigoria   2 0.05348 0.02674  0.6648 0.533853
Residuals       11 0.44243 0.04022
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: -0.713
IBIMET_2: n.s
IBIMET_3: 0.603

KB

Analysis of Variance Table

```
Response: Ca_2009M[, 31]
                Df  Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1         1 0.35880 0.35880 31.7394 0.0001524 ***
IBIMET_2         1 0.04377 0.04377  3.8716 0.0748336 .
IBIMET_3         1 0.14054 0.14054 12.4326 0.0047482 **
N_Gemme          1 0.14938 0.14938 13.2139 0.0039216 **
Defogl           1 0.02881 0.02881  2.5489 0.1386750
Vigoria          2 0.00763 0.00381  0.3375 0.7207113
N_Gemme:Defogl   1 0.03334 0.03334  2.9489 0.1139229
N_Gemme:Vigoria  2 0.00370 0.00185  0.1637 0.8510542
Defogl:Vigoria   2 0.01907 0.00954  0.8436 0.4561742
Residuals       11 0.12435 0.01130
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: -0.862
IBIMET_2: n.s
IBIMET_3: 0.728

ApaB

Analysis of Variance Table

Response: Ca_2009M[, 32]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 479.44 | 479.44 | 5.9122 | 0.0333214 | * |
| IBIMET_2 | 1 | 628.72 | 628.72 | 7.7530 | 0.0177631 | * |
| IBIMET_3 | 1 | 470.27 | 470.27 | 5.7990 | 0.0347299 | * |
| N_Gemme | 1 | 1635.53 | 1635.53 | 20.1682 | 0.0009148 | *** |
| Defogl | 1 | 775.92 | 775.92 | 9.5681 | 0.0102270 | * |
| Vigoria | 2 | 471.93 | 235.97 | 2.9098 | 0.0967569 | . |
| N_Gemme:Defogl | 1 | 5.19 | 5.19 | 0.0639 | 0.8050337 | |
| N_Gemme:Vigoria | 2 | 188.86 | 94.43 | 1.1644 | 0.3477787 | |
| Defogl:Vigoria | 2 | 370.84 | 185.42 | 2.2865 | 0.1477840 | |
| Residuals | 11 | 892.04 | 81.09 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.591
IBIMET_2: 0.643
IBIMET_3: -0.588

Antoctot1B

Analysis of Variance Table

Response: Ca_2009M[, 33]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 34716 | 34716 | 9.4032 | 0.01073 | * |
| IBIMET_2 | 1 | 989 | 989 | 0.2680 | 0.61493 | |
| IBIMET_3 | 1 | 12202 | 12202 | 3.3051 | 0.09637 | . |
| N_Gemme | 1 | 3918 | 3918 | 1.0614 | 0.32503 | |
| Defogl | 1 | 3807 | 3807 | 1.0312 | 0.33169 | |
| Vigoria | 2 | 1073 | 536 | 0.1453 | 0.86640 | |
| N_Gemme:Defogl | 1 | 3338 | 3338 | 0.9042 | 0.36209 | |
| N_Gemme:Vigoria | 2 | 5075 | 2537 | 0.6873 | 0.52330 | |
| Defogl:Vigoria | 2 | 2433 | 1217 | 0.3295 | 0.72613 | |
| Residuals | 11 | 40611 | 3692 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.679
IBIMET_2: n.s
IBIMET_3: n.s

Poliftot1B

Analysis of Variance Table

Response: Ca_2009M[, 34]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 7282.7 | 7282.7 | 3.7237 | 0.07983 | . |
| IBIMET_2 | 1 | 9778.7 | 9778.7 | 4.9999 | 0.04703 | * |
| IBIMET_3 | 1 | 8529.6 | 8529.6 | 4.3612 | 0.06081 | . |
| N_Gemme | 1 | 2201.5 | 2201.5 | 1.1256 | 0.31145 | |
| Defogl | 1 | 7626.3 | 7626.3 | 3.8994 | 0.07394 | . |
| Vigoria | 2 | 22087.5 | 11043.7 | 5.6467 | 0.02054 | * |
| N_Gemme:Defogl | 1 | 815.7 | 815.7 | 0.4171 | 0.53165 | |
| N_Gemme:Vigoria | 2 | 731.8 | 365.9 | 0.1871 | 0.83196 | |
| Defogl:Vigoria | 2 | 641.9 | 321.0 | 0.1641 | 0.85069 | |
| Residuals | 11 | 21513.5 | 1955.8 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: -0.559
IBIMET_3: n.s

Antoctot2B

Analysis of Variance Table

Response: Ca_2009M[, 35]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 102151 | 102151 | 6.3621 | 0.02836 | * |
| IBIMET_2 | 1 | 182 | 182 | 0.0113 | 0.91718 | |
| IBIMET_3 | 1 | 44512 | 44512 | 2.7723 | 0.12410 | |
| N_Gemme | 1 | 26336 | 26336 | 1.6403 | 0.22663 | |
| Defogl | 1 | 7300 | 7300 | 0.4547 | 0.51404 | |
| Vigoria | 2 | 1561 | 780 | 0.0486 | 0.95277 | |
| N_Gemme:Defogl | 1 | 8949 | 8949 | 0.5574 | 0.47098 | |
| N_Gemme:Vigoria | 2 | 10972 | 5486 | 0.3417 | 0.71787 | |
| Defogl:Vigoria | 2 | 16100 | 8050 | 0.5013 | 0.61891 | |
| Residuals | 11 | 176619 | 16056 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.605
IBIMET_2: n.s
IBIMET_3: n.s

Poliftot2B

Analysis of Variance Table

Response: Ca_2009M[, 36]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 290954 | 290954 | 53.3339 | 1.537e-05 | *** |
| IBIMET_2 | 1 | 5713 | 5713 | 1.0472 | 0.32814 | |
| IBIMET_3 | 1 | 207 | 207 | 0.0380 | 0.84909 | |
| N_Gemme | 1 | 1313 | 1313 | 0.2406 | 0.63341 | |
| Defogl | 1 | 39079 | 39079 | 7.1635 | 0.02154 | * |
| Vigoria | 2 | 15911 | 7955 | 1.4583 | 0.27430 | |
| N_Gemme:Defogl | 1 | 20411 | 20411 | 3.7415 | 0.07921 | . |
| N_Gemme:Vigoria | 2 | 5799 | 2900 | 0.5315 | 0.60206 | |
| Defogl:Vigoria | 2 | 1824 | 912 | 0.1672 | 0.84812 | |
| Residuals | 11 | 60009 | 5455 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.911
IBIMET_2: n.s
IBIMET_3: n.s

CACCIAGRANDE 2009M DIPROVE

PvinacciaA

Analysis of Variance Table

```
Response: Ca_2009M[, 11]
                Df  Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1        1 2014601 2014601 49.6425 2.138e-05 ***
DIPROVE_2        1   13945   13945  0.3436   0.56958    
DIPROVE_3        1   30063   30063  0.7408   0.40777    
N_Gemme          1  304247  304247  7.4971   0.01930 *  
Defogl           1   16504   16504  0.4067   0.53671    
Vigoria          2  284135  142067  3.5007   0.06660 .  
N_Gemme:Defogl   1   15745   15745  0.3880   0.54606    
N_Gemme:Vigoria  2  241964  120982  2.9812   0.09236 .  
Defogl:Vigoria   2  175283   87642  2.1596   0.16176    
Residuals       11  446403   40582                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.905
DIPROVE_2: n.s
DIPROVE_3: n.s


DensMostoA

Analysis of Variance Table

Response: Ca_2009M[, 12]
                Df     Sum Sq    Mean Sq F value    Pr(>F)    
DIPROVE_1        1 0.00032350 0.00032350 69.5621 4.386e-06 ***
DIPROVE_2        1 0.00000002 0.00000002  0.0038 0.9518485    
DIPROVE_3        1 0.00008648 0.00008648 18.5956 0.0012305 ** 
N_Gemme          1 0.00000047 0.00000047  0.1005 0.7571585    
Defogl           1 0.00013487 0.00013487 29.0004 0.0002216 ***
Vigoria          2 0.00036649 0.00018324 39.4033 9.649e-06 ***
N_Gemme:Defogl   1 0.00000003 0.00000003  0.0063 0.9380957    
N_Gemme:Vigoria  2 0.00000264 0.00000132  0.2843 0.7578763    
Defogl:Vigoria   2 0.00000141 0.00000071  0.1518 0.8609312    
Residuals       11 0.00005116 0.00000465                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.929
DIPROVE_2: n.s
DIPROVE_3: 0.793


BrixA

Analysis of Variance Table

Response: Ca_2009M[, 13]
                Df  Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1        1 15.2992 15.2992 67.2018 5.175e-06 ***
DIPROVE_2        1  0.0000  0.0000  0.0000 0.9968561    
DIPROVE_3        1  4.1521  4.1521 18.2383 0.0013193 ** 
N_Gemme          1  0.0602  0.0602  0.2643 0.6173613    
Defogl           1  6.4666  6.4666 28.4044 0.0002412 ***
Vigoria          2 17.9329  8.9664 39.3850 9.670e-06 ***
N_Gemme:Defogl   1  0.0031  0.0031  0.0138 0.9086263    
N_Gemme:Vigoria  2  0.1545  0.0773  0.3394 0.7194202    
Defogl:Vigoria   2  0.0817  0.0409  0.1795 0.8380572    
Residuals       11  2.5043  0.2277                      
---
```

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.927
DIPROVE_2: n.s
DIPROVE_3: 0.79

PhA

Analysis of Variance Table

Response: Ca_2009M[, 14]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.042446 | 0.042446 | 27.0696 | 0.0002932 | *** |
| DIPROVE_2 | 1 | 0.000277 | 0.000277 | 0.1765 | 0.6824951 | |
| DIPROVE_3 | 1 | 0.024239 | 0.024239 | 15.4582 | 0.0023453 | ** |
| N_Gemme | 1 | 0.017512 | 0.017512 | 11.1679 | 0.0065719 | ** |
| Defogl | 1 | 0.040955 | 0.040955 | 26.1186 | 0.0003384 | *** |
| Vigoria | 2 | 0.054618 | 0.027309 | 17.4161 | 0.0003901 | *** |
| N_Gemme:Defogl | 1 | 0.006892 | 0.006892 | 4.3954 | 0.0599611 | . |
| N_Gemme:Vigoria | 2 | 0.000179 | 0.000090 | 0.0572 | 0.9447250 | |
| Defogl:Vigoria | 2 | 0.003016 | 0.001508 | 0.9618 | 0.4121398 | |
| Residuals | 11 | 0.017248 | 0.001568 | | | |

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.843
DIPROVE_2: n.s
DIPROVE_3: 0.764

AcTitolA

Analysis of Variance Table

Response: Ca_2009M[, 15]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.43914 | 0.43914 | 8.8729 | 0.01255 | * |
| DIPROVE_2 | 1 | 0.46799 | 0.46799 | 9.4557 | 0.01056 | * |
| DIPROVE_3 | 1 | 0.03018 | 0.03018 | 0.6098 | 0.45134 | |
| N_Gemme | 1 | 0.00296 | 0.00296 | 0.0597 | 0.81144 | |
| Defogl | 1 | 0.16699 | 0.16699 | 3.3741 | 0.09337 | . |
| Vigoria | 2 | 0.29354 | 0.14677 | 2.9655 | 0.09331 | . |
| N_Gemme:Defogl | 1 | 0.06335 | 0.06335 | 1.2801 | 0.28195 | |
| N_Gemme:Vigoria | 2 | 0.01030 | 0.00515 | 0.1041 | 0.90204 | |
| Defogl:Vigoria | 2 | 0.06769 | 0.03384 | 0.6838 | 0.52490 | |
| Residuals | 11 | 0.54442 | 0.04949 | | | |

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.668
DIPROVE_2: -0.68
DIPROVE_3: n.s

AcTartA

Analysis of Variance Table

Response: Ca_2009M[, 16]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|

```
DIPROVE_1         1 0.19400 0.193999  4.9012 0.04889 *
DIPROVE_2         1 0.01876 0.018757  0.4739 0.50547
DIPROVE_3         1 0.01585 0.015852  0.4005 0.53977
N_Gemme           1 0.00430 0.004297  0.1086 0.74799
Defogl            1 0.01817 0.018166  0.4590 0.51211
Vigoria           2 0.16802 0.084012  2.1225 0.16613
N_Gemme:Defogl    1 0.08641 0.086409  2.1831 0.16759
N_Gemme:Vigoria   2 0.00838 0.004188  0.1058 0.90049
Defogl:Vigoria    2 0.00341 0.001707  0.0431 0.95794
Residuals        11 0.43540 0.039582
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.555
DIPROVE_2: n.s
DIPROVE_3: n.s
```

AcMalicoA

```
Analysis of Variance Table

Response: Ca_2009M[, 17]
                 Df  Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1         1 0.50365 0.50365  7.5727 0.01883 *
DIPROVE_2         1 0.23948 0.23948  3.6007 0.08430 .
DIPROVE_3         1 0.19628 0.19628  2.9512 0.11379
N_Gemme           1 0.00570 0.00570  0.0857 0.77518
Defogl            1 0.18413 0.18413  2.7686 0.12433
Vigoria           2 0.59791 0.29895  4.4950 0.03743 *
N_Gemme:Defogl    1 0.04714 0.04714  0.7088 0.41776
N_Gemme:Vigoria   2 0.02994 0.01497  0.2251 0.80206
Defogl:Vigoria    2 0.11809 0.05904  0.8878 0.43911
Residuals        11 0.73159 0.06651
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.639
DIPROVE_2: n.s
DIPROVE_3: n.s
```

KA

```
Analysis of Variance Table

Response: Ca_2009M[, 18]
                 Df   Sum Sq  Mean Sq F value   Pr(>F)
DIPROVE_1         1 0.128806 0.128806 17.6129 0.001494 **
DIPROVE_2         1 0.040602 0.040602  5.5520 0.038064 *
DIPROVE_3         1 0.031837 0.031837  4.3534 0.061011 .
N_Gemme           1 0.092987 0.092987 12.7150 0.004427 **
Defogl            1 0.062263 0.062263  8.5138 0.013991 *
Vigoria           2 0.118535 0.059268  8.1043 0.006867 **
N_Gemme:Defogl    1 0.014206 0.014206  1.9425 0.190917
N_Gemme:Vigoria   2 0.014588 0.007294  0.9974 0.399885
Defogl:Vigoria    2 0.009677 0.004839  0.6617 0.535378
Residuals        11 0.080445 0.007313
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.785
DIPROVE_2: -0.579
DIPROVE_3: n.s

ApaA

Analysis of Variance Table

```
Response: Ca_2009M[, 19]
                Df  Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1        1 1520.15 1520.15  8.1645 0.01559 *
DIPROVE_2        1  396.26  396.26  2.1283 0.17256  
DIPROVE_3        1  124.27  124.27  0.6674 0.43129  
N_Gemme          1  864.29  864.29  4.6420 0.05422 .
Defogl           1  356.04  356.04  1.9123 0.19414  
Vigoria          2  241.93  120.96  0.6497 0.54114  
N_Gemme:Defogl   1  129.65  129.65  0.6963 0.42177  
N_Gemme:Vigoria  2   42.77   21.38  0.1149 0.89255  
Defogl:Vigoria   2   85.56   42.78  0.2298 0.79844  
Residuals       11 2048.08  186.19                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.653
DIPROVE_2: n.s
DIPROVE_3: n.s

Antoctot1A

Analysis of Variance Table

```
Response: Ca_2009M[, 20]
                Df Sum Sq Mean Sq F value   Pr(>F)    
DIPROVE_1        1  14606 14605.6 10.7695 0.007312 ** 
DIPROVE_2        1   3021  3021.1  2.2276 0.163676    
DIPROVE_3        1   8313  8313.2  6.1298 0.030800 *  
N_Gemme          1    196   196.2  0.1447 0.710896    
Defogl           1  19013 19013.0 14.0193 0.003242 ** 
Vigoria          2  41283 20641.3 15.2200 0.000679 ***
N_Gemme:Defogl   1      0     0.1  0.0001 0.992573    
N_Gemme:Vigoria  2   6764  3382.1  2.4938 0.127896    
Defogl:Vigoria   2   1726   863.2  0.6365 0.547556    
Residuals       11  14918  1356.2                     
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.703
DIPROVE_2: n.s
DIPROVE_3: -0.598

Poliftot1A

Analysis of Variance Table

```
Response: Ca_2009M[, 21]
                Df  Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1        1  3180.5  3180.5  2.7435 0.12587
DIPROVE_2        1   259.4   259.4  0.2238 0.64544
```

```
DIPROVE_3         1   235.0   235.0  0.2027 0.66127
N_Gemme           1   751.6   751.6  0.6483 0.43777
Defogl            1  7480.1  7480.1  6.4524 0.02747 *
Vigoria           2  1867.6   933.8  0.8055 0.47157
N_Gemme:Defogl    1    44.8    44.8  0.0386 0.84780
N_Gemme:Vigoria   2  3633.6  1816.8  1.5672 0.25185
Defogl:Vigoria    2  2643.5  1321.7  1.1401 0.35483
Residuals        11 12752.1  1159.3
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

Antoctot2A

Analysis of Variance Table

```
Response: Ca_2009M[, 22]
                Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1        1  95915   95915 11.6906 0.005732 **
DIPROVE_2        1  15850   15850  1.9318 0.192044
DIPROVE_3        1  40232   40232  4.9037 0.048839 *
N_Gemme          1    836     836  0.1019 0.755493
Defogl           1  98459   98459 12.0006 0.005294 **
Vigoria          2 183183   91591 11.1635 0.002250 **
N_Gemme:Defogl   1    248     248  0.0302 0.865246
N_Gemme:Vigoria  2  30032   15016  1.8302 0.205994
Defogl:Vigoria   2   1646     823  0.1003 0.905375
Residuals       11  90250    8205
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: 0.718
DIPROVE_2: n.s
DIPROVE_3: -0.555

Poliftot2A

Analysis of Variance Table

```
Response: Ca_2009M[, 23]
                Df Sum Sq Mean Sq F value Pr(>F)
DIPROVE_1        1   7671    7671  0.7106 0.4172
DIPROVE_2        1    972     972  0.0900 0.7698
DIPROVE_3        1   1921    1921  0.1780 0.6812
N_Gemme          1   5240    5240  0.4854 0.5004
Defogl           1  33884   33884  3.1388 0.1041
Vigoria          2  18845    9423  0.8728 0.4448
N_Gemme:Defogl   1   2998    2998  0.2778 0.6086
N_Gemme:Vigoria  2  13280    6640  0.6151 0.5582
Defogl:Vigoria   2   6156    3078  0.2851 0.7573
Residuals       11 118747   10795
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

PvinacciaB

```
Analysis of Variance Table

Response: Ca_2009M[, 24]
                Df  Sum Sq Mean Sq F value   Pr(>F)   
DIPROVE_1        1  986158  986158 11.6714 0.005760 **
DIPROVE_2        1   12350   12350  0.1462 0.709507   
DIPROVE_3        1    6956    6956  0.0823 0.779498   
N_Gemme          1 1022817 1022817 12.1052 0.005155 **
Defogl           1    1006    1006  0.0119 0.915083   
Vigoria          2  319718  159859  1.8920 0.196706   
N_Gemme:Defogl   1    6530    6530  0.0773 0.786175   
N_Gemme:Vigoria  2   29091   14546  0.1722 0.844076   
Defogl:Vigoria   2  167370   83685  0.9904 0.402245   
Residuals       11  929432   84494                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: 0.718
DIPROVE_2: n.s
DIPROVE_3: n.s

DensMostoB

```
Analysis of Variance Table

Response: Ca_2009M[, 25]
                Df     Sum Sq    Mean Sq F value   Pr(>F)   
DIPROVE_1        1 2.8986e-04 2.8986e-04 16.9794 0.001699 **
DIPROVE_2        1 6.3048e-05 6.3048e-05  3.6932 0.080908 . 
DIPROVE_3        1 3.9055e-05 3.9055e-05  2.2878 0.158583   
N_Gemme          1 2.1920e-05 2.1920e-05  1.2841 0.281239   
Defogl           1 1.8584e-04 1.8584e-04 10.8863 0.007085 **
Vigoria          2 3.0764e-04 1.5382e-04  9.0106 0.004816 **
N_Gemme:Defogl   1 2.0125e-05 2.0125e-05  1.1789 0.300799   
N_Gemme:Vigoria  2 6.6870e-06 3.3440e-06  0.1959 0.824931   
Defogl:Vigoria   2 3.0953e-05 1.5476e-05  0.9066 0.432063   
Residuals       11 1.8778e-04 1.7071e-05                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.779
DIPROVE_2: n.s
DIPROVE_3: n.s

BrixB

```
Analysis of Variance Table

Response: Ca_2009M[, 26]
                Df  Sum Sq Mean Sq F value   Pr(>F)   
DIPROVE_1        1 14.1455 14.1455 16.9129 0.001722 **
DIPROVE_2        1  3.0628  3.0628  3.6620 0.082035 . 
DIPROVE_3        1  1.8630  1.8630  2.2275 0.163690   
N_Gemme          1  0.9810  0.9810  1.1729 0.301980   
Defogl           1  8.8399  8.8399 10.5692 0.007721 **
Vigoria          2 14.8083  7.4041  8.8526 0.005115 **
```

```
N_Gemme:Defogl   1  1.1480  1.1480  1.3726 0.266116
N_Gemme:Vigoria  2  0.4445  0.2223  0.2658 0.771410
Defogl:Vigoria   2  1.3851  0.6926  0.8280 0.462395
Residuals       11  9.2001  0.8364
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.778
DIPROVE_2: n.s
DIPROVE_3: n.s
```

PhB

```
Analysis of Variance Table

Response: Ca_2009M[, 27]
                Df   Sum Sq  Mean Sq F value  Pr(>F)
DIPROVE_1        1 0.031388 0.031388  5.5690 0.03782 *
DIPROVE_2        1 0.018848 0.018848  3.3441 0.09466 .
DIPROVE_3        1 0.030966 0.030966  5.4942 0.03890 *
N_Gemme          1 0.019942 0.019942  3.5382 0.08669 .
Defogl           1 0.066716 0.066716 11.8371 0.00552 **
Vigoria          2 0.079167 0.039583  7.0231 0.01083 *
N_Gemme:Defogl   1 0.000677 0.000677  0.1201 0.73547
N_Gemme:Vigoria  2 0.001478 0.000739  0.1311 0.87848
Defogl:Vigoria   2 0.005888 0.002944  0.5223 0.60715
Residuals       11 0.061998 0.005636
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.58
DIPROVE_2: n.s
DIPROVE_3: -0.577
```

AcTitolB

```
Analysis of Variance Table

Response: Ca_2009M[, 28]
                Df  Sum Sq  Mean Sq F value   Pr(>F)
DIPROVE_1        1 0.21324 0.213242 10.1919 0.008569 **
DIPROVE_2        1 0.27739 0.277395 13.2581 0.003880 **
DIPROVE_3        1 0.00823 0.008233  0.3935 0.543258
N_Gemme          1 0.10440 0.104401  4.9899 0.047211 *
Defogl           1 0.03863 0.038629  1.8463 0.201427
Vigoria          2 0.33555 0.167773  8.0187 0.007110 **
N_Gemme:Defogl   1 0.10154 0.101540  4.8531 0.049826 *
N_Gemme:Vigoria  2 0.04706 0.023530  1.1246 0.359427
Defogl:Vigoria   2 0.01714 0.008569  0.4096 0.673667
Residuals       11 0.23015 0.020923
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.693
DIPROVE_2: -0.739
DIPROVE_3: n.s
```

AcTartB

```
Analysis of Variance Table

Response: Ca_2009M[, 29]
                Df   Sum Sq  Mean Sq F value   Pr(>F)   
DIPROVE_1        1 0.000058 0.000058  0.0028 0.958509   
DIPROVE_2        1 0.031541 0.031541  1.5432 0.239979   
DIPROVE_3        1 0.000077 0.000077  0.0038 0.952045   
N_Gemme          1 0.016017 0.016017  0.7837 0.394964   
Defogl           1 0.012707 0.012707  0.6217 0.447081   
Vigoria          2 0.302718 0.151359  7.4053 0.009178 **
N_Gemme:Defogl   1 0.023596 0.023596  1.1544 0.305627   
N_Gemme:Vigoria  2 0.057775 0.028887  1.4133 0.284258   
Defogl:Vigoria   2 0.067363 0.033682  1.6479 0.236600   
Residuals       11 0.224831 0.020439                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1 

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

AcMalicoB

```
Analysis of Variance Table

Response: Ca_2009M[, 30]
                Df  Sum Sq  Mean Sq F value  Pr(>F)  
DIPROVE_1        1 0.16145 0.161454  4.1945 0.06519 .
DIPROVE_2        1 0.03136 0.031359  0.8147 0.38607  
DIPROVE_3        1 0.07260 0.072599  1.8861 0.19699  
N_Gemme          1 0.01464 0.014643  0.3804 0.54993  
Defogl           1 0.16565 0.165651  4.3035 0.06229 .
Vigoria          2 0.50947 0.254735  6.6179 0.01298 *
N_Gemme:Defogl   1 0.02754 0.027542  0.7155 0.41563  
N_Gemme:Vigoria  2 0.02065 0.010327  0.2683 0.76954  
Defogl:Vigoria   2 0.07253 0.036267  0.9422 0.41909  
Residuals       11 0.42341 0.038492                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1 

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

KB

```
Analysis of Variance Table

Response: Ca_2009M[, 31]
                Df   Sum Sq  Mean Sq F value  Pr(>F)   
DIPROVE_1        1 0.016634 0.016634  0.9521 0.35016   
DIPROVE_2        1 0.118123 0.118123  6.7612 0.02468 * 
DIPROVE_3        1 0.023999 0.023999  1.3737 0.26594   
N_Gemme          1 0.098163 0.098163  5.6187 0.03713 * 
Defogl           1 0.195629 0.195629 11.1975 0.00652 **
Vigoria          2 0.209529 0.104764  5.9966 0.01733 * 
N_Gemme:Defogl   1 0.008403 0.008403  0.4810 0.50235   
N_Gemme:Vigoria  2 0.006543 0.003272  0.1873 0.83182   
```

```
Defogl:Vigoria   2 0.040190 0.020095  1.1502 0.35188
Residuals       11 0.192178 0.017471
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: 0.617
DIPROVE_3: n.s
```

ApaB

```
Analysis of Variance Table

Response: Ca_2009M[, 32]
                Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1        1   51.85   51.85  0.5039 0.492584
DIPROVE_2        1   64.86   64.86  0.6302 0.444062
DIPROVE_3        1  887.11  887.11  8.6202 0.013544 *
N_Gemme          1 1429.15 1429.15 13.8873 0.003343 **
Defogl           1  540.44  540.44  5.2515 0.042656 *
Vigoria          2  572.77  286.39  2.7829 0.105197
N_Gemme:Defogl   1  200.35  200.35  1.9469 0.190454
N_Gemme:Vigoria  2  172.61   86.30  0.8386 0.458167
Defogl:Vigoria   2  867.59  433.79  4.2153 0.043752 *
Residuals       11 1132.02  102.91
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.663
```

Antoctot1B

```
Analysis of Variance Table

Response: Ca_2009M[, 33]
                Df Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1        1   3025  3024.5  0.8369 0.37991
DIPROVE_2        1  16097 16097.3  4.4540 0.05853 .
DIPROVE_3        1   2746  2745.7  0.7597 0.40204
N_Gemme          1   2426  2425.5  0.6711 0.43005
Defogl           1  10512 10512.3  2.9087 0.11615
Vigoria          2  18736  9368.0  2.5920 0.11958
N_Gemme:Defogl   1   3044  3044.2  0.8423 0.37843
N_Gemme:Vigoria  2   7590  3794.9  1.0500 0.38252
Defogl:Vigoria   2   4233  2116.3  0.5856 0.57325
Residuals       11  39755  3614.1
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

Poliftot1B

```
Analysis of Variance Table
```

```
Response: Ca_2009M[, 34]
                Df Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1        1  26819 26819.0  8.1699 0.01556 *
DIPROVE_2        1   5903  5903.2  1.7983 0.20695  
DIPROVE_3        1    826   826.2  0.2517 0.62578  
N_Gemme          1   2297  2296.8  0.6997 0.42069  
Defogl           1    878   878.3  0.2676 0.61521  
Vigoria          2    268   133.8  0.0408 0.96021  
N_Gemme:Defogl   1   2698  2697.9  0.8219 0.38406  
N_Gemme:Vigoria  2   3161  1580.3  0.4814 0.63034  
Defogl:Vigoria   2   2250  1125.2  0.3428 0.71712  
Residuals       11  36109  3282.7                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.653
DIPROVE_2: n.s
DIPROVE_3: n.s


Antoctot2B

Analysis of Variance Table

Response: Ca_2009M[, 35]
                Df Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1        1  10852   10852  0.7716 0.39850  
DIPROVE_2        1  49058   49058  3.4882 0.08866 .
DIPROVE_3        1  13508   13508  0.9605 0.34813  
N_Gemme          1  21868   21868  1.5549 0.23831  
Defogl           1  17856   17856  1.2696 0.28382  
Vigoria          2  51625   25812  1.8354 0.20520  
N_Gemme:Defogl   1  16984   16984  1.2077 0.29526  
N_Gemme:Vigoria  2  28335   14168  1.0074 0.39652  
Defogl:Vigoria   2  29895   14947  1.0628 0.37844  
Residuals       11 154701   14064                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


Poliftot2B

Analysis of Variance Table

Response: Ca_2009M[, 36]
                Df Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1        1 208553  208553 22.9824 0.0005587 ***
DIPROVE_2        1    117     117  0.0129 0.9116269    
DIPROVE_3        1   3214    3214  0.3542 0.5638134    
N_Gemme          1     20      20  0.0022 0.9630481    
Defogl           1   7044    7044  0.7762 0.3971405    
Vigoria          2  94406   47203  5.2017 0.0257036 *  
N_Gemme:Defogl   1  11748   11748  1.2946 0.2793707    
N_Gemme:Vigoria  2  13660    6830  0.7527 0.4938955    
Defogl:Vigoria   2   2638    1319  0.1454 0.8663319    
Residuals       11  99819    9074                      
```

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.822
DIPROVE_2: n.s
DIPROVE_3: n.s

CACCIAGRANDE 2009M IASMA

PvinacciaA

Analysis of Variance Table

Response: Ca_2009M[, 11]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 245907 | 245907 | 7.2876 | 0.0206735 | * |
| IASMA_2 | 1 | 517169 | 517169 | 15.3265 | 0.0024139 | ** |
| IASMA_3 | 1 | 336393 | 336393 | 9.9691 | 0.0091212 | ** |
| N_Gemme | 1 | 701330 | 701330 | 20.7842 | 0.0008180 | *** |
| Defogl | 1 | 865948 | 865948 | 25.6627 | 0.0003629 | *** |
| Vigoria | 2 | 90287 | 45144 | 1.3378 | 0.3019516 | |
| N_Gemme:Defogl | 1 | 19 | 19 | 0.0006 | 0.9815498 | |
| N_Gemme:Vigoria | 2 | 234961 | 117481 | 3.4816 | 0.0673836 | . |
| Defogl:Vigoria | 2 | 179700 | 89850 | 2.6627 | 0.1139984 | |
| Residuals | 11 | 371178 | 33743 | | | |

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.631
IASMA_2: 0.763
IASMA_3: 0.69

DensMostoA

Analysis of Variance Table

Response: Ca_2009M[, 12]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.00040211 | 0.00040211 | 57.5268 | 1.080e-05 | *** |
| IASMA_2 | 1 | 0.00027336 | 0.00027336 | 39.1075 | 6.229e-05 | *** |
| IASMA_3 | 1 | 0.00006835 | 0.00006835 | 9.7787 | 0.009628 | ** |
| N_Gemme | 1 | 0.00001974 | 0.00001974 | 2.8241 | 0.121000 | |
| Defogl | 1 | 0.00000934 | 0.00000934 | 1.3356 | 0.272294 | |
| Vigoria | 2 | 0.00009339 | 0.00004670 | 6.6805 | 0.012614 | * |
| N_Gemme:Defogl | 1 | 0.00000541 | 0.00000541 | 0.7742 | 0.397729 | |
| N_Gemme:Vigoria | 2 | 0.00001767 | 0.00000884 | 1.2641 | 0.320513 | |
| Defogl:Vigoria | 2 | 0.00000079 | 0.00000040 | 0.0568 | 0.945013 | |
| Residuals | 11 | 0.00007689 | 0.00000699 | | | |

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.916
IASMA_2: -0.883
IASMA_3: 0.686

BrixA

Analysis of Variance Table

```
Response: Ca_2009M[, 13]
                Df  Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1          1 19.4095 19.4095 57.8766 1.050e-05 ***
IASMA_2          1 13.4896 13.4896 40.2241 5.504e-05 ***
IASMA_3          1  2.9967  2.9967  8.9357   0.01231 *  
N_Gemme          1  1.1068  1.1068  3.3004   0.09658 .  
Defogl           1  0.4355  0.4355  1.2987   0.27866    
Vigoria          2  4.2767  2.1383  6.3763   0.01450 *  
N_Gemme:Defogl   1  0.3056  0.3056  0.9113   0.36029    
N_Gemme:Vigoria  2  0.9067  0.4534  1.3519   0.29857    
Defogl:Vigoria   2  0.0386  0.0193  0.0576   0.94433    
Residuals       11  3.6890  0.3354                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.917
IASMA_2: -0.886
IASMA_3: 0.669
```

PhA

Analysis of Variance Table

```
Response: Ca_2009M[, 14]
                Df   Sum Sq  Mean Sq F value    Pr(>F)    
IASMA_1          1 0.045524 0.045524 19.2655 0.0010823 ** 
IASMA_2          1 0.058596 0.058596 24.7975 0.0004156 ***
IASMA_3          1 0.011093 0.011093  4.6945 0.0530843 .  
N_Gemme          1 0.029572 0.029572 12.5145 0.0046524 ** 
Defogl           1 0.000065 0.000065  0.0273 0.8717044    
Vigoria          2 0.024966 0.012483  5.2828 0.0246585 *  
N_Gemme:Defogl   1 0.002707 0.002707  1.1456 0.3074009    
N_Gemme:Vigoria  2 0.002410 0.001205  0.5100 0.6140259    
Defogl:Vigoria   2 0.006457 0.003229  1.3663 0.2951304    
Residuals       11 0.025993 0.002363                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.798
IASMA_2: 0.832
IASMA_3: n.s
```

AcTitolA

Analysis of Variance Table

```
Response: Ca_2009M[, 15]
                Df  Sum Sq Mean Sq F value   Pr(>F)   
IASMA_1          1 0.00119 0.00119  0.0265 0.873587   
IASMA_2          1 0.69817 0.69817 15.5385 0.002305 **
IASMA_3          1 0.55932 0.55932 12.4483 0.004730 **
N_Gemme          1 0.01652 0.01652  0.3676 0.556626   
Defogl           1 0.02346 0.02346  0.5222 0.484974   
Vigoria          2 0.10229 0.05114  1.1383 0.355384   
N_Gemme:Defogl   1 0.09081 0.09081  2.0211 0.182857   
N_Gemme:Vigoria  2 0.00137 0.00069  0.0153 0.984883   
Defogl:Vigoria   2 0.09918 0.04959  1.1037 0.365731   
Residuals       11 0.49425 0.04493                    
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: 0.765
IASMA_3: -0.729
```

AcTartA

```
Analysis of Variance Table

Response: Ca_2009M[, 16]
                Df  Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1          1 0.12568 0.125681  3.6921 0.08095 .
IASMA_2          1 0.08249 0.082486  2.4232 0.14784
IASMA_3          1 0.11750 0.117503  3.4519 0.09013 .
N_Gemme          1 0.03864 0.038640  1.1351 0.30951
Defogl           1 0.00335 0.003349  0.0984 0.75963
Vigoria          2 0.03620 0.018101  0.5318 0.60194
N_Gemme:Defogl   1 0.10117 0.101170  2.9720 0.11267
N_Gemme:Vigoria  2 0.03561 0.017804  0.5230 0.60676
Defogl:Vigoria   2 0.03761 0.018807  0.5525 0.59069
Residuals       11 0.37444 0.034040
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

AcMalicoA

```
Analysis of Variance Table

Response: Ca_2009M[, 17]
                Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1          1 1.40569 1.40569 20.2857 0.0008953 ***
IASMA_2          1 0.10187 0.10187  1.4701 0.2507296
IASMA_3          1 0.02134 0.02134  0.3079 0.5900595
N_Gemme          1 0.00711 0.00711  0.1026 0.7547399
Defogl           1 0.01309 0.01309  0.1889 0.6722507
Vigoria          2 0.08365 0.04183  0.6036 0.5639945
N_Gemme:Defogl   1 0.08720 0.08720  1.2585 0.2858342
N_Gemme:Vigoria  2 0.00879 0.00440  0.0634 0.9388732
Defogl:Vigoria   2 0.16293 0.08147  1.1757 0.3445679
Residuals       11 0.76224 0.06929
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.805
IASMA_2: n.s
IASMA_3: n.s
```

KA

```
Analysis of Variance Table

Response: Ca_2009M[, 18]
                Df   Sum Sq  Mean Sq F value    Pr(>F)
```

```
IASMA_1           1 0.041636 0.041636  6.3028 0.0289591 *
IASMA_2           1 0.191933 0.191933 29.0547 0.0002199 ***
IASMA_3           1 0.048299 0.048299  7.3115 0.0205105 *
N_Gemme           1 0.137420 0.137420 20.8025 0.0008153 ***
Defogl            1 0.000669 0.000669  0.1012 0.7562987
Vigoria           2 0.062813 0.031406  4.7543 0.0325103 *
N_Gemme:Defogl    1 0.005093 0.005093  0.7710 0.3986921
N_Gemme:Vigoria   2 0.010589 0.005294  0.8015 0.4732205
Defogl:Vigoria    2 0.022829 0.011414  1.7279 0.2225496
Residuals        11 0.072665 0.006606
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.604
IASMA_2: 0.852
IASMA_3: -0.632
```

ApaA

```
Analysis of Variance Table

Response: Ca_2009M[, 19]
                Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1          1   38.13   38.13  0.1787 0.68064
IASMA_2          1  199.37  199.37  0.9343 0.35453
IASMA_3          1  228.99  228.99  1.0731 0.32249
N_Gemme          1  546.73  546.73  2.5620 0.13776
Defogl           1 1789.12 1789.12  8.3839 0.01456 *
Vigoria          2   67.97   33.98  0.1593 0.85471
N_Gemme:Defogl   1   59.99   59.99  0.2811 0.60652
N_Gemme:Vigoria  2   66.32   33.16  0.1554 0.85792
Defogl:Vigoria   2  464.96  232.48  1.0894 0.37011
Residuals       11 2347.39  213.40
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

Antoctot1A

```
Analysis of Variance Table

Response: Ca_2009M[, 20]
                Df Sum Sq Mean Sq F value    Pr(>F)
IASMA_1          1  17403   17403 21.2175 0.0007572 ***
IASMA_2          1  53313   53313 64.9965 6.069e-06 ***
IASMA_3          1   6827    6827  8.3226 0.0148407 *
N_Gemme          1     74      74  0.0900 0.7697989
Defogl           1      0       0  0.0000 0.9989919
Vigoria          2  10784    5392  6.5735 0.0132406 *
N_Gemme:Defogl   1   1116    1116  1.3600 0.2682034
N_Gemme:Vigoria  2   8197    4098  4.9966 0.0285907 *
Defogl:Vigoria   2   3106    1553  1.8932 0.1965240
Residuals       11   9023     820
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
IASMA_1: -0.812
IASMA_2: 0.925
IASMA_3: -0.656
```

Poliftot1A

Analysis of Variance Table

```
Response: Ca_2009M[, 21]
                Df  Sum Sq Mean Sq F value  Pr(>F)  
IASMA_1          1   223.1   223.1  0.2185 0.64930  
IASMA_2          1  2419.4  2419.4  2.3699 0.15195  
IASMA_3          1   513.0   513.0  0.5025 0.49317  
N_Gemme          1  1199.4  1199.4  1.1748 0.30160  
Defogl           1  6540.9  6540.9  6.4069 0.02791 *
Vigoria          2   715.2   357.6  0.3503 0.71206  
N_Gemme:Defogl   1   191.9   191.9  0.1880 0.67299  
N_Gemme:Vigoria  2  5045.4  2522.7  2.4710 0.12992  
Defogl:Vigoria   2  4769.8  2384.9  2.3361 0.14271  
Residuals       11 11230.0  1020.9                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

Antoctot2A

Analysis of Variance Table

```
Response: Ca_2009M[, 22]
                Df Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1          1  71479   71479 13.4799   0.00368 ** 
IASMA_2          1 266871  266871 50.3281 2.008e-05 ***
IASMA_3          1  45410   45410  8.5636   0.01378 *  
N_Gemme          1    961     961  0.1811   0.67860    
Defogl           1   1969    1969  0.3714   0.55463    
Vigoria          2  61467   30733  5.7959   0.01910 *  
N_Gemme:Defogl   1   4514    4514  0.8513   0.37598    
N_Gemme:Vigoria  2  38084   19042  3.5910   0.06304 .  
Defogl:Vigoria   2   7567    3784  0.7135   0.51124    
Residuals       11  58329    5303                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.742
IASMA_2: 0.906
IASMA_3: -0.662
```

Poliftot2A

Analysis of Variance Table

```
Response: Ca_2009M[, 23]
                Df Sum Sq Mean Sq F value Pr(>F)
IASMA_1          1  20009 20009.3  1.7854 0.2085
IASMA_2          1   5513  5513.3  0.4919 0.4976
```

```
IASMA_3          1  10876 10875.5  0.9704 0.3458
N_Gemme          1   6045  6044.6  0.5393 0.4781
Defogl           1   7914  7913.6  0.7061 0.4186
Vigoria          2  11950  5975.0  0.5331 0.6012
N_Gemme:Defogl   1   1045  1045.2  0.0933 0.7658
N_Gemme:Vigoria  2  21726 10863.2  0.9693 0.4095
Defogl:Vigoria   2   1358   678.8  0.0606 0.9415
Residuals       11 123279 11207.2

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


PvinacciaB

Analysis of Variance Table

Response: Ca_2009M[, 24]
                Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1          1      77      77  0.0021  0.964172
IASMA_2          1  385080  385080 10.5212  0.007823 **
IASMA_3          1   43382   43382  1.1853  0.299562
N_Gemme          1 1353474 1353474 36.9797 7.948e-05 ***
Defogl           1  650560  650560 17.7746  0.001446 **
Vigoria          2  288503  144252  3.9413  0.051207 .
N_Gemme:Defogl   1   48882   48882  1.3355  0.272306
N_Gemme:Vigoria  2   43274   21637  0.5912  0.570353
Defogl:Vigoria   2  265593  132796  3.6283  0.061639 .
Residuals       11  402605   36600
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: 0.699
IASMA_3: n.s


DensMostoB

Analysis of Variance Table

Response: Ca_2009M[, 25]
                Df     Sum Sq    Mean Sq F value    Pr(>F)
IASMA_1          1 0.00016609 0.00016609 14.1422  0.003151 **
IASMA_2          1 0.00057782 0.00057782 49.2002 2.228e-05 ***
IASMA_3          1 0.00002895 0.00002895  2.4653  0.144683
N_Gemme          1 0.00005112 0.00005112  4.3525  0.061035 .
Defogl           1 0.00001120 0.00001120  0.9533  0.349873
Vigoria          2 0.00008899 0.00004449  3.7885  0.056015 .
N_Gemme:Defogl   1 0.00005853 0.00005853  4.9841  0.047318 *
N_Gemme:Vigoria  2 0.00001158 0.00000579  0.4928  0.623755
Defogl:Vigoria   2 0.00002945 0.00001472  1.2536  0.323252
Residuals       11 0.00012919 0.00001174
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.75
IASMA_2: -0.904
IASMA_3: n.s
```

BrixB

Analysis of Variance Table

```
Response: Ca_2009M[, 26]
                Df  Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1          1  8.2188  8.2188 14.0006  0.003256 ** 
IASMA_2          1 27.5401 27.5401 46.9142 2.766e-05 ***
IASMA_3          1  1.5538  1.5538  2.6469  0.132031    
N_Gemme          1  2.3999  2.3999  4.0882  0.068191 .  
Defogl           1  0.5254  0.5254  0.8950  0.364444    
Vigoria          2  4.1259  2.0629  3.5142  0.066053 .  
N_Gemme:Defogl   1  3.0178  3.0178  5.1407  0.044516 *  
N_Gemme:Vigoria  2  0.6938  0.3469  0.5910  0.570462    
Defogl:Vigoria   2  1.3454  0.6727  1.1460  0.353126    
Residuals       11  6.4573  0.5870                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: 0.748
IASMA_2: -0.9
IASMA_3: n.s

PhB

Analysis of Variance Table

```
Response: Ca_2009M[, 27]
                Df   Sum Sq  Mean Sq F value    Pr(>F)    
IASMA_1          1 0.029689 0.029689  5.4913 0.0389408 *  
IASMA_2          1 0.141052 0.141052 26.0889 0.0003399 ***
IASMA_3          1 0.008761 0.008761  1.6205 0.2292715    
N_Gemme          1 0.026441 0.026441  4.8906 0.0490928 *  
Defogl           1 0.003311 0.003311  0.6124 0.4504183    
Vigoria          2 0.039813 0.019907  3.6819 0.0596845 .  
N_Gemme:Defogl   1 0.003725 0.003725  0.6890 0.4241478    
N_Gemme:Vigoria  2 0.000681 0.000340  0.0630 0.9393170    
Defogl:Vigoria   2 0.004121 0.002060  0.3811 0.6918074    
Residuals       11 0.059472 0.005407                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: 0.577
IASMA_2: -0.839
IASMA_3: n.s

AcTitolB

Analysis of Variance Table

```
Response: Ca_2009M[, 28]
                Df  Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1          1 0.05364 0.05364  2.0741 0.1776640    
IASMA_2          1 0.64413 0.64413 24.9062 0.0004085 ***
IASMA_3          1 0.07503 0.07503  2.9010 0.1165735    
N_Gemme          1 0.15573 0.15573  6.0215 0.0320246 *  
Defogl           1 0.00290 0.00290  0.1122 0.7439646    
Vigoria          2 0.03119 0.01560  0.6030 0.5642769    
```

```
N_Gemme:Defogl   1 0.07622 0.07622  2.9473 0.1140107
N_Gemme:Vigoria  2 0.01296 0.00648  0.2506 0.7826466
Defogl:Vigoria   2 0.03705 0.01852  0.7162 0.5100240
Residuals       11 0.28448 0.02586
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: -0.833
IASMA_3: n.s
```

AcTartB

Analysis of Variance Table

```
Response: Ca_2009M[, 29]
                Df   Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1          1 0.190733 0.190733  8.0801 0.01601 *
IASMA_2          1 0.000030 0.000030  0.0013 0.97229
IASMA_3          1 0.000896 0.000896  0.0380 0.84905
N_Gemme          1 0.025023 0.025023  1.0601 0.32531
Defogl           1 0.079203 0.079203  3.3553 0.09418 .
Vigoria          2 0.045605 0.022803  0.9660 0.41068
N_Gemme:Defogl   1 0.029465 0.029465  1.2482 0.28770
N_Gemme:Vigoria  2 0.065307 0.032654  1.3833 0.29114
Defogl:Vigoria   2 0.040764 0.020382  0.8634 0.44842
Residuals       11 0.259657 0.023605
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.651
IASMA_2: n.s
IASMA_3: n.s
```

AcMalicoB

Analysis of Variance Table

```
Response: Ca_2009M[, 30]
                Df  Sum Sq Mean Sq F value   Pr(>F)
IASMA_1          1 0.50015 0.50015 13.5472 0.003622 **
IASMA_2          1 0.00888 0.00888  0.2404 0.633543
IASMA_3          1 0.27618 0.27618  7.4808 0.019401 *
N_Gemme          1 0.00206 0.00206  0.0558 0.817591
Defogl           1 0.03874 0.03874  1.0492 0.327680
Vigoria          2 0.19786 0.09893  2.6796 0.112712
N_Gemme:Defogl   1 0.06391 0.06391  1.7311 0.215030
N_Gemme:Vigoria  2 0.00058 0.00029  0.0078 0.992213
Defogl:Vigoria   2 0.00485 0.00243  0.0657 0.936788
Residuals       11 0.40611 0.03692
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.743
IASMA_2: n.s
IASMA_3: 0.636
```

KB

```
Analysis of Variance Table

Response: Ca_2009M[, 31]
                Df  Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1          1 0.01946 0.01946  2.2998   0.15759    
IASMA_2          1 0.57103 0.57103 67.4846 5.072e-06 ***
IASMA_3          1 0.00605 0.00605  0.7144   0.41598    
N_Gemme          1 0.07796 0.07796  9.2139   0.01134 *  
Defogl           1 0.02846 0.02846  3.3639   0.09381 .  
Vigoria          2 0.05348 0.02674  3.1604   0.08233 .  
N_Gemme:Defogl   1 0.03298 0.03298  3.8972   0.07401 .  
N_Gemme:Vigoria  2 0.00739 0.00369  0.4365   0.65703    
Defogl:Vigoria   2 0.01950 0.00975  1.1524   0.35126    
Residuals       11 0.09308 0.00846                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: -0.927
IASMA_3: n.s


ApaB

Analysis of Variance Table

Response: Ca_2009M[, 32]
                Df  Sum Sq Mean Sq F value   Pr(>F)   
IASMA_1          1   72.83   72.83  0.5534 0.472531   
IASMA_2          1  116.82  116.82  0.8877 0.366345   
IASMA_3          1   44.58   44.58  0.3387 0.572299   
N_Gemme          1 1287.68 1287.68  9.7841 0.009613 **
Defogl           1 1034.93 1034.93  7.8637 0.017145 * 
Vigoria          2 1012.91  506.45  3.8482 0.054075 . 
N_Gemme:Defogl   1  161.94  161.94  1.2305 0.290974   
N_Gemme:Vigoria  2  247.84  123.92  0.9416 0.419315   
Defogl:Vigoria   2  491.50  245.75  1.8673 0.200356   
Residuals       11 1447.70  131.61                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


Antoctot1B

Analysis of Variance Table

Response: Ca_2009M[, 33]
                Df Sum Sq Mean Sq F value   Pr(>F)   
IASMA_1          1    427     427  0.1168 0.738977   
IASMA_2          1  46849   46849 12.8235 0.004311 **
IASMA_3          1   2755    2755  0.7540 0.403769   
N_Gemme          1   2740    2740  0.7500 0.404957   
Defogl           1    850     850  0.2326 0.639031   
Vigoria          2   2497    1248  0.3417 0.717860   
N_Gemme:Defogl   1   2454    2454  0.6716 0.429902   
N_Gemme:Vigoria  2   4927    2464  0.6744 0.529341   
```

```
Defogl:Vigoria   2   4479    2240  0.6130 0.559233
Residuals       11  40187    3653
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: 0.734
IASMA_3: n.s


Poliftot1B

Analysis of Variance Table

Response: Ca_2009M[, 34]
                Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1          1  4594.1  4594.1  1.6591 0.22416
IASMA_2          1  1852.7  1852.7  0.6691 0.43073
IASMA_3          1     6.6     6.6  0.0024 0.96182
N_Gemme          1  6472.8  6472.8  2.3376 0.15452
Defogl           1 21584.0 21584.0  7.7947 0.01753 *
Vigoria          2  2760.1  1380.0  0.4984 0.62059
N_Gemme:Defogl   1  8526.5  8526.5  3.0792 0.10707
N_Gemme:Vigoria  2  2735.7  1367.9  0.4940 0.62310
Defogl:Vigoria   2  2217.2  1108.6  0.4004 0.67946
Residuals       11 30459.4  2769.0
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


Antoctot2B

Analysis of Variance Table

Response: Ca_2009M[, 35]
                Df Sum Sq Mean Sq F value   Pr(>F)
IASMA_1          1      8       8  0.0006 0.981131
IASMA_2          1 142450  142450 10.2499 0.008431 **
IASMA_3          1    183     183  0.0132 0.910768
N_Gemme          1  18877   18877  1.3583 0.268479
Defogl           1    100     100  0.0072 0.933824
Vigoria          2  21765   10882  0.7830 0.480910
N_Gemme:Defogl   1  15496   15496  1.1150 0.313641
N_Gemme:Vigoria  2  19323    9662  0.6952 0.519630
Defogl:Vigoria   2  23605   11802  0.8492 0.453969
Residuals       11 152874   13898
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: 0.695
IASMA_3: n.s


Poliftot2B

Analysis of Variance Table
```

```
Response: Ca_2009M[, 36]
                 Df Sum Sq Mean Sq F value   Pr(>F)   
IASMA_1           1 149195  149195 18.4873 0.001257 **
IASMA_2           1  59772   59772  7.4066 0.019878 * 
IASMA_3           1  19032   19032  2.3583 0.152863   
N_Gemme           1   7994    7994  0.9906 0.340986   
Defogl            1  48715   48715  6.0365 0.031852 * 
Vigoria           2  22092   11046  1.3688 0.294555   
N_Gemme:Defogl    1  21027   21027  2.6055 0.134789   
N_Gemme:Vigoria   2  19322    9661  1.1971 0.338535   
Defogl:Vigoria    2   5300    2650  0.3284 0.726901   
Residuals        11  88771    8070                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: -0.792
IASMA_2: -0.634
IASMA_3: n.s

CORTIGLIANO 2008 IBIMET

PvinacciaA

Analysis of Variance Table

```
Response: Co_2008M[, 11]
                     Df  Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_2              1    6955    6955  0.0750  0.787374    
IBIMET_3              1     191     191  0.0021  0.964334    
N_Gemme               1  317117  317117  3.4176  0.080999 .  
Defogl                1  536825  536825  5.7855  0.027130 *  
Dirad                 1 2451779 2451779 26.4233 6.859e-05 ***
Vigoria               1  183613  183613  1.9788  0.176545    
N_Gemme:Defogl        1   40514   40514  0.4366  0.517126    
N_Gemme:Dirad         1  450604  450604  4.8562  0.040808 *  
Defogl:Dirad          1   31981   31981  0.3447  0.564442    
N_Gemme:Vigoria       1  142374  142374  1.5344  0.231365    
Defogl:Vigoria        1  129093  129093  1.3913  0.253548    
Dirad:Vigoria         1 1007922 1007922 10.8626  0.004018 ** 
N_Gemme:Defogl:Dirad  1   31983   31983  0.3447  0.564426    
Residuals            18 1670196   92789                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: n.s
IBIMET_3: n.s

DensMostoA

Analysis of Variance Table

```
Response: Co_2008M[, 12]
                     Df     Sum Sq    Mean Sq F value   Pr(>F)   
IBIMET_2              1 1.3101e-04 1.3101e-04 11.2487 0.003534 **
IBIMET_3              1 3.4107e-05 3.4107e-05  2.9286 0.104201   
N_Gemme               1 1.6830e-06 1.6830e-06  0.1445 0.708266   
Defogl                1 4.1993e-05 4.1993e-05  3.6057 0.073732 . 
Dirad                 1 4.3190e-05 4.3190e-05  3.7085 0.070082 . 
```

```
Vigoria              1 1.0829e-05 1.0829e-05  0.9299 0.347674
N_Gemme:Defogl       1 5.2890e-06 5.2890e-06  0.4541 0.508947
N_Gemme:Dirad        1 5.2622e-05 5.2622e-05  4.5184 0.047631 *
Defogl:Dirad         1 3.3300e-07 3.3300e-07  0.0286 0.867573
N_Gemme:Vigoria      1 8.6800e-07 8.6800e-07  0.0745 0.787976
Defogl:Vigoria       1 2.9220e-06 2.9220e-06  0.2509 0.622529
Dirad:Vigoria        1 3.9778e-05 3.9778e-05  3.4155 0.081084 .
N_Gemme:Defogl:Dirad  1 2.3650e-06 2.3650e-06  0.2031 0.657643
Residuals           18 2.0963e-04 1.1646e-05
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.62
IBIMET_3: n.s
```

BrixA

```
Analysis of Variance Table

Response: Co_2008M[, 13]
                    Df Sum Sq Mean Sq F value   Pr(>F)
IBIMET_2             1 7.5761  7.5761 13.7341 0.001617 **
IBIMET_3             1 1.1010  1.1010  1.9959 0.174779
N_Gemme              1 0.0406  0.0406  0.0736 0.789260
Defogl               1 1.7305  1.7305  3.1371 0.093458 .
Dirad                1 2.0200  2.0200  3.6619 0.071710 .
Vigoria              1 0.3040  0.3040  0.5510 0.467481
N_Gemme:Defogl       1 0.3123  0.3123  0.5661 0.461557
N_Gemme:Dirad        1 2.6727  2.6727  4.8452 0.041013 *
Defogl:Dirad         1 0.0269  0.0269  0.0488 0.827570
N_Gemme:Vigoria      1 0.0449  0.0449  0.0813 0.778765
Defogl:Vigoria       1 0.2205  0.2205  0.3997 0.535176
Dirad:Vigoria        1 2.0799  2.0799  3.7704 0.067985 .
N_Gemme:Defogl:Dirad  1 0.1311  0.1311  0.2376 0.631836
Residuals           18 9.9293  0.5516
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.658
IBIMET_3: n.s
```

PhA

```
Analysis of Variance Table

Response: Co_2008M[, 14]
                    Df   Sum Sq  Mean Sq F value    Pr(>F)
IBIMET_2             1 0.052608 0.052608 16.0008 0.0008396 ***
IBIMET_3             1 0.015072 0.015072  4.5842 0.0462048 *
N_Gemme              1 0.000341 0.000341  0.1038 0.7509962
Defogl               1 0.002726 0.002726  0.8292 0.3745350
Dirad                1 0.009378 0.009378  2.8524 0.1084825
Vigoria              1 0.013442 0.013442  4.0884 0.0582992 .
N_Gemme:Defogl       1 0.012370 0.012370  3.7625 0.0682497 .
N_Gemme:Dirad        1 0.000058 0.000058  0.0175 0.8962238
Defogl:Dirad         1 0.000471 0.000471  0.1434 0.7093865
N_Gemme:Vigoria      1 0.000362 0.000362  0.1100 0.7439452
Defogl:Vigoria       1 0.007483 0.007483  2.2761 0.1487386
Dirad:Vigoria        1 0.002324 0.002324  0.7068 0.4115426
```

```
N_Gemme:Defogl:Dirad  1 0.003421 0.003421  1.0404 0.3212427
Residuals            18 0.059181 0.003288
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.686
IBIMET_3: -0.451


AcTitolA

Analysis of Variance Table

Response: Co_2008M[, 15]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2              1 0.15174 0.15174  1.3004 0.26908
IBIMET_3              1 0.37651 0.37651  3.2268 0.08924 .
N_Gemme               1 0.11251 0.11251  0.9642 0.33914
Defogl                1 0.03418 0.03418  0.2930 0.59496
Dirad                 1 0.03188 0.03188  0.2732 0.60754
Vigoria               1 0.19049 0.19049  1.6326 0.21758
N_Gemme:Defogl        1 0.01683 0.01683  0.1443 0.70851
N_Gemme:Dirad         1 0.25302 0.25302  2.1684 0.15814
Defogl:Dirad          1 0.00030 0.00030  0.0025 0.96040
N_Gemme:Vigoria       1 0.04744 0.04744  0.4065 0.53175
Defogl:Vigoria        1 0.00317 0.00317  0.0272 0.87093
Dirad:Vigoria         1 0.01876 0.01876  0.1607 0.69320
N_Gemme:Defogl:Dirad  1 0.03471 0.03471  0.2974 0.59219
Residuals            18 2.10027 0.11668
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


AcTartA

Analysis of Variance Table

Response: Co_2008M[, 16]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2              1 1.34712 1.34712  8.8086 0.00824 **
IBIMET_3              1 0.88040 0.88040  5.7568 0.02746 *
N_Gemme               1 0.00656 0.00656  0.0429 0.83826
Defogl                1 0.02875 0.02875  0.1880 0.66974
Dirad                 1 0.03427 0.03427  0.2241 0.64165
Vigoria               1 0.23242 0.23242  1.5197 0.23352
N_Gemme:Defogl        1 0.01455 0.01455  0.0951 0.76129
N_Gemme:Dirad         1 0.11775 0.11775  0.7699 0.39180
Defogl:Dirad          1 0.00874 0.00874  0.0572 0.81373
N_Gemme:Vigoria       1 0.07549 0.07549  0.4936 0.49130
Defogl:Vigoria        1 0.39035 0.39035  2.5525 0.12753
Dirad:Vigoria         1 0.01015 0.01015  0.0664 0.79965
N_Gemme:Defogl:Dirad  1 0.16175 0.16175  1.0577 0.31737
Residuals            18 2.75279 0.15293
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.573
IBIMET_3: -0.492
```

AcMalicoA

```
Analysis of Variance Table

Response: Co_2008M[, 17]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_2             1 0.01530 0.01530  0.5383    0.4726    
IBIMET_3             1 1.18852 1.18852 41.8153 4.398e-06 ***
N_Gemme              1 0.02117 0.02117  0.7449    0.3995    
Defogl               1 0.03553 0.03553  1.2500    0.2782    
Dirad                1 0.00102 0.00102  0.0359    0.8518    
Vigoria              1 0.74473 0.74473 26.2015 7.185e-05 ***
N_Gemme:Defogl       1 0.00275 0.00275  0.0966    0.7595    
N_Gemme:Dirad        1 0.05686 0.05686  2.0006    0.1743    
Defogl:Dirad         1 0.00216 0.00216  0.0759    0.7861    
N_Gemme:Vigoria      1 0.00583 0.00583  0.2052    0.6560    
Defogl:Vigoria       1 0.02143 0.02143  0.7539    0.3967    
Dirad:Vigoria        1 0.00859 0.00859  0.3022    0.5893    
N_Gemme:Defogl:Dirad  1 0.00008 0.00008  0.0027    0.9595    
Residuals           18 0.51162 0.02842                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: n.s
IBIMET_3: 0.836

KA

```
Analysis of Variance Table

Response: Co_2008M[, 18]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_2             1 0.13599 0.13599  6.9936 0.0164779 *  
IBIMET_3             1 0.50024 0.50024 25.7254 7.946e-05 ***
N_Gemme              1 0.00060 0.00060  0.0307 0.8628093    
Defogl               1 0.00740 0.00740  0.3807 0.5449388    
Dirad                1 0.00840 0.00840  0.4319 0.5193729    
Vigoria              1 0.45103 0.45103 23.1947 0.0001385 ***
N_Gemme:Defogl       1 0.00021 0.00021  0.0107 0.9187103    
N_Gemme:Dirad        1 0.00109 0.00109  0.0562 0.8152518    
Defogl:Dirad         1 0.01528 0.01528  0.7860 0.3869942    
N_Gemme:Vigoria      1 0.00620 0.00620  0.3188 0.5792986    
Defogl:Vigoria       1 0.02840 0.02840  1.4606 0.2424680    
Dirad:Vigoria        1 0.00275 0.00275  0.1413 0.7113664    
N_Gemme:Defogl:Dirad  1 0.00844 0.00844  0.4339 0.5184162    
Residuals           18 0.35002 0.01945                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: 0.529
IBIMET_3: 0.767

ApaA

```
Analysis of Variance Table

Response: Co_2008M[, 19]
```

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 7787.2 | 7787.2 | 11.1886 | 0.003605 | ** |
| IBIMET_3 | 1 | 19985.6 | 19985.6 | 28.7151 | 4.301e-05 | *** |
| N_Gemme | 1 | 163.4 | 163.4 | 0.2347 | 0.633893 | |
| Defogl | 1 | 5215.3 | 5215.3 | 7.4932 | 0.013532 | * |
| Dirad | 1 | 288.6 | 288.6 | 0.4147 | 0.527730 | |
| Vigoria | 1 | 7382.9 | 7382.9 | 10.6077 | 0.004378 | ** |
| N_Gemme:Defogl | 1 | 5.8 | 5.8 | 0.0083 | 0.928469 | |
| N_Gemme:Dirad | 1 | 187.8 | 187.8 | 0.2698 | 0.609785 | |
| Defogl:Dirad | 1 | 331.3 | 331.3 | 0.4760 | 0.499023 | |
| N_Gemme:Vigoria | 1 | 79.5 | 79.5 | 0.1143 | 0.739217 | |
| Defogl:Vigoria | 1 | 3445.2 | 3445.2 | 4.9500 | 0.039117 | * |
| Dirad:Vigoria | 1 | 141.2 | 141.2 | 0.2029 | 0.657796 | |
| N_Gemme:Defogl:Dirad | 1 | 246.7 | 246.7 | 0.3544 | 0.559038 | |
| Residuals | 18 | 12528.0 | 696.0 | | | |

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.619
IBIMET_3: -0.784

Antoctot1A

Analysis of Variance Table

Response: Co_2008M[, 20]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 48 | 48.0 | 0.0187 | 0.89265 | |
| IBIMET_3 | 1 | 14 | 14.4 | 0.0056 | 0.94109 | |
| N_Gemme | 1 | 2 | 1.7 | 0.0007 | 0.97991 | |
| Defogl | 1 | 3779 | 3778.6 | 1.4750 | 0.24026 | |
| Dirad | 1 | 15406 | 15405.5 | 6.0135 | 0.02463 | * |
| Vigoria | 1 | 4042 | 4041.9 | 1.5777 | 0.22514 | |
| N_Gemme:Defogl | 1 | 1324 | 1323.7 | 0.5167 | 0.48148 | |
| N_Gemme:Dirad | 1 | 238 | 238.4 | 0.0931 | 0.76383 | |
| Defogl:Dirad | 1 | 494 | 494.4 | 0.1930 | 0.66566 | |
| N_Gemme:Vigoria | 1 | 2586 | 2585.6 | 1.0093 | 0.32839 | |
| Defogl:Vigoria | 1 | 5006 | 5006.4 | 1.9542 | 0.17912 | |
| Dirad:Vigoria | 1 | 10714 | 10714.1 | 4.1822 | 0.05575 | . |
| N_Gemme:Defogl:Dirad | 1 | 682 | 682.4 | 0.2664 | 0.61204 | |
| Residuals | 18 | 46113 | 2561.8 | | | |

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s

Poliftot1A

Analysis of Variance Table

Response: Co_2008M[, 21]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 25 | 25 | 0.0027 | 0.95928 | |
| IBIMET_3 | 1 | 7252 | 7252 | 0.7884 | 0.38630 | |
| N_Gemme | 1 | 1271 | 1271 | 0.1381 | 0.71447 | |
| Defogl | 1 | 64480 | 64480 | 7.0095 | 0.01637 | * |
| Dirad | 1 | 584 | 584 | 0.0635 | 0.80392 | |
| Vigoria | 1 | 55 | 55 | 0.0060 | 0.93922 | |

```
N_Gemme:Defogl        1  13747   13747  1.4944 0.23729
N_Gemme:Dirad         1   9390    9390  1.0207 0.32574
Defogl:Dirad          1  21246   21246  2.3097 0.14594
N_Gemme:Vigoria       1  27569   27569  2.9969 0.10053
Defogl:Vigoria        1   8428    8428  0.9162 0.35115
Dirad:Vigoria         1   1438    1438  0.1563 0.69726
N_Gemme:Defogl:Dirad  1      6       6  0.0006 0.98068
Residuals            18 165580    9199
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


Antoctot2A

Analysis of Variance Table

Response: Co_2008M[, 22]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2              1   7972    7972  1.1829 0.29112
IBIMET_3              1  18139   18139  2.6914 0.11825
N_Gemme               1  17284   17284  2.5645 0.12669
Defogl                1   9323    9323  1.3832 0.25487
Dirad                 1   5665    5665  0.8406 0.37135
Vigoria               1   1089    1089  0.1616 0.69245
N_Gemme:Defogl        1   9312    9312  1.3816 0.25514
N_Gemme:Dirad         1     21      21  0.0030 0.95662
Defogl:Dirad          1    756     756  0.1121 0.74161
N_Gemme:Vigoria       1   2278    2278  0.3379 0.56823
Defogl:Vigoria        1  37020   37020  5.4928 0.03077 *
Dirad:Vigoria         1  14052   14052  2.0849 0.16594
N_Gemme:Defogl:Dirad  1   8175    8175  1.2129 0.28526
Residuals            18 121315    6740
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


Poliftot2A

Analysis of Variance Table

Response: Co_2008M[, 23]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2              1  49260   49260  1.1092 0.30620
IBIMET_3              1   7095    7095  0.1598 0.69408
N_Gemme               1  58177   58177  1.3099 0.26740
Defogl                1   1148    1148  0.0258 0.87407
Dirad                 1 170938  170938  3.8489 0.06543 .
Vigoria               1  85922   85922  1.9347 0.18121
N_Gemme:Defogl        1  44923   44923  1.0115 0.32787
N_Gemme:Dirad         1  55953   55953  1.2599 0.27643
Defogl:Dirad          1  46449   46449  1.0459 0.32001
N_Gemme:Vigoria       1   4475    4475  0.1008 0.75458
Defogl:Vigoria        1 124472  124472  2.8027 0.11140
Dirad:Vigoria         1  62503   62503  1.4073 0.25092
N_Gemme:Defogl:Dirad  1   5511    5511  0.1241 0.72873
```

```
Residuals            18 799417   44412
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s
```

PvinacciaB

Analysis of Variance Table

```
Response: Co_2008M[, 24]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2              1  155272  155272  0.3906 0.53985
IBIMET_3              1  180716  180716  0.4546 0.50874
N_Gemme               1  434948  434948  1.0940 0.30942
Defogl                1 1461394 1461394  3.6759 0.07122 .
Dirad                 1 1002044 1002044  2.5205 0.12979
Vigoria               1  685305  685305  1.7238 0.20570
N_Gemme:Defogl        1    2539    2539  0.0064 0.93718
N_Gemme:Dirad         1  310970  310970  0.7822 0.38813
Defogl:Dirad          1   25956   25956  0.0653 0.80122
N_Gemme:Vigoria       1  945350  945350  2.3779 0.14046
Defogl:Vigoria        1  684554  684554  1.7219 0.20594
Dirad:Vigoria         1  106062  106062  0.2668 0.61179
N_Gemme:Defogl:Dirad  1  193992  193992  0.4880 0.49377
Residuals            18 7156136  397563
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s
```

DensMostoB

Analysis of Variance Table

```
Response: Co_2008M[, 25]
                     Df     Sum Sq    Mean Sq F value    Pr(>F)
IBIMET_2              1 0.00034123 0.00034123 16.9185 0.0006527 ***
IBIMET_3              1 0.00005488 0.00005488  2.7211 0.1163732
N_Gemme               1 0.00000919 0.00000919  0.4555 0.5083202
Defogl                1 0.00026594 0.00026594 13.1859 0.0019097 **
Dirad                 1 0.00004213 0.00004213  2.0890 0.1655466
Vigoria               1 0.00000933 0.00000933  0.4628 0.5049736
N_Gemme:Defogl        1 0.00000045 0.00000045  0.0221 0.8835375
N_Gemme:Dirad         1 0.00000033 0.00000033  0.0162 0.9002463
Defogl:Dirad          1 0.00011172 0.00011172  5.5393 0.0301600 *
N_Gemme:Vigoria       1 0.00000248 0.00000248  0.1232 0.7296775
Defogl:Vigoria        1 0.00000640 0.00000640  0.3171 0.5802770
Dirad:Vigoria         1 0.00013829 0.00013829  6.8567 0.0174071 *
N_Gemme:Defogl:Dirad  1 0.00000056 0.00000056  0.0279 0.8691849
Residuals            18 0.00036304 0.00002017
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.696
IBIMET_3: n.s
```

BrixB

Analysis of Variance Table

Response: Co_2008M[, 26]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 17.8840 | 17.8840 | 17.8230 | 0.0005129 | *** |
| IBIMET_3 | 1 | 2.0879 | 2.0879 | 2.0807 | 0.1663433 | |
| N_Gemme | 1 | 0.5107 | 0.5107 | 0.5090 | 0.4847183 | |
| Defogl | 1 | 12.9972 | 12.9972 | 12.9529 | 0.0020517 | ** |
| Dirad | 1 | 2.2723 | 2.2723 | 2.2646 | 0.1497080 | |
| Vigoria | 1 | 0.3296 | 0.3296 | 0.3285 | 0.5736570 | |
| N_Gemme:Defogl | 1 | 0.0324 | 0.0324 | 0.0323 | 0.8593402 | |
| N_Gemme:Dirad | 1 | 0.0253 | 0.0253 | 0.0252 | 0.8755928 | |
| Defogl:Dirad | 1 | 5.6269 | 5.6269 | 5.6077 | 0.0292805 | * |
| N_Gemme:Vigoria | 1 | 0.0482 | 0.0482 | 0.0481 | 0.8289064 | |
| Defogl:Vigoria | 1 | 0.3542 | 0.3542 | 0.3530 | 0.5598226 | |
| Dirad:Vigoria | 1 | 6.3184 | 6.3184 | 6.2969 | 0.0218782 | * |
| N_Gemme:Defogl:Dirad | 1 | 0.0335 | 0.0335 | 0.0333 | 0.8571601 | |
| Residuals | 18 | 18.0616 | 1.0034 | | | |

---

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.705
IBIMET_3: n.s

PhB

Analysis of Variance Table

Response: Co_2008M[, 27]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| IBIMET_2 | 1 | 0.018284 | 0.0182840 | 1.7807 | 0.1987 |
| IBIMET_3 | 1 | 0.001040 | 0.0010402 | 0.1013 | 0.7539 |
| N_Gemme | 1 | 0.006101 | 0.0061009 | 0.5942 | 0.4508 |
| Defogl | 1 | 0.006844 | 0.0068444 | 0.6666 | 0.4249 |
| Dirad | 1 | 0.000157 | 0.0001568 | 0.0153 | 0.9030 |
| Vigoria | 1 | 0.003285 | 0.0032849 | 0.3199 | 0.5786 |
| N_Gemme:Defogl | 1 | 0.006031 | 0.0060310 | 0.5874 | 0.4534 |
| N_Gemme:Dirad | 1 | 0.000249 | 0.0002488 | 0.0242 | 0.8780 |
| Defogl:Dirad | 1 | 0.003614 | 0.0036143 | 0.3520 | 0.5604 |
| N_Gemme:Vigoria | 1 | 0.002533 | 0.0025328 | 0.2467 | 0.6254 |
| Defogl:Vigoria | 1 | 0.016945 | 0.0169450 | 1.6503 | 0.2152 |
| Dirad:Vigoria | 1 | 0.003942 | 0.0039419 | 0.3839 | 0.5433 |
| N_Gemme:Defogl:Dirad | 1 | 0.002907 | 0.0029065 | 0.2831 | 0.6012 |
| Residuals | 18 | 0.184825 | 0.0102681 | | |

IBIMET_2: n.s
IBIMET_3: n.s

AcTitolB

Analysis of Variance Table

Response: Co_2008M[, 28]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| IBIMET_2 | 1 | 0.42795 | 0.42795 | 2.5283 | 0.1292 |
| IBIMET_3 | 1 | 0.04768 | 0.04768 | 0.2817 | 0.6021 |

```
N_Gemme               1 0.00147 0.00147  0.0087 0.9268
Defogl                1 0.10489 0.10489  0.6197 0.4414
Dirad                 1 0.00787 0.00787  0.0465 0.8317
Vigoria               1 0.02501 0.02501  0.1478 0.7052
N_Gemme:Defogl        1 0.04230 0.04230  0.2499 0.6232
N_Gemme:Dirad         1 0.05504 0.05504  0.3252 0.5756
Defogl:Dirad          1 0.02754 0.02754  0.1627 0.6914
N_Gemme:Vigoria       1 0.21511 0.21511  1.2708 0.2744
Defogl:Vigoria        1 0.23972 0.23972  1.4162 0.2495
Dirad:Vigoria         1 0.00332 0.00332  0.0196 0.8901
N_Gemme:Defogl:Dirad  1 0.10978 0.10978  0.6485 0.4311
Residuals            18 3.04683 0.16927

IBIMET_2: n.s
IBIMET_3: n.s
```

```
AcTartB

Analysis of Variance Table

Response: Co_2008M[, 29]
                     Df  Sum Sq Mean Sq F value Pr(>F)
IBIMET_2              1 0.57987 0.57987  8.0811 0.0108 *
IBIMET_3              1 0.01117 0.01117  0.1557 0.6978
N_Gemme               1 0.16565 0.16565  2.3085 0.1460
Defogl                1 0.00180 0.00180  0.0251 0.8759
Dirad                 1 0.06200 0.06200  0.8640 0.3649
Vigoria               1 0.01270 0.01270  0.1769 0.6790
N_Gemme:Defogl        1 0.00545 0.00545  0.0759 0.7860
N_Gemme:Dirad         1 0.10775 0.10775  1.5016 0.2362
Defogl:Dirad          1 0.10631 0.10631  1.4816 0.2392
N_Gemme:Vigoria       1 0.09092 0.09092  1.2671 0.2751
Defogl:Vigoria        1 0.00054 0.00054  0.0075 0.9317
Dirad:Vigoria         1 0.01028 0.01028  0.1433 0.7094
N_Gemme:Defogl:Dirad  1 0.03738 0.03738  0.5210 0.4797
Residuals            18 1.29161 0.07176
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.557
IBIMET_3: n.s
```

```
AcMalicoB

Analysis of Variance Table

Response: Co_2008M[, 30]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_2              1 0.89083 0.89083 12.0208 0.002750 **
IBIMET_3              1 0.33563 0.33563  4.5290 0.047397 *
N_Gemme               1 0.01553 0.01553  0.2096 0.652577
Defogl                1 0.35910 0.35910  4.8457 0.041002 *
Dirad                 1 0.02564 0.02564  0.3459 0.563739
Vigoria               1 0.13343 0.13343  1.8005 0.196330
N_Gemme:Defogl        1 0.00851 0.00851  0.1148 0.738691
N_Gemme:Dirad         1 0.06359 0.06359  0.8581 0.366522
Defogl:Dirad          1 0.10082 0.10082  1.3604 0.258690
N_Gemme:Vigoria       1 0.01414 0.01414  0.1909 0.667391
Defogl:Vigoria        1 0.00780 0.00780  0.1052 0.749360
```

```
Dirad:Vigoria         1 0.14184 0.14184  1.9139 0.183447
N_Gemme:Defogl:Dirad  1 0.04289 0.04289  0.5788 0.456632
Residuals            18 1.33393 0.07411
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.633
IBIMET_3: -0.448


KB

Analysis of Variance Table

Response: Co_2008M[, 31]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_2              1 0.48275 0.48275 16.0468 0.000829 ***
IBIMET_3              1 0.01929 0.01929  0.6411 0.433748
N_Gemme               1 0.00871 0.00871  0.2894 0.597217
Defogl                1 0.00147 0.00147  0.0488 0.827628
Dirad                 1 0.00076 0.00076  0.0251 0.875847
Vigoria               1 0.05746 0.05746  1.9099 0.183882
N_Gemme:Defogl        1 0.01989 0.01989  0.6612 0.426772
N_Gemme:Dirad         1 0.00005 0.00005  0.0015 0.969117
Defogl:Dirad          1 0.00105 0.00105  0.0348 0.854185
N_Gemme:Vigoria       1 0.01955 0.01955  0.6498 0.430718
Defogl:Vigoria        1 0.03372 0.03372  1.1207 0.303767
Dirad:Vigoria         1 0.00924 0.00924  0.3071 0.586273
N_Gemme:Defogl:Dirad  1 0.02032 0.02032  0.6754 0.421939
Residuals            18 0.54151 0.03008
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.687
IBIMET_3: n.s


ApaB

Analysis of Variance Table

Response: Co_2008M[, 32]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IBIMET_2              1  4074.8  4074.8  8.1238 0.0106264 *
IBIMET_3              1 23917.3 23917.3 47.6829 1.863e-06 ***
N_Gemme               1   877.2   877.2  1.7489 0.2025690
Defogl                1  8498.9  8498.9 16.9439 0.0006483 ***
Dirad                 1   172.5   172.5  0.3439 0.5648962
Vigoria               1  7316.1  7316.1 14.5858 0.0012567 **
N_Gemme:Defogl        1   832.1   832.1  1.6589 0.2140653
N_Gemme:Dirad         1   762.2   762.2  1.5195 0.2335512
Defogl:Dirad          1   580.4   580.4  1.1571 0.2962778
N_Gemme:Vigoria       1    26.5    26.5  0.0528 0.8208859
Defogl:Vigoria        1  4236.4  4236.4  8.4459 0.0094188 **
Dirad:Vigoria         1  1180.1  1180.1  2.3527 0.1424579
N_Gemme:Defogl:Dirad  1   394.8   394.8  0.7870 0.3866982
Residuals            18  9028.6   501.6
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.558
```

IBIMET_3: -0.852

Antoctot1B

Analysis of Variance Table

```
Response: Co_2008M[, 33]
                    Df Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_2             1  34970   34970 24.2908 0.0001084 ***
IBIMET_3             1   3244    3244  2.2532 0.1506807    
N_Gemme              1    455     455  0.3158 0.5810671    
Defogl               1   9392    9392  6.5240 0.0199233 *  
Dirad                1   7485    7485  5.1990 0.0350054 *  
Vigoria              1  10680   10680  7.4182 0.0139337 *  
N_Gemme:Defogl       1      9       9  0.0064 0.9373194    
N_Gemme:Dirad        1    533     533  0.3704 0.5504034    
Defogl:Dirad         1    177     177  0.1232 0.7296811    
N_Gemme:Vigoria      1   2318    2318  1.6099 0.2206708    
Defogl:Vigoria       1    352     352  0.2444 0.6269920    
Dirad:Vigoria        1   3919    3919  2.7224 0.1162914    
N_Gemme:Defogl:Dirad  1      5       5  0.0037 0.9520364    
Residuals           18  25914    1440                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: -0.758
IBIMET_3: n.s

Poliftot1B

Analysis of Variance Table

```
Response: Co_2008M[, 34]
                    Df Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_2             1 384071  384071 16.2413 0.0007855 ***
IBIMET_3             1 163964  163964  6.9336 0.0168781 *  
N_Gemme              1  25002   25002  1.0573 0.3174597    
Defogl               1  20854   20854  0.8819 0.3601207    
Dirad                1  79730   79730  3.3716 0.0829048 .  
Vigoria              1 117976  117976  4.9889 0.0384408 *  
N_Gemme:Defogl       1   1794    1794  0.0759 0.7861271    
N_Gemme:Dirad        1     88      88  0.0037 0.9518982    
Defogl:Dirad         1   8853    8853  0.3744 0.5482909    
N_Gemme:Vigoria      1  34109   34109  1.4424 0.2453200    
Defogl:Vigoria       1  14764   14764  0.6243 0.4397294    
Dirad:Vigoria        1  26460   26460  1.1189 0.3041404    
N_Gemme:Defogl:Dirad  1  12986   12986  0.5492 0.4682196    
Residuals           18 425661   23648                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: -0.689
IBIMET_3: 0.527

Antoctot2B

Analysis of Variance Table

```
Response: Co_2008M[, 35]
                    Df Sum Sq Mean Sq F value  Pr(>F)  
IBIMET_2             1   1953  1953.0  0.5212 0.47961  
IBIMET_3             1   9054  9054.4  2.4163 0.13749  
N_Gemme              1    800   799.8  0.2134 0.64962  
Defogl               1  23710 23710.3  6.3274 0.02160 *
Dirad                1   4885  4884.7  1.3035 0.26853  
Vigoria              1   2291  2290.6  0.6113 0.44448  
N_Gemme:Defogl       1     31    30.7  0.0082 0.92890  
N_Gemme:Dirad        1    943   943.4  0.2518 0.62192  
Defogl:Dirad         1     71    70.7  0.0189 0.89224  
N_Gemme:Vigoria      1    102   101.7  0.0271 0.87097  
Defogl:Vigoria       1   2378  2377.8  0.6345 0.43608  
Dirad:Vigoria        1    551   550.9  0.1470 0.70590  
N_Gemme:Defogl:Dirad  1    760   760.2  0.2029 0.65780  
Residuals           18  67451  3747.3                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


Poliftot2B

Analysis of Variance Table

Response: Co_2008M[, 36]
                    Df  Sum Sq Mean Sq F value  Pr(>F)  
IBIMET_2             1  142193  142193  1.6076 0.22098  
IBIMET_3             1   84798   84798  0.9587 0.34049  
N_Gemme              1    9843    9843  0.1113 0.74254  
Defogl               1   11213   11213  0.1268 0.72594  
Dirad                1   46115   46115  0.5214 0.47953  
Vigoria              1  209141  209141  2.3645 0.14152  
N_Gemme:Defogl       1      39      39  0.0004 0.98342  
N_Gemme:Dirad        1   10799   10799  0.1221 0.73083  
Defogl:Dirad         1   37347   37347  0.4222 0.52403  
N_Gemme:Vigoria      1  322218  322218  3.6430 0.07238 .
Defogl:Vigoria       1  150443  150443  1.7009 0.20860  
Dirad:Vigoria        1   10349   10349  0.1170 0.73626  
N_Gemme:Defogl:Dirad  1   18152   18152  0.2052 0.65595  
Residuals           18 1592091   88449                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s

CORTIGLIANO 2008 DIPROVE

PvinacciaA

Analysis of Variance Table

Response: Co_2008M[, 11]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1            1    4113    4113  0.0420 0.8400407    
DIPROVE_2            1   17030   17030  0.1739 0.6818529    
DIPROVE_3            1   10649   10649  0.1088 0.7455899    
N_Gemme              1  285883  285883  2.9199 0.1056869    
```

```
Defogl                1 1013826 1013826 10.3547 0.0050495 **
Dirad                 1 2225601 2225601 22.7311 0.0001786 ***
Vigoria               1     842     842  0.0086 0.9272047
N_Gemme:Defogl        1   30491   30491  0.3114 0.5840853
N_Gemme:Dirad         1  381147  381147  3.8928 0.0649788 .
Defogl:Dirad          1   14893   14893  0.1521 0.7013693
N_Gemme:Vigoria       1  183972  183972  1.8790 0.1882765
Defogl:Vigoria        1    4850    4850  0.0495 0.8265252
Dirad:Vigoria         1 1107937 1107937 11.3159 0.0036845 **
N_Gemme:Defogl:Dirad  1   55445   55445  0.5663 0.4620333
Residuals            17 1664466   97910
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


DensMostoA

Analysis of Variance Table

Response: Co_2008M[, 12]
                     Df     Sum Sq    Mean Sq F value   Pr(>F)
DIPROVE_1             1 1.0677e-04 1.0677e-04  8.5194 0.009573 **
DIPROVE_2             1 6.9250e-05 6.9250e-05  5.5255 0.031070 *
DIPROVE_3             1 5.7900e-07 5.7900e-07  0.0462 0.832341
N_Gemme               1 2.5284e-05 2.5284e-05  2.0175 0.173581
Defogl                1 1.8000e-07 1.8000e-07  0.0144 0.905945
Dirad                 1 3.1591e-05 3.1591e-05  2.5207 0.130785
Vigoria               1 3.2505e-05 3.2505e-05  2.5936 0.125709
N_Gemme:Defogl        1 1.9880e-06 1.9880e-06  0.1587 0.695348
N_Gemme:Dirad         1 2.9016e-05 2.9016e-05  2.3152 0.146499
Defogl:Dirad          1 9.3990e-06 9.3990e-06  0.7499 0.398560
N_Gemme:Vigoria       1 5.9530e-06 5.9530e-06  0.4750 0.500006
Defogl:Vigoria        1 1.1159e-05 1.1159e-05  0.8904 0.358588
Dirad:Vigoria         1 3.4030e-06 3.4030e-06  0.2715 0.609027
N_Gemme:Defogl:Dirad  1 3.6482e-05 3.6482e-05  2.9109 0.106183
Residuals            17 2.1306e-04 1.2533e-05
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.578
DIPROVE_2: 0.495
DIPROVE_3: n.s


BrixA

Analysis of Variance Table

Response: Co_2008M[, 13]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1  5.9240  5.9240  9.7569 0.006184 **
DIPROVE_2             1  3.3855  3.3855  5.5760 0.030407 *
DIPROVE_3             1  0.0147  0.0147  0.0243 0.878073
N_Gemme               1  0.9086  0.9086  1.4964 0.237910
Defogl                1  0.0003  0.0003  0.0005 0.983078
Dirad                 1  1.5835  1.5835  2.6080 0.124731
Vigoria               1  1.2171  1.2171  2.0046 0.174880
```

```
N_Gemme:Defogl         1  0.1351  0.1351  0.2226 0.643099
N_Gemme:Dirad          1  1.5089  1.5089  2.4851 0.133352
Defogl:Dirad           1  0.4202  0.4202  0.6921 0.416998
N_Gemme:Vigoria        1  0.3055  0.3055  0.5031 0.487754
Defogl:Vigoria         1  0.4129  0.4129  0.6800 0.420996
Dirad:Vigoria          1  0.1895  0.1895  0.3122 0.583646
N_Gemme:Defogl:Dirad   1  1.8619  1.8619  3.0666 0.097937 .
Residuals             17 10.3218  0.6072
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.604
DIPROVE_2: 0.497
DIPROVE_3: n.s
```

PhA

```
Analysis of Variance Table

Response: Co_2008M[, 14]
                     Df   Sum Sq  Mean Sq F value    Pr(>F)
DIPROVE_1             1 0.019481 0.019481  6.8112 0.0183040 *
DIPROVE_2             1 0.001454 0.001454  0.5085 0.4854690
DIPROVE_3             1 0.059469 0.059469 20.7920 0.0002779 ***
N_Gemme               1 0.004084 0.004084  1.4277 0.2485435
Defogl                1 0.000432 0.000432  0.1511 0.7022745
Dirad                 1 0.007016 0.007016  2.4530 0.1357213
Vigoria               1 0.006719 0.006719  2.3491 0.1437553
N_Gemme:Defogl        1 0.012977 0.012977  4.5371 0.0480727 *
N_Gemme:Dirad         1 0.000103 0.000103  0.0359 0.8519994
Defogl:Dirad          1 0.000163 0.000163  0.0570 0.8141741
N_Gemme:Vigoria       1 0.001226 0.001226  0.4286 0.5214596
Defogl:Vigoria        1 0.014815 0.014815  5.1796 0.0360811 *
Dirad:Vigoria         1 0.000591 0.000591  0.2066 0.6551592
N_Gemme:Defogl:Dirad  1 0.002086 0.002086  0.7294 0.4049407
Residuals            17 0.048623 0.002860
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.535
DIPROVE_2: n.s
DIPROVE_3: 0.742
```

AcTitolA

```
Analysis of Variance Table

Response: Co_2008M[, 15]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.01989 0.01989  0.1744 0.68148
DIPROVE_2             1 0.01282 0.01282  0.1124 0.74157
DIPROVE_3             1 0.63937 0.63937  5.6044 0.03004 *
N_Gemme               1 0.35902 0.35902  3.1470 0.09398 .
Defogl                1 0.01697 0.01697  0.1488 0.70448
Dirad                 1 0.02494 0.02494  0.2186 0.64602
Vigoria               1 0.08110 0.08110  0.7109 0.41085
N_Gemme:Defogl        1 0.03305 0.03305  0.2897 0.59739
N_Gemme:Dirad         1 0.18210 0.18210  1.5962 0.22349
Defogl:Dirad          1 0.00503 0.00503  0.0441 0.83622
```

```
N_Gemme:Vigoria       1 0.00362 0.00362  0.0317 0.86077
Defogl:Vigoria        1 0.03132 0.03132  0.2745 0.60709
Dirad:Vigoria         1 0.01228 0.01228  0.1076 0.74690
N_Gemme:Defogl:Dirad  1 0.01084 0.01084  0.0950 0.76160
Residuals            17 1.93943 0.11408
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.498


AcTartA

Analysis of Variance Table

Response: Co_2008M[, 16]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.52319 0.52319  3.2574 0.088848 .
DIPROVE_2             1 0.00073 0.00073  0.0046 0.946973
DIPROVE_3             1 2.07035 2.07035 12.8899 0.002256 **
N_Gemme               1 0.05486 0.05486  0.3415 0.566621
Defogl                1 0.00831 0.00831  0.0517 0.822794
Dirad                 1 0.00016 0.00016  0.0010 0.975264
Vigoria               1 0.12954 0.12954  0.8065 0.381690
N_Gemme:Defogl        1 0.00929 0.00929  0.0578 0.812855
N_Gemme:Dirad         1 0.07039 0.07039  0.4382 0.516843
Defogl:Dirad          1 0.04703 0.04703  0.2928 0.595437
N_Gemme:Vigoria       1 0.01510 0.01510  0.0940 0.762868
Defogl:Vigoria        1 0.21717 0.21717  1.3521 0.260976
Dirad:Vigoria         1 0.04155 0.04155  0.2587 0.617574
N_Gemme:Defogl:Dirad  1 0.14294 0.14294  0.8899 0.358711
Residuals            17 2.73050 0.16062
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.657


AcMalicoA

Analysis of Variance Table

Response: Co_2008M[, 17]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1             1 0.02603 0.02603  0.7120 0.4104836
DIPROVE_2             1 0.00006 0.00006  0.0017 0.9677345
DIPROVE_3             1 0.87530 0.87530 23.9446 0.0001371 ***
N_Gemme               1 0.26092 0.26092  7.1377 0.0160992 *
Defogl                1 0.00275 0.00275  0.0751 0.7873151
Dirad                 1 0.03119 0.03119  0.8532 0.3685649
Vigoria               1 0.42809 0.42809 11.7108 0.0032486 **
N_Gemme:Defogl        1 0.02567 0.02567  0.7021 0.4136955
N_Gemme:Dirad         1 0.01592 0.01592  0.4355 0.5181460
Defogl:Dirad          1 0.05109 0.05109  1.3976 0.2533956
N_Gemme:Vigoria       1 0.01286 0.01286  0.3517 0.5609595
Defogl:Vigoria        1 0.19869 0.19869  5.4352 0.0322961 *
Dirad:Vigoria         1 0.04432 0.04432  1.2125 0.2861791
```

```
N_Gemme:Defogl:Dirad  1 0.02126 0.02126  0.5815 0.4561650
Residuals            17 0.62144 0.03656
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.765


KA

Analysis of Variance Table

Response: Co_2008M[, 18]
                     Df  Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1             1 0.14082 0.14082  6.5984 0.0199260 *  
DIPROVE_2             1 0.01587 0.01587  0.7437 0.4004682    
DIPROVE_3             1 0.54146 0.54146 25.3711 0.0001014 ***
N_Gemme               1 0.03104 0.03104  1.4547 0.2442975    
Defogl                1 0.02677 0.02677  1.2544 0.2782814    
Dirad                 1 0.05881 0.05881  2.7555 0.1152522    
Vigoria               1 0.20064 0.20064  9.4015 0.0069928 ** 
N_Gemme:Defogl        1 0.00287 0.00287  0.1345 0.7183650    
N_Gemme:Dirad         1 0.00833 0.00833  0.3902 0.5404673    
Defogl:Dirad          1 0.03796 0.03796  1.7786 0.1999126    
N_Gemme:Vigoria       1 0.00427 0.00427  0.2003 0.6601515    
Defogl:Vigoria        1 0.08085 0.08085  3.7886 0.0683228 .  
Dirad:Vigoria         1 0.00147 0.00147  0.0690 0.7959716    
N_Gemme:Defogl:Dirad  1 0.00209 0.00209  0.0981 0.7579402    
Residuals            17 0.36280 0.02134                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.529
DIPROVE_2: n.s
DIPROVE_3: -0.774


ApaA

Analysis of Variance Table

Response: Co_2008M[, 19]
                     Df  Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1             1  3229.7  3229.7  4.4033   0.05112 .  
DIPROVE_2             1  1170.2  1170.2  1.5955   0.22360    
DIPROVE_3             1 24040.8 24040.8 32.7768 2.477e-05 ***
N_Gemme               1  3453.8  3453.8  4.7089   0.04447 *  
Defogl                1  1801.4  1801.4  2.4560   0.13550    
Dirad                 1  2727.0  2727.0  3.7179   0.07071 .  
Vigoria               1  5664.1  5664.1  7.7223   0.01286 *  
N_Gemme:Defogl        1     4.7     4.7  0.0064   0.93730    
N_Gemme:Dirad         1    28.8    28.8  0.0392   0.84534    
Defogl:Dirad          1    85.8    85.8  0.1169   0.73656    
N_Gemme:Vigoria       1   268.5   268.5  0.3660   0.55316    
Defogl:Vigoria        1  2460.4  2460.4  3.3544   0.08461 .  
Dirad:Vigoria         1   218.7   218.7  0.2981   0.59214    
N_Gemme:Defogl:Dirad  1   165.8   165.8  0.2260   0.64055    
Residuals            17 12469.0   733.5                      
---
```

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.811

Antoctot1A

Analysis of Variance Table

Response: Co_2008M[, 20]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 3536 | 3535.8 | 1.6650 | 0.21421 | |
| DIPROVE_2 | 1 | 16226 | 16226.3 | 7.6408 | 0.01327 | * |
| DIPROVE_3 | 1 | 1240 | 1240.0 | 0.5839 | 0.45526 | |
| N_Gemme | 1 | 447 | 446.9 | 0.2104 | 0.65225 | |
| Defogl | 1 | 540 | 540.4 | 0.2545 | 0.62041 | |
| Dirad | 1 | 15932 | 15931.9 | 7.5022 | 0.01399 | * |
| Vigoria | 1 | 3349 | 3349.0 | 1.5770 | 0.22618 | |
| N_Gemme:Defogl | 1 | 1645 | 1644.7 | 0.7745 | 0.39111 | |
| N_Gemme:Dirad | 1 | 40 | 39.7 | 0.0187 | 0.89287 | |
| Defogl:Dirad | 1 | 1506 | 1505.7 | 0.7090 | 0.41145 | |
| N_Gemme:Vigoria | 1 | 14 | 14.4 | 0.0068 | 0.93540 | |
| Defogl:Vigoria | 1 | 19 | 18.9 | 0.0089 | 0.92600 | |
| Dirad:Vigoria | 1 | 8673 | 8672.7 | 4.0839 | 0.05933 | . |
| N_Gemme:Defogl:Dirad | 1 | 1180 | 1180.0 | 0.5556 | 0.46620 | |
| Residuals | 17 | 36102 | 2123.6 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: -0.557
DIPROVE_3: n.s

Poliftot1A

Analysis of Variance Table

Response: Co_2008M[, 21]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 5695 | 5695 | 0.7442 | 0.40032 | |
| DIPROVE_2 | 1 | 59978 | 59978 | 7.8380 | 0.01231 | * |
| DIPROVE_3 | 1 | 6735 | 6735 | 0.8801 | 0.36132 | |
| N_Gemme | 1 | 150 | 150 | 0.0196 | 0.89020 | |
| Defogl | 1 | 33296 | 33296 | 4.3512 | 0.05236 | . |
| Dirad | 1 | 399 | 399 | 0.0522 | 0.82207 | |
| Vigoria | 1 | 12655 | 12655 | 1.6538 | 0.21569 | |
| N_Gemme:Defogl | 1 | 17644 | 17644 | 2.3058 | 0.14727 | |
| N_Gemme:Dirad | 1 | 10293 | 10293 | 1.3451 | 0.26217 | |
| Defogl:Dirad | 1 | 31995 | 31995 | 4.1812 | 0.05668 | . |
| N_Gemme:Vigoria | 1 | 5219 | 5219 | 0.6820 | 0.42033 | |
| Defogl:Vigoria | 1 | 497 | 497 | 0.0649 | 0.80195 | |
| Dirad:Vigoria | 1 | 6409 | 6409 | 0.8375 | 0.37291 | |
| N_Gemme:Defogl:Dirad | 1 | 17 | 17 | 0.0022 | 0.96299 | |
| Residuals | 17 | 130088 | 7652 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s

DIPROVE_2: -0.562
DIPROVE_3: n.s

Antoctot2A

Analysis of Variance Table

Response: Co_2008M[, 22]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 18835 | 18834.6 | 2.7291 | 0.11688 | |
| DIPROVE_2 | 1 | 4922 | 4921.8 | 0.7132 | 0.41013 | |
| DIPROVE_3 | 1 | 16744 | 16743.6 | 2.4261 | 0.13775 | |
| N_Gemme | 1 | 3575 | 3574.9 | 0.5180 | 0.48148 | |
| Defogl | 1 | 3870 | 3870.2 | 0.5608 | 0.46418 | |
| Dirad | 1 | 6593 | 6593.0 | 0.9553 | 0.34208 | |
| Vigoria | 1 | 3232 | 3232.1 | 0.4683 | 0.50298 | |
| N_Gemme:Defogl | 1 | 12606 | 12605.5 | 1.8265 | 0.19425 | |
| N_Gemme:Dirad | 1 | 303 | 302.8 | 0.0439 | 0.83658 | |
| Defogl:Dirad | 1 | 9114 | 9114.0 | 1.3206 | 0.26640 | |
| N_Gemme:Vigoria | 1 | 9046 | 9046.4 | 1.3108 | 0.26811 | |
| Defogl:Vigoria | 1 | 4210 | 4209.9 | 0.6100 | 0.44553 | |
| Dirad:Vigoria | 1 | 20915 | 20915.4 | 3.0306 | 0.09977 | . |
| N_Gemme:Defogl:Dirad | 1 | 21111 | 21110.7 | 3.0589 | 0.09833 | . |
| Residuals | 17 | 117324 | 6901.4 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

Poliftot2A

Analysis of Variance Table

Response: Co_2008M[, 23]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 216279 | 216279 | 5.8697 | 0.02686 | * |
| DIPROVE_2 | 1 | 23125 | 23125 | 0.6276 | 0.43915 | |
| DIPROVE_3 | 1 | 66246 | 66246 | 1.7979 | 0.19761 | |
| N_Gemme | 1 | 6285 | 6285 | 0.1706 | 0.68477 | |
| Defogl | 1 | 113237 | 113237 | 3.0732 | 0.09761 | . |
| Dirad | 1 | 88332 | 88332 | 2.3973 | 0.13996 | |
| Vigoria | 1 | 10452 | 10452 | 0.2836 | 0.60121 | |
| N_Gemme:Defogl | 1 | 69721 | 69721 | 1.8922 | 0.18681 | |
| N_Gemme:Dirad | 1 | 31245 | 31245 | 0.8480 | 0.37001 | |
| Defogl:Dirad | 1 | 143443 | 143443 | 3.8930 | 0.06497 | . |
| N_Gemme:Vigoria | 1 | 1826 | 1826 | 0.0496 | 0.82648 | |
| Defogl:Vigoria | 1 | 39033 | 39033 | 1.0593 | 0.31779 | |
| Dirad:Vigoria | 1 | 53202 | 53202 | 1.4439 | 0.24598 | |
| N_Gemme:Defogl:Dirad | 1 | 27423 | 27423 | 0.7443 | 0.40031 | |
| Residuals | 17 | 626392 | 36847 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.507
DIPROVE_2: n.s
DIPROVE_3: n.s

PvinacciaB

Analysis of Variance Table

```
Response: Co_2008M[, 24]
                    Df  Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1            1 1519959 1519959  4.4246 0.05062 .
DIPROVE_2            1   93066   93066  0.2709 0.60943  
DIPROVE_3            1 1000904 1000904  2.9136 0.10603  
N_Gemme              1   12175   12175  0.0354 0.85291  
Defogl               1  177346  177346  0.5162 0.48221  
Dirad                1 1379437 1379437  4.0155 0.06129 .
Vigoria              1  935824  935824  2.7242 0.11719  
N_Gemme:Defogl       1   15531   15531  0.0452 0.83414  
N_Gemme:Dirad        1  435954  435954  1.2690 0.27560  
Defogl:Dirad         1  146397  146397  0.4262 0.52261  
N_Gemme:Vigoria      1 1155914 1155914  3.3648 0.08417 .
Defogl:Vigoria       1  130230  130230  0.3791 0.54624  
Dirad:Vigoria        1     692     692  0.0020 0.96473  
N_Gemme:Defogl:Dirad  1  501830  501830  1.4608 0.24334  
Residuals           17 5839981  343528                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

DensMostoB

Analysis of Variance Table

```
Response: Co_2008M[, 25]
                    Df     Sum Sq    Mean Sq F value    Pr(>F)    
DIPROVE_1            1 0.00054489 0.00054489 28.9868 4.948e-05 ***
DIPROVE_2            1 0.00004790 0.00004790  2.5484   0.12883    
DIPROVE_3            1 0.00000242 0.00000242  0.1289   0.72399    
N_Gemme              1 0.00001048 0.00001048  0.5574   0.46552    
Defogl               1 0.00005691 0.00005691  3.0276   0.09993 .  
Dirad                1 0.00005958 0.00005958  3.1695   0.09290 .  
Vigoria              1 0.00011234 0.00011234  5.9763   0.02569 *  
N_Gemme:Defogl       1 0.00000175 0.00000175  0.0930   0.76416    
N_Gemme:Dirad        1 0.00000430 0.00000430  0.2289   0.63847    
Defogl:Dirad         1 0.00001333 0.00001333  0.7092   0.41139    
N_Gemme:Vigoria      1 0.00003282 0.00003282  1.7457   0.20392    
Defogl:Vigoria       1 0.00005304 0.00005304  2.8216   0.11128    
Dirad:Vigoria        1 0.00003676 0.00003676  1.9558   0.17994    
N_Gemme:Defogl:Dirad  1 0.00004987 0.00004987  2.6530   0.12174    
Residuals           17 0.00031956 0.00001880                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.794
DIPROVE_2: n.s
DIPROVE_3: n.s

BrixB

```
Analysis of Variance Table

Response: Co_2008M[, 26]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1            1 27.9376 27.9376 30.6547 3.623e-05 ***
DIPROVE_2            1  2.6193  2.6193  2.8741   0.10825    
DIPROVE_3            1  0.0221  0.0221  0.0242   0.87816    
N_Gemme              1  0.3917  0.3917  0.4298   0.52086    
Defogl               1  2.7682  2.7682  3.0374   0.09942 .  
Dirad                1  3.2806  3.2806  3.5996   0.07491 .  
Vigoria              1  5.2064  5.2064  5.7128   0.02869 *  
N_Gemme:Defogl       1  0.0992  0.0992  0.1088   0.74552    
N_Gemme:Dirad        1  0.2369  0.2369  0.2600   0.61670    
Defogl:Dirad         1  0.7067  0.7067  0.7754   0.39083    
N_Gemme:Vigoria      1  1.3530  1.3530  1.4846   0.23969    
Defogl:Vigoria       1  2.4491  2.4491  2.6873   0.11953    
Dirad:Vigoria        1  1.5504  1.5504  1.7011   0.20952    
N_Gemme:Defogl:Dirad  1  2.4679  2.4679  2.7080   0.11821    
Residuals           17 15.4932  0.9114                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.802
DIPROVE_2: n.s
DIPROVE_3: n.s
```

PhB

```
Analysis of Variance Table

Response: Co_2008M[, 27]
                    Df   Sum Sq   Mean Sq F value Pr(>F)
DIPROVE_1            1 0.001886 0.0018859  0.1653 0.6894
DIPROVE_2            1 0.004656 0.0046556  0.4080 0.5315
DIPROVE_3            1 0.005889 0.0058891  0.5161 0.4823
N_Gemme              1 0.005391 0.0053909  0.4724 0.5011
Defogl               1 0.004435 0.0044348  0.3887 0.5413
Dirad                1 0.004066 0.0040656  0.3563 0.5584
Vigoria              1 0.001997 0.0019966  0.1750 0.6810
N_Gemme:Defogl       1 0.002793 0.0027933  0.2448 0.6271
N_Gemme:Dirad        1 0.000071 0.0000715  0.0063 0.9378
Defogl:Dirad         1 0.003165 0.0031653  0.2774 0.6052
N_Gemme:Vigoria      1 0.000071 0.0000707  0.0062 0.9382
Defogl:Vigoria       1 0.019181 0.0191811  1.6810 0.2121
Dirad:Vigoria        1 0.007049 0.0070489  0.6178 0.4427
N_Gemme:Defogl:Dirad  1 0.002129 0.0021289  0.1866 0.6712
Residuals           17 0.193979 0.0114105               

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

AcTitolB

```
Analysis of Variance Table

Response: Co_2008M[, 28]
                    Df  Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1            1 0.00055 0.00055  0.0036 0.95283
```

```
DIPROVE_2             1 0.47398 0.47398  3.0901 0.09676 .
DIPROVE_3             1 0.72789 0.72789  4.7455 0.04374 *
N_Gemme               1 0.02686 0.02686  0.1751 0.68085
Defogl                1 0.01706 0.01706  0.1112 0.74285
Dirad                 1 0.08873 0.08873  0.5785 0.45733
Vigoria               1 0.00135 0.00135  0.0088 0.92648
N_Gemme:Defogl        1 0.04578 0.04578  0.2984 0.59196
N_Gemme:Dirad         1 0.06984 0.06984  0.4553 0.50889
Defogl:Dirad          1 0.00219 0.00219  0.0143 0.90619
N_Gemme:Vigoria       1 0.00315 0.00315  0.0205 0.88778
Defogl:Vigoria        1 0.12554 0.12554  0.8185 0.37828
Dirad:Vigoria         1 0.05592 0.05592  0.3646 0.55396
N_Gemme:Defogl:Dirad  1 0.10811 0.10811  0.7048 0.41282
Residuals            17 2.60756 0.15339
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.467


AcTartB

Analysis of Variance Table

Response: Co_2008M[, 29]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.11227 0.11227  1.8162 0.19546
DIPROVE_2             1 0.07364 0.07364  1.1913 0.29030
DIPROVE_3             1 0.51819 0.51819  8.3824 0.01006 *
N_Gemme               1 0.11068 0.11068  1.7904 0.19851
Defogl                1 0.02509 0.02509  0.4059 0.53254
Dirad                 1 0.11897 0.11897  1.9245 0.18328
Vigoria               1 0.04682 0.04682  0.7574 0.39626
N_Gemme:Defogl        1 0.00334 0.00334  0.0541 0.81885
N_Gemme:Dirad         1 0.10570 0.10570  1.7099 0.20841
Defogl:Dirad          1 0.15370 0.15370  2.4864 0.13326
N_Gemme:Vigoria       1 0.00327 0.00327  0.0529 0.82082
Defogl:Vigoria        1 0.06224 0.06224  1.0069 0.32972
Dirad:Vigoria         1 0.00492 0.00492  0.0796 0.78128
N_Gemme:Defogl:Dirad  1 0.09366 0.09366  1.5151 0.23512
Residuals            17 1.05091 0.06182
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.575


AcMalicoB

Analysis of Variance Table

Response: Co_2008M[, 30]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.81510 0.81510  9.3889 0.007024 **
DIPROVE_2             1 0.07889 0.07889  0.9088 0.353801
DIPROVE_3             1 0.00597 0.00597  0.0687 0.796321
N_Gemme               1 0.18973 0.18973  2.1855 0.157609
```

```
Defogl                1 0.05711 0.05711  0.6579 0.428521
Dirad                 1 0.01494 0.01494  0.1721 0.683405
Vigoria               1 0.29925 0.29925  3.4470 0.080784 .
N_Gemme:Defogl        1 0.00033 0.00033  0.0038 0.951385
N_Gemme:Dirad         1 0.12610 0.12610  1.4525 0.244642
Defogl:Dirad          1 0.00016 0.00016  0.0018 0.966565
N_Gemme:Vigoria       1 0.00674 0.00674  0.0776 0.783955
Defogl:Vigoria        1 0.37984 0.37984  4.3753 0.051783 .
Dirad:Vigoria         1 0.01398 0.01398  0.1610 0.693257
N_Gemme:Defogl:Dirad  1 0.00970 0.00970  0.1117 0.742301
Residuals            17 1.47585 0.08681
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.596
DIPROVE_2: n.s
DIPROVE_3: n.s


KB

Analysis of Variance Table

Response: Co_2008M[, 31]
                     Df  Sum Sq  Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.18229 0.182285  4.5528 0.04773 *
DIPROVE_2             1 0.05699 0.056992  1.4234 0.24922
DIPROVE_3             1 0.03023 0.030228  0.7550 0.39701
N_Gemme               1 0.03949 0.039495  0.9864 0.33455
Defogl                1 0.01987 0.019867  0.4962 0.49071
Dirad                 1 0.00565 0.005650  0.1411 0.71181
Vigoria               1 0.01161 0.011614  0.2901 0.59715
N_Gemme:Defogl        1 0.00459 0.004591  0.1147 0.73904
N_Gemme:Dirad         1 0.00908 0.009080  0.2268 0.63999
Defogl:Dirad          1 0.01368 0.013678  0.3416 0.56657
N_Gemme:Vigoria       1 0.00006 0.000064  0.0016 0.96846
Defogl:Vigoria        1 0.15949 0.159487  3.9833 0.06223 .
Dirad:Vigoria         1 0.00200 0.001998  0.0499 0.82588
N_Gemme:Defogl:Dirad  1 0.00006 0.000065  0.0016 0.96840
Residuals            17 0.68065 0.040038
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.46
DIPROVE_2: n.s
DIPROVE_3: n.s


ApaB

Analysis of Variance Table

Response: Co_2008M[, 32]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1             1  1632.3  1632.3  2.7695  0.114400
DIPROVE_2             1  1774.2  1774.2  3.0103  0.100826
DIPROVE_3             1 26351.0 26351.0 44.7095 3.826e-06 ***
N_Gemme               1  7310.8  7310.8 12.4042  0.002616 **
Defogl                1  2555.8  2555.8  4.3364  0.052723 .
Dirad                 1  2605.3  2605.3  4.4204  0.050715 .
Vigoria               1  3663.5  3663.5  6.2159  0.023271 *
```

```
N_Gemme:Defogl        1   396.3   396.3  0.6725  0.423541
N_Gemme:Dirad         1   200.6   200.6  0.3403  0.567327
Defogl:Dirad          1   327.6   327.6  0.5558  0.466123
N_Gemme:Vigoria       1     0.9     0.9  0.0015  0.969120
Defogl:Vigoria        1  4157.3  4157.3  7.0537  0.016636 *
Dirad:Vigoria         1   846.7   846.7  1.4366  0.247131
N_Gemme:Defogl:Dirad  1    55.8    55.8  0.0947  0.762028
Residuals            17 10019.5   589.4
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.851
```

Antoctot1B

```
Analysis of Variance Table

Response: Co_2008M[, 33]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1             1 26355.8 26355.8 20.6214 0.0002892 ***
DIPROVE_2             1    21.3    21.3  0.0167 0.8987553
DIPROVE_3             1 10336.3 10336.3  8.0874 0.0112194 *
N_Gemme               1   778.2   778.2  0.6089 0.4459310
Defogl                1  7514.2  7514.2  5.8793 0.0267519 *
Dirad                 1 12607.0 12607.0  9.8641 0.0059607 **
Vigoria               1  7736.8  7736.8  6.0535 0.0248813 *
N_Gemme:Defogl        1    74.5    74.5  0.0583 0.8121016
N_Gemme:Dirad         1   701.0   701.0  0.5485 0.4690311
Defogl:Dirad          1  1977.9  1977.9  1.5475 0.2303810
N_Gemme:Vigoria       1  1112.0  1112.0  0.8700 0.3640043
Defogl:Vigoria        1  2783.8  2783.8  2.1781 0.1582650
Dirad:Vigoria         1  5240.9  5240.9  4.1006 0.0588670 .
N_Gemme:Defogl:Dirad  1   486.2   486.2  0.3804 0.5455736
Residuals            17 21727.3  1278.1
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.74
DIPROVE_2: n.s
DIPROVE_3: -0.568
```

Poliftot1B

```
Analysis of Variance Table

Response: Co_2008M[, 34]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 150742  150742  6.2194 0.023237 *
DIPROVE_2             1  33356   33356  1.3762 0.256918
DIPROVE_3             1 284724  284724 11.7474 0.003211 **
N_Gemme               1   8631    8631  0.3561 0.558533
Defogl                1  15742   15742  0.6495 0.431416
Dirad                 1 114262  114262  4.7143 0.044359 *
Vigoria               1 164404  164404  6.7831 0.018509 *
N_Gemme:Defogl        1   3578    3578  0.1476 0.705582
N_Gemme:Dirad         1    927     927  0.0382 0.847277
Defogl:Dirad          1  12369   12369  0.5103 0.484695
```

```
N_Gemme:Vigoria       1  36278   36278  1.4968 0.237855
Defogl:Vigoria        1  45455   45455  1.8754 0.188674
Dirad:Vigoria         1  26646   26646  1.0994 0.309083
N_Gemme:Defogl:Dirad  1   7165    7165  0.2956 0.593697
Residuals            17 412034   24237
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.518
DIPROVE_2: n.s
DIPROVE_3: -0.639


Antoctot2B

Analysis of Variance Table

Response: Co_2008M[, 35]
                     Df Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1             1  12696 12696.5  3.5372 0.07725 .
DIPROVE_2             1   1045  1045.2  0.2912 0.59645
DIPROVE_3             1   7202  7202.2  2.0065 0.17469
N_Gemme               1    549   549.3  0.1530 0.70051
Defogl                1  15577 15576.7  4.3396 0.05264 .
Dirad                 1   6344  6344.0  1.7674 0.20127
Vigoria               1    276   275.9  0.0769 0.78494
N_Gemme:Defogl        1     24    23.9  0.0067 0.93590
N_Gemme:Dirad         1   1090  1089.8  0.3036 0.58879
Defogl:Dirad          1   1702  1701.5  0.4740 0.50042
N_Gemme:Vigoria       1    634   634.4  0.1767 0.67946
Defogl:Vigoria        1   1535  1535.2  0.4277 0.52186
Dirad:Vigoria         1    918   917.9  0.2557 0.61957
N_Gemme:Defogl:Dirad  1   4367  4366.6  1.2165 0.28542
Residuals            17  61020  3589.4
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


Poliftot2B

Analysis of Variance Table

Response: Co_2008M[, 36]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1             1    9519    9519  0.1024 0.75290
DIPROVE_2             1  119205  119205  1.2820 0.27325
DIPROVE_3             1  213530  213530  2.2963 0.14805
N_Gemme               1       0       0  0.0000 0.99954
Defogl                1   32890   32890  0.3537 0.55986
Dirad                 1   26847   26847  0.2887 0.59801
Vigoria               1  185481  185481  1.9947 0.17589
N_Gemme:Defogl        1     280     280  0.0030 0.95686
N_Gemme:Dirad         1    8359    8359  0.0899 0.76795
Defogl:Dirad          1    5061    5061  0.0544 0.81832
N_Gemme:Vigoria       1  301185  301185  3.2390 0.08968 .
Defogl:Vigoria        1  141089  141089  1.5173 0.23480
Dirad:Vigoria         1    4693    4693  0.0505 0.82493
```

```
N_Gemme:Defogl:Dirad  1   15829   15829  0.1702 0.68507
Residuals            17 1580775   92987
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

CORTIGLIANO 2008 IASMA

PvinacciaA

Analysis of Variance Table

```
Response: Co_2008M[, 11]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1               1  198218  198218  2.3020 0.1475799
IASMA_2               1     928     928  0.0108 0.9185476
IASMA_3               1   40275   40275  0.4677 0.5032476
N_Gemme               1  263664  263664  3.0621 0.0981646 .
Defogl                1  826190  826190  9.5951 0.0065382 **
Dirad                 1 2132777 2132777 24.7693 0.0001150 ***
Vigoria               1    3397    3397  0.0395 0.8449152
N_Gemme:Defogl        1   64299   64299  0.7468 0.3995361
N_Gemme:Dirad         1  386830  386830  4.4925 0.0490639 *
Defogl:Dirad          1   12083   12083  0.1403 0.7125928
N_Gemme:Vigoria       1  212148  212148  2.4638 0.1349205
Defogl:Vigoria        1   42993   42993  0.4993 0.4893800
Dirad:Vigoria         1 1298071 1298071 15.0753 0.0011957 **
N_Gemme:Defogl:Dirad  1   55479   55479  0.6443 0.4332316
Residuals            17 1463794   86106
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

DensMostoA

Analysis of Variance Table

```
Response: Co_2008M[, 12]
                     Df     Sum Sq    Mean Sq F value  Pr(>F)
IASMA_1               1 0.00000172 1.7250e-06  0.0835 0.77611
IASMA_2               1 0.00000770 7.7010e-06  0.3728 0.54956
IASMA_3               1 0.00000015 1.4800e-07  0.0072 0.93345
N_Gemme               1 0.00000751 7.5090e-06  0.3635 0.55452
Defogl                1 0.00007581 7.5814e-05  3.6701 0.07237 .
Dirad                 1 0.00001377 1.3769e-05  0.6666 0.42555
Vigoria               1 0.00001153 1.1530e-05  0.5582 0.46521
N_Gemme:Defogl        1 0.00000008 7.6000e-08  0.0037 0.95248
N_Gemme:Dirad         1 0.00005600 5.6001e-05  2.7110 0.11802
Defogl:Dirad          1 0.00000421 4.2140e-06  0.2040 0.65722
N_Gemme:Vigoria       1 0.00000000 4.0000e-09  0.0002 0.98874
Defogl:Vigoria        1 0.00000458 4.5790e-06  0.2217 0.64375
Dirad:Vigoria         1 0.00001090 1.0898e-05  0.5275 0.47752
N_Gemme:Defogl:Dirad  1 0.00003148 3.1476e-05  1.5237 0.23385
Residuals            17 0.00035117 2.0657e-05
```

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

BrixA

Analysis of Variance Table

Response: Co_2008M[, 13]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.0229 | 0.0229 | 0.0228 | 0.88177 | |
| IASMA_2 | 1 | 0.4134 | 0.4134 | 0.4123 | 0.52936 | |
| IASMA_3 | 1 | 0.1970 | 0.1970 | 0.1965 | 0.66316 | |
| N_Gemme | 1 | 0.3439 | 0.3439 | 0.3430 | 0.56580 | |
| Defogl | 1 | 3.2632 | 3.2632 | 3.2547 | 0.08897 | . |
| Dirad | 1 | 0.6767 | 0.6767 | 0.6749 | 0.42271 | |
| Vigoria | 1 | 0.7696 | 0.7696 | 0.7676 | 0.39317 | |
| N_Gemme:Defogl | 1 | 0.0104 | 0.0104 | 0.0103 | 0.92024 | |
| N_Gemme:Dirad | 1 | 2.8499 | 2.8499 | 2.8425 | 0.11007 | |
| Defogl:Dirad | 1 | 0.2040 | 0.2040 | 0.2035 | 0.65761 | |
| N_Gemme:Vigoria | 1 | 0.0001 | 0.0001 | 0.0001 | 0.99153 | |
| Defogl:Vigoria | 1 | 0.1613 | 0.1613 | 0.1608 | 0.69338 | |
| Dirad:Vigoria | 1 | 0.5733 | 0.5733 | 0.5718 | 0.45991 | |
| N_Gemme:Defogl:Dirad | 1 | 1.6598 | 1.6598 | 1.6554 | 0.21546 | |
| Residuals | 17 | 17.0444 | 1.0026 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

PhA

Analysis of Variance Table

Response: Co_2008M[, 14]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.007041 | 0.007041 | 2.1623 | 0.1596970 | |
| IASMA_2 | 1 | 0.002914 | 0.002914 | 0.8951 | 0.3573614 | |
| IASMA_3 | 1 | 0.063628 | 0.063628 | 19.5408 | 0.0003744 | *** |
| N_Gemme | 1 | 0.001232 | 0.001232 | 0.3783 | 0.5466355 | |
| Defogl | 1 | 0.001402 | 0.001402 | 0.4306 | 0.5204694 | |
| Dirad | 1 | 0.008752 | 0.008752 | 2.6877 | 0.1194970 | |
| Vigoria | 1 | 0.014442 | 0.014442 | 4.4352 | 0.0503728 | . |
| N_Gemme:Defogl | 1 | 0.008365 | 0.008365 | 2.5690 | 0.1273965 | |
| N_Gemme:Dirad | 1 | 0.000176 | 0.000176 | 0.0542 | 0.8187136 | |
| Defogl:Dirad | 1 | 0.000015 | 0.000015 | 0.0046 | 0.9467265 | |
| N_Gemme:Vigoria | 1 | 0.000431 | 0.000431 | 0.1323 | 0.7205176 | |
| Defogl:Vigoria | 1 | 0.012564 | 0.012564 | 3.8584 | 0.0660613 | . |
| Dirad:Vigoria | 1 | 0.000673 | 0.000673 | 0.2066 | 0.6552314 | |
| N_Gemme:Defogl:Dirad | 1 | 0.002250 | 0.002250 | 0.6911 | 0.4173231 | |
| Residuals | 17 | 0.055355 | 0.003256 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```
IASMA_1: n.s
IASMA_2: n.s
IASMA_3: 0.731
```

AcTitolA

```
Analysis of Variance Table

Response: Co_2008M[, 15]
                     Df  Sum Sq Mean Sq F value  Pr(>F)  
IASMA_1               1 0.07235 0.07235  0.6677 0.42516  
IASMA_2               1 0.01879 0.01879  0.1734 0.68233  
IASMA_3               1 0.79441 0.79441  7.3312 0.01494 *
N_Gemme               1 0.04340 0.04340  0.4005 0.53526  
Defogl                1 0.04225 0.04225  0.3899 0.54065  
Dirad                 1 0.00160 0.00160  0.0148 0.90465  
Vigoria               1 0.05503 0.05503  0.5079 0.48573  
N_Gemme:Defogl        1 0.01568 0.01568  0.1447 0.70837  
N_Gemme:Dirad         1 0.23695 0.23695  2.1867 0.15750  
Defogl:Dirad          1 0.01116 0.01116  0.1030 0.75217  
N_Gemme:Vigoria       1 0.11169 0.11169  1.0307 0.32422  
Defogl:Vigoria        1 0.00315 0.00315  0.0291 0.86659  
Dirad:Vigoria         1 0.03177 0.03177  0.2932 0.59520  
N_Gemme:Defogl:Dirad  1 0.09143 0.09143  0.8438 0.37117  
Residuals            17 1.84213 0.10836                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: -0.549
```

AcTartA

```
Analysis of Variance Table

Response: Co_2008M[, 16]
                     Df  Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1               1 0.07316 0.07316  0.6190 0.4422493    
IASMA_2               1 0.02473 0.02473  0.2093 0.6531407    
IASMA_3               1 2.40880 2.40880 20.3809 0.0003061 ***
N_Gemme               1 0.14639 0.14639  1.2387 0.2812217    
Defogl                1 0.05454 0.05454  0.4615 0.5060867    
Dirad                 1 0.00013 0.00013  0.0011 0.9739524    
Vigoria               1 0.19580 0.19580  1.6567 0.2153031    
N_Gemme:Defogl        1 0.02975 0.02975  0.2517 0.6222889    
N_Gemme:Dirad         1 0.14151 0.14151  1.1973 0.2891282    
Defogl:Dirad          1 0.11968 0.11968  1.0126 0.3283957    
N_Gemme:Vigoria       1 0.17929 0.17929  1.5169 0.2348485    
Defogl:Vigoria        1 0.27298 0.27298  2.3097 0.1469523    
Dirad:Vigoria         1 0.01677 0.01677  0.1419 0.7110632    
N_Gemme:Defogl:Dirad  1 0.38835 0.38835  3.2859 0.0875772 .  
Residuals            17 2.00921 0.11819                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: -0.738
```

AcMalicoA

Analysis of Variance Table

Response: Co_2008M[, 17]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.13488 | 0.13488 | 2.8987 | 0.106862 | |
| IASMA_2 | 1 | 0.02877 | 0.02877 | 0.6183 | 0.442486 | |
| IASMA_3 | 1 | 0.61609 | 0.61609 | 13.2405 | 0.002031 | ** |
| N_Gemme | 1 | 0.00167 | 0.00167 | 0.0359 | 0.851998 | |
| Defogl | 1 | 0.11992 | 0.11992 | 2.5773 | 0.126822 | |
| Dirad | 1 | 0.03475 | 0.03475 | 0.7469 | 0.399498 | |
| Vigoria | 1 | 0.55459 | 0.55459 | 11.9189 | 0.003042 | ** |
| N_Gemme:Defogl | 1 | 0.03023 | 0.03023 | 0.6496 | 0.431376 | |
| N_Gemme:Dirad | 1 | 0.04986 | 0.04986 | 1.0716 | 0.315087 | |
| Defogl:Dirad | 1 | 0.05201 | 0.05201 | 1.1178 | 0.305194 | |
| N_Gemme:Vigoria | 1 | 0.01399 | 0.01399 | 0.3006 | 0.590648 | |
| Defogl:Vigoria | 1 | 0.11702 | 0.11702 | 2.5148 | 0.131207 | |
| Dirad:Vigoria | 1 | 0.06052 | 0.06052 | 1.3006 | 0.269908 | |
| N_Gemme:Defogl:Dirad | 1 | 0.01025 | 0.01025 | 0.2204 | 0.644722 | |
| Residuals | 17 | 0.79102 | 0.04653 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: 0.662

KA

Analysis of Variance Table

Response: Co_2008M[, 18]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.03822 | 0.03822 | 1.8341 | 0.193378 | |
| IASMA_2 | 1 | 0.04782 | 0.04782 | 2.2946 | 0.148199 | |
| IASMA_3 | 1 | 0.63910 | 0.63910 | 30.6670 | 3.615e-05 | *** |
| N_Gemme | 1 | 0.03361 | 0.03361 | 1.6129 | 0.221199 | |
| Defogl | 1 | 0.00128 | 0.00128 | 0.0613 | 0.807387 | |
| Dirad | 1 | 0.06087 | 0.06087 | 2.9209 | 0.105632 | |
| Vigoria | 1 | 0.22997 | 0.22997 | 11.0352 | 0.004035 | ** |
| N_Gemme:Defogl | 1 | 0.00379 | 0.00379 | 0.1820 | 0.675052 | |
| N_Gemme:Dirad | 1 | 0.00007 | 0.00007 | 0.0032 | 0.955482 | |
| Defogl:Dirad | 1 | 0.03035 | 0.03035 | 1.4564 | 0.244030 | |
| N_Gemme:Vigoria | 1 | 0.01350 | 0.01350 | 0.6477 | 0.432046 | |
| Defogl:Vigoria | 1 | 0.05498 | 0.05498 | 2.6382 | 0.122719 | |
| Dirad:Vigoria | 1 | 0.00002 | 0.00002 | 0.0010 | 0.975005 | |
| N_Gemme:Defogl:Dirad | 1 | 0.00820 | 0.00820 | 0.3935 | 0.538789 | |
| Residuals | 17 | 0.35428 | 0.02084 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: -0.802

ApaA

Analysis of Variance Table

Response: Co_2008M[, 19]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 3734.0 | 3734.0 | 6.2368 | 0.023072 | * |
| IASMA_2 | 1 | 1908.6 | 1908.6 | 3.1879 | 0.092036 | . |
| IASMA_3 | 1 | 21493.1 | 21493.1 | 35.8996 | 1.458e-05 | *** |
| N_Gemme | 1 | 57.8 | 57.8 | 0.0966 | 0.759721 | |
| Defogl | 1 | 5765.2 | 5765.2 | 9.6295 | 0.006461 | ** |
| Dirad | 1 | 1795.6 | 1795.6 | 2.9991 | 0.101416 | |
| Vigoria | 1 | 7953.7 | 7953.7 | 13.2849 | 0.002004 | ** |
| N_Gemme:Defogl | 1 | 4.3 | 4.3 | 0.0073 | 0.933139 | |
| N_Gemme:Dirad | 1 | 10.2 | 10.2 | 0.0170 | 0.897674 | |
| Defogl:Dirad | 1 | 31.2 | 31.2 | 0.0521 | 0.822244 | |
| N_Gemme:Vigoria | 1 | 567.1 | 567.1 | 0.9472 | 0.344088 | |
| Defogl:Vigoria | 1 | 3237.9 | 3237.9 | 5.4082 | 0.032673 | * |
| Dirad:Vigoria | 1 | 224.8 | 224.8 | 0.3755 | 0.548128 | |
| N_Gemme:Defogl:Dirad | 1 | 827.0 | 827.0 | 1.3813 | 0.256086 | |
| Residuals | 17 | 10177.9 | 598.7 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.518
IASMA_2: n.s
IASMA_3: -0.824

Antoctot1A

Analysis of Variance Table

Response: Co_2008M[, 20]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 5588 | 5587.7 | 1.9882 | 0.17657 | |
| IASMA_2 | 1 | 77 | 76.6 | 0.0272 | 0.87085 | |
| IASMA_3 | 1 | 14 | 14.1 | 0.0050 | 0.94442 | |
| N_Gemme | 1 | 19 | 18.6 | 0.0066 | 0.93616 | |
| Defogl | 1 | 1567 | 1566.6 | 0.5574 | 0.46550 | |
| Dirad | 1 | 11006 | 11006.4 | 3.9162 | 0.06426 | . |
| Vigoria | 1 | 286 | 286.2 | 0.1018 | 0.75354 | |
| N_Gemme:Defogl | 1 | 1503 | 1503.4 | 0.5349 | 0.47451 | |
| N_Gemme:Dirad | 1 | 170 | 170.2 | 0.0605 | 0.80858 | |
| Defogl:Dirad | 1 | 239 | 238.7 | 0.0849 | 0.77423 | |
| N_Gemme:Vigoria | 1 | 2347 | 2347.1 | 0.8351 | 0.37357 | |
| Defogl:Vigoria | 1 | 3426 | 3426.5 | 1.2192 | 0.28491 | |
| Dirad:Vigoria | 1 | 15969 | 15968.6 | 5.6818 | 0.02907 | * |
| N_Gemme:Defogl:Dirad | 1 | 459 | 459.4 | 0.1635 | 0.69102 | |
| Residuals | 17 | 47778 | 2810.5 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

Poliftot1A

Analysis of Variance Table

```
Response: Co_2008M[, 21]
                    Df Sum Sq Mean Sq F value  Pr(>F)
IASMA_1              1  20734   20734  2.3903 0.14050
IASMA_2              1    669     669  0.0771 0.78458
IASMA_3              1     30      30  0.0035 0.95372
N_Gemme              1   1804    1804  0.2080 0.65411
Defogl               1  59089   59089  6.8119 0.01830 *
Dirad                1   2458    2458  0.2833 0.60142
Vigoria              1    984     984  0.1134 0.74038
N_Gemme:Defogl       1  16344   16344  1.8842 0.18770
N_Gemme:Dirad        1   9810    9810  1.1309 0.30245
Defogl:Dirad         1  13342   13342  1.5381 0.23175
N_Gemme:Vigoria      1  34009   34009  3.9207 0.06412 .
Defogl:Vigoria       1  10700   10700  1.2336 0.28218
Dirad:Vigoria        1    160     160  0.0184 0.89370
N_Gemme:Defogl:Dirad  1   3473    3473  0.4004 0.53532
Residuals           17 147464    8674
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


Antoctot2A

Analysis of Variance Table

Response: Co_2008M[, 22]
                    Df Sum Sq Mean Sq F value  Pr(>F)
IASMA_1              1   2056    2056  0.2781 0.60479
IASMA_2              1    766     766  0.1037 0.75141
IASMA_3              1    354     354  0.0479 0.82936
N_Gemme              1  13953   13953  1.8872 0.18737
Defogl               1  24056   24056  3.2536 0.08902 .
Dirad                1     60      60  0.0081 0.92950
Vigoria              1    110     110  0.0149 0.90440
N_Gemme:Defogl       1  18514   18514  2.5040 0.13198
N_Gemme:Dirad        1    183     183  0.0247 0.87700
Defogl:Dirad         1   1631    1631  0.2207 0.64451
N_Gemme:Vigoria      1   1181    1181  0.1598 0.69433
Defogl:Vigoria       1  17484   17484  2.3648 0.14250
Dirad:Vigoria        1  36287   36287  4.9079 0.04067 *
N_Gemme:Defogl:Dirad  1  10075   10075  1.3626 0.25919
Residuals           17 125690    7394
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


Poliftot2A

Analysis of Variance Table

Response: Co_2008M[, 23]
                    Df Sum Sq Mean Sq F value  Pr(>F)
IASMA_1              1   8890    8890  0.1835 0.67379
```

```
IASMA_2              1   1862    1862  0.0384 0.84692
IASMA_3              1     21      21  0.0004 0.98383
N_Gemme              1  44152   44152  0.9112 0.35318
Defogl               1   1611    1611  0.0332 0.85748
Dirad                1 282597  282597  5.8318 0.02729 *
Vigoria              1    300     300  0.0062 0.93825
N_Gemme:Defogl       1 101078  101078  2.0859 0.16684
N_Gemme:Dirad        1  83944   83944  1.7323 0.20559
Defogl:Dirad         1  48992   48992  1.0110 0.32876
N_Gemme:Vigoria      1  20212   20212  0.4171 0.52701
Defogl:Vigoria       1  82261   82261  1.6976 0.20998
Dirad:Vigoria        1  16540   16540  0.3413 0.56673
N_Gemme:Defogl:Dirad  1      3       3  0.0001 0.99357
Residuals           17 823779   48458
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


PvinacciaB

Analysis of Variance Table

Response: Co_2008M[, 24]
                    Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1              1  202236  202236  0.4640 0.50495
IASMA_2              1  131811  131811  0.3024 0.58954
IASMA_3              1  192138  192138  0.4408 0.51565
N_Gemme              1  519885  519885  1.1927 0.29003
Defogl               1 1793498 1793498  4.1145 0.05848 .
Dirad                1  741668  741668  1.7015 0.20948
Vigoria              1   58813   58813  0.1349 0.71791
N_Gemme:Defogl       1   43695   43695  0.1002 0.75540
N_Gemme:Dirad        1  209923  209923  0.4816 0.49708
Defogl:Dirad         1    7392    7392  0.0170 0.89792
N_Gemme:Vigoria      1 1139052 1139052  2.6131 0.12439
Defogl:Vigoria       1  467562  467562  1.0726 0.31486
Dirad:Vigoria        1   55025   55025  0.1262 0.72674
N_Gemme:Defogl:Dirad  1  372310  372310  0.8541 0.36832
Residuals           17 7410231  435896
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


DensMostoB

Analysis of Variance Table

Response: Co_2008M[, 25]
                    Df     Sum Sq    Mean Sq F value   Pr(>F)
IASMA_1              1 0.00000458 0.00000458  0.1398 0.713134
IASMA_2              1 0.00012015 0.00012015  3.6701 0.072372 .
IASMA_3              1 0.00003080 0.00003080  0.9408 0.345676
N_Gemme              1 0.00000133 0.00000133  0.0405 0.842799
```

```
Defogl                1 0.00043275 0.00043275 13.2188 0.002044 **
Dirad                 1 0.00001022 0.00001022  0.3122 0.583605
Vigoria               1 0.00003239 0.00003239  0.9893 0.333857
N_Gemme:Defogl        1 0.00001973 0.00001973  0.6028 0.448177
N_Gemme:Dirad         1 0.00000506 0.00000506  0.1546 0.699021
Defogl:Dirad          1 0.00003673 0.00003673  1.1219 0.304337
N_Gemme:Vigoria       1 0.00000763 0.00000763  0.2331 0.635385
Defogl:Vigoria        1 0.00000980 0.00000980  0.2992 0.591469
Dirad:Vigoria         1 0.00004841 0.00004841  1.4787 0.240599
N_Gemme:Defogl:Dirad  1 0.00002985 0.00002985  0.9118 0.353020
Residuals            17 0.00055654 0.00003274
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

BrixB

```
Analysis of Variance Table

Response: Co_2008M[, 26]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IASMA_1               1  0.1582  0.1582  0.0980 0.758075
IASMA_2               1  5.8853  5.8853  3.6449 0.073268 .
IASMA_3               1  2.1995  2.1995  1.3622 0.259270
N_Gemme               1  0.0642  0.0642  0.0398 0.844290
Defogl                1 21.0253 21.0253 13.0214 0.002168 **
Dirad                 1  0.6689  0.6689  0.4143 0.528395
Vigoria               1  1.7731  1.7731  1.0981 0.309350
N_Gemme:Defogl        1  1.0356  1.0356  0.6413 0.434276
N_Gemme:Dirad         1  0.2136  0.2136  0.1323 0.720566
Defogl:Dirad          1  1.7926  1.7926  1.1102 0.306789
N_Gemme:Vigoria       1  0.2070  0.2070  0.1282 0.724690
Defogl:Vigoria        1  0.4480  0.4480  0.2774 0.605194
Dirad:Vigoria         1  2.1159  2.1159  1.3104 0.268180
N_Gemme:Defogl:Dirad  1  1.5456  1.5456  0.9572 0.341606
Residuals            17 27.4495  1.6147
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

PhB

```
Analysis of Variance Table

Response: Co_2008M[, 27]
                     Df   Sum Sq   Mean Sq F value  Pr(>F)
IASMA_1               1 0.000193 0.0001925  0.0211 0.88628
IASMA_2               1 0.003584 0.0035842  0.3924 0.53936
IASMA_3               1 0.010302 0.0103023  1.1279 0.30308
N_Gemme               1 0.010505 0.0105049  1.1501 0.29852
Defogl                1 0.004936 0.0049361  0.5404 0.47228
Dirad                 1 0.000096 0.0000959  0.0105 0.91958
Vigoria               1 0.006140 0.0061397  0.6722 0.42364
```

```
N_Gemme:Defogl         1 0.003361 0.0033609  0.3680 0.55214
N_Gemme:Dirad          1 0.000009 0.0000086  0.0009 0.97585
Defogl:Dirad           1 0.019765 0.0197648  2.1639 0.15956
N_Gemme:Vigoria        1 0.006641 0.0066408  0.7270 0.40570
Defogl:Vigoria         1 0.030709 0.0307086  3.3620 0.08428 .
Dirad:Vigoria          1 0.005201 0.0052005  0.5694 0.46084
N_Gemme:Defogl:Dirad   1 0.000039 0.0000394  0.0043 0.94840
Residuals             17 0.155278 0.0091340
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

AcTitolB

```
Analysis of Variance Table

Response: Co_2008M[, 28]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1 0.00066 0.00066  0.0048 0.94574
IASMA_2               1 0.00022 0.00022  0.0016 0.96870
IASMA_3               1 0.48397 0.48397  3.5002 0.07868 .
N_Gemme               1 0.04104 0.04104  0.2968 0.59297
Defogl                1 0.13259 0.13259  0.9590 0.34118
Dirad                 1 0.00015 0.00015  0.0011 0.97402
Vigoria               1 0.01408 0.01408  0.1018 0.75352
N_Gemme:Defogl        1 0.03843 0.03843  0.2780 0.60485
N_Gemme:Dirad         1 0.12308 0.12308  0.8902 0.35865
Defogl:Dirad          1 0.12649 0.12649  0.9148 0.35224
N_Gemme:Vigoria       1 0.31499 0.31499  2.2781 0.14957
Defogl:Vigoria        1 0.34342 0.34342  2.4837 0.13346
Dirad:Vigoria         1 0.00050 0.00050  0.0036 0.95288
N_Gemme:Defogl:Dirad  1 0.38428 0.38428  2.7792 0.11381
Residuals            17 2.35058 0.13827
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

AcTartB

```
Analysis of Variance Table

Response: Co_2008M[, 29]
                     Df  Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.11169 0.111692  2.1478 0.16103
IASMA_2               1 0.11770 0.117700  2.2633 0.15083
IASMA_3               1 0.08316 0.083163  1.5992 0.22308
N_Gemme               1 0.24101 0.241011  4.6345 0.04599 *
Defogl                1 0.00341 0.003414  0.0656 0.80086
Dirad                 1 0.05560 0.055604  1.0692 0.31561
Vigoria               1 0.20115 0.201146  3.8679 0.06576 .
N_Gemme:Defogl        1 0.00931 0.009309  0.1790 0.67753
N_Gemme:Dirad         1 0.10455 0.104548  2.0104 0.17430
Defogl:Dirad          1 0.19605 0.196054  3.7700 0.06894 .
```

```
N_Gemme:Vigoria       1 0.15188 0.151876  2.9205 0.10565
Defogl:Vigoria        1 0.01848 0.018484  0.3554 0.55891
Dirad:Vigoria         1 0.01507 0.015073  0.2898 0.59730
N_Gemme:Defogl:Dirad  1 0.29028 0.290281  5.5819 0.03033 *
Residuals            17 0.88407 0.052004
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


AcMalicoB

Analysis of Variance Table

Response: Co_2008M[, 30]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1 0.26211 0.26211  2.6290 0.12332
IASMA_2               1 0.42315 0.42315  4.2444 0.05503 .
IASMA_3               1 0.08187 0.08187  0.8212 0.37750
N_Gemme               1 0.04033 0.04033  0.4046 0.53322
Defogl                1 0.56305 0.56305  5.6477 0.02949 *
Dirad                 1 0.01181 0.01181  0.1184 0.73498
Vigoria               1 0.00051 0.00051  0.0051 0.94378
N_Gemme:Defogl        1 0.00274 0.00274  0.0275 0.87023
N_Gemme:Dirad         1 0.04154 0.04154  0.4167 0.52720
Defogl:Dirad          1 0.00797 0.00797  0.0799 0.78084
N_Gemme:Vigoria       1 0.04016 0.04016  0.4028 0.53410
Defogl:Vigoria        1 0.16149 0.16149  1.6198 0.22025
Dirad:Vigoria         1 0.06369 0.06369  0.6389 0.43515
N_Gemme:Defogl:Dirad  1 0.07842 0.07842  0.7866 0.38751
Residuals            17 1.69484 0.09970
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


KB

Analysis of Variance Table

Response: Co_2008M[, 31]
                     Df  Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.02145 0.021445  0.5686 0.46114
IASMA_2               1 0.10545 0.105448  2.7958 0.11282
IASMA_3               1 0.14583 0.145830  3.8664 0.06581 .
N_Gemme               1 0.03631 0.036309  0.9627 0.34028
Defogl                1 0.01263 0.012626  0.3347 0.57046
Dirad                 1 0.00236 0.002361  0.0626 0.80544
Vigoria               1 0.00053 0.000531  0.0141 0.90697
N_Gemme:Defogl        1 0.00131 0.001308  0.0347 0.85450
N_Gemme:Dirad         1 0.00017 0.000170  0.0045 0.94729
Defogl:Dirad          1 0.05986 0.059856  1.5870 0.22478
N_Gemme:Vigoria       1 0.03649 0.036486  0.9673 0.33914
Defogl:Vigoria        1 0.14151 0.141508  3.7518 0.06955 .
Dirad:Vigoria         1 0.00035 0.000345  0.0091 0.92492
```

```
N_Gemme:Defogl:Dirad  1 0.01033 0.010332  0.2739 0.60746
Residuals            17 0.64119 0.037717
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

ApaB

```
Analysis of Variance Table

Response: Co_2008M[, 32]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1               1  1969.5  1969.5  3.5218 0.0778408 .
IASMA_2               1    74.2    74.2  0.1327 0.7201791
IASMA_3               1 18664.8 18664.8 33.3763 2.232e-05 ***
N_Gemme               1   108.1   108.1  0.1933 0.6656917
Defogl                1 12246.0 12246.0 21.8982 0.0002154 ***
Dirad                 1  2208.8  2208.8  3.9497 0.0632357 .
Vigoria               1  8856.9  8856.9 15.8379 0.0009689 ***
N_Gemme:Defogl        1   353.7   353.7  0.6324 0.4374333
N_Gemme:Dirad         1   749.7   749.7  1.3406 0.2629300
Defogl:Dirad          1   484.4   484.4  0.8662 0.3650391
N_Gemme:Vigoria       1    24.2    24.2  0.0433 0.8375829
Defogl:Vigoria        1  5850.1  5850.1 10.4611 0.0048734 **
Dirad:Vigoria         1   429.2   429.2  0.7675 0.3932121
N_Gemme:Defogl:Dirad  1   371.4   371.4  0.6641 0.4263843
Residuals            17  9506.8   559.2
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: -0.814
```

Antoctot1B

```
Analysis of Variance Table

Response: Co_2008M[, 33]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1               1    44.6    44.6  0.0315 0.8612459
IASMA_2               1  1703.6  1703.6  1.2018 0.2882504
IASMA_3               1 13237.9 13237.9  9.3384 0.0071489 **
N_Gemme               1  2839.4  2839.4  2.0030 0.1750447
Defogl                1 11382.3 11382.3  8.0294 0.0114638 *
Dirad                 1  6775.3  6775.3  4.7795 0.0430771 *
Vigoria               1 30620.0 30620.0 21.6002 0.0002305 ***
N_Gemme:Defogl        1    98.9    98.9  0.0698 0.7948681
N_Gemme:Dirad         1   151.2   151.2  0.1067 0.7479324
Defogl:Dirad          1   471.4   471.4  0.3325 0.5717444
N_Gemme:Vigoria       1  2162.2  2162.2  1.5253 0.2336208
Defogl:Vigoria        1     0.0     0.0  0.0000 0.9974502
Dirad:Vigoria         1  5648.9  5648.9  3.9849 0.0621839 .
N_Gemme:Defogl:Dirad  1   218.6   218.6  0.1542 0.6994060
Residuals            17 24098.9  1417.6
---
```

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: 0.595

Poliftot1B

Analysis of Variance Table

Response: Co_2008M[, 34]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 26930 | 26930 | 1.1005 | 0.308848 | |
| IASMA_2 | 1 | 1063 | 1063 | 0.0434 | 0.837412 | |
| IASMA_3 | 1 | 264473 | 264473 | 10.8073 | 0.004346 | ** |
| N_Gemme | 1 | 85920 | 85920 | 3.5110 | 0.078258 | . |
| Defogl | 1 | 20458 | 20458 | 0.8360 | 0.373336 | |
| Dirad | 1 | 87679 | 87679 | 3.5829 | 0.075532 | . |
| Vigoria | 1 | 288586 | 288586 | 11.7926 | 0.003166 | ** |
| N_Gemme:Defogl | 1 | 4094 | 4094 | 0.1673 | 0.687617 | |
| N_Gemme:Dirad | 1 | 6 | 6 | 0.0002 | 0.987916 | |
| Defogl:Dirad | 1 | 14859 | 14859 | 0.6072 | 0.446566 | |
| N_Gemme:Vigoria | 1 | 39669 | 39669 | 1.6210 | 0.220087 | |
| Defogl:Vigoria | 1 | 28294 | 28294 | 1.1562 | 0.297283 | |
| Dirad:Vigoria | 1 | 31703 | 31703 | 1.2955 | 0.270821 | |
| N_Gemme:Defogl:Dirad | 1 | 6561 | 6561 | 0.2681 | 0.611276 | |
| Residuals | 17 | 416019 | 24472 | | | |

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: -0.623

Antoctot2B

Analysis of Variance Table

Response: Co_2008M[, 35]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 66 | 66 | 0.0261 | 0.873633 | |
| IASMA_2 | 1 | 5071 | 5071 | 1.9911 | 0.176267 | |
| IASMA_3 | 1 | 7268 | 7268 | 2.8535 | 0.109432 | |
| N_Gemme | 1 | 1552 | 1552 | 0.6093 | 0.445790 | |
| Defogl | 1 | 38164 | 38164 | 14.9837 | 0.001227 | ** |
| Dirad | 1 | 642 | 642 | 0.2520 | 0.622076 | |
| Vigoria | 1 | 13714 | 13714 | 5.3844 | 0.033011 | * |
| N_Gemme:Defogl | 1 | 59 | 59 | 0.0232 | 0.880821 | |
| N_Gemme:Dirad | 1 | 31 | 31 | 0.0121 | 0.913772 | |
| Defogl:Dirad | 1 | 317 | 317 | 0.1246 | 0.728487 | |
| N_Gemme:Vigoria | 1 | 503 | 503 | 0.1974 | 0.662426 | |
| Defogl:Vigoria | 1 | 776 | 776 | 0.3046 | 0.588197 | |
| Dirad:Vigoria | 1 | 2446 | 2446 | 0.9602 | 0.340880 | |
| N_Gemme:Defogl:Dirad | 1 | 1070 | 1070 | 0.4200 | 0.525614 | |
| Residuals | 17 | 43300 | 2547 | | | |

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s

IASMA_2: n.s
IASMA_3: n.s

Poliftot2B

```
Analysis of Variance Table

Response: Co_2008M[, 36]
                     Df  Sum Sq Mean Sq F value Pr(>F)
IASMA_1               1   68327   68327  0.7312 0.4044
IASMA_2               1   12863   12863  0.1376 0.7152
IASMA_3               1   85873   85873  0.9189 0.3512
N_Gemme               1   41468   41468  0.4438 0.5143
Defogl                1   14542   14542  0.1556 0.6981
Dirad                 1   27819   27819  0.2977 0.5924
Vigoria               1  274594  274594  2.9384 0.1047
N_Gemme:Defogl        1      46      46  0.0005 0.9825
N_Gemme:Dirad         1   11966   11966  0.1280 0.7249
Defogl:Dirad          1    8270    8270  0.0885 0.7697
N_Gemme:Vigoria       1  310632  310632  3.3241 0.0859 .
Defogl:Vigoria        1  167475  167475  1.7922 0.1983
Dirad:Vigoria         1   12937   12937  0.1384 0.7144
N_Gemme:Defogl:Dirad  1   19302   19302  0.2066 0.6552
Residuals            17 1588627   93449
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

CORTIGLIANO 2009M IBIMET

PvinacciaA

```
Analysis of Variance Table

Response: Co_2009M[, 11]
                Df Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1         1   1094    1094  0.0275 0.869756
IBIMET_2         1  60549   60549  1.5225 0.230254
IBIMET_3         1  20941   20941  0.5266 0.475695
N_Gemme          1  24942   24942  0.6272 0.436843
Defogl           1   6918    6918  0.1740 0.680652
Vigoria          1  10297   10297  0.2589 0.615921
N_Gemme:Defogl   1   3860    3860  0.0971 0.758307
N_Gemme:Vigoria  1 452400  452400 11.3759 0.002744 **
Defogl:Vigoria   1   8801    8801  0.2213 0.642684
Residuals       22 874902   39768
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: n.s

DensMostoA

```
Analysis of Variance Table

Response: Co_2009M[, 12]
                Df     Sum Sq    Mean Sq F value    Pr(>F)    
IBIMET_1         1 1.2551e-04 1.2551e-04 18.0497 0.0003288 ***
IBIMET_2         1 2.3401e-05 2.3401e-05  3.3652 0.0801475 .  
IBIMET_3         1 7.2092e-05 7.2092e-05 10.3673 0.0039434 ** 
N_Gemme          1 2.1700e-07 2.1700e-07  0.0313 0.8612485    
Defogl           1 3.7635e-05 3.7635e-05  5.4122 0.0296043 *  
Vigoria          1 5.0000e-09 5.0000e-09  0.0007 0.9792615    
N_Gemme:Defogl   1 7.3540e-06 7.3540e-06  1.0575 0.3149633    
N_Gemme:Vigoria  1 5.3600e-07 5.3600e-07  0.0771 0.7838114    
Defogl:Vigoria   1 3.4190e-06 3.4190e-06  0.4916 0.4905614    
Residuals       22 1.5298e-04 6.9540e-06                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.671
IBIMET_2: n.s
IBIMET_3: -0.566


BrixA

Analysis of Variance Table

Response: Co_2009M[, 13]
                Df Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_1         1 5.8621  5.8621 17.0147 0.0004447 ***
IBIMET_2         1 1.0297  1.0297  2.9888 0.0978540 .  
IBIMET_3         1 3.3450  3.3450  9.7088 0.0050344 ** 
N_Gemme          1 0.0011  0.0011  0.0031 0.9562534    
Defogl           1 2.0156  2.0156  5.8501 0.0242978 *  
Vigoria          1 0.0004  0.0004  0.0012 0.9728517    
N_Gemme:Defogl   1 0.2864  0.2864  0.8314 0.3717539    
N_Gemme:Vigoria  1 0.0157  0.0157  0.0456 0.8328922    
Defogl:Vigoria   1 0.1496  0.1496  0.4341 0.5168058    
Residuals       22 7.5797  0.3445                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.66
IBIMET_2: n.s
IBIMET_3: -0.553


PhA

Analysis of Variance Table

Response: Co_2009M[, 14]
                Df   Sum Sq  Mean Sq F value   Pr(>F)    
IBIMET_1         1 0.015873 0.015873  7.3085 0.012978 *  
IBIMET_2         1 0.020125 0.020125  9.2661 0.005954 ** 
IBIMET_3         1 0.038583 0.038583 17.7649 0.000357 ***
N_Gemme          1 0.004891 0.004891  2.2520 0.147655    
Defogl           1 0.003490 0.003490  1.6068 0.218198    
Vigoria          1 0.005205 0.005205  2.3966 0.135868    
N_Gemme:Defogl   1 0.002821 0.002821  1.2987 0.266709    
N_Gemme:Vigoria  1 0.001677 0.001677  0.7722 0.389038    
Defogl:Vigoria   1 0.000496 0.000496  0.2286 0.637299    
```

```
Residuals       22 0.047781 0.002172
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.499
IBIMET_2: 0.544
IBIMET_3: -0.668
```

AcTitolA

Analysis of Variance Table

```
Response: Co_2009M[, 15]
                Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1         1 0.71631 0.71631 14.0227 0.001122 **
IBIMET_2         1 0.07752 0.07752  1.5176 0.230987
IBIMET_3         1 0.50463 0.50463  9.8788 0.004724 **
N_Gemme          1 0.27346 0.27346  5.3533 0.030413 *
Defogl           1 0.19108 0.19108  3.7406 0.066070 .
Vigoria          1 0.09373 0.09373  1.8349 0.189296
N_Gemme:Defogl   1 0.00053 0.00053  0.0104 0.919629
N_Gemme:Vigoria  1 0.08131 0.08131  1.5916 0.220304
Defogl:Vigoria   1 0.00017 0.00017  0.0032 0.955149
Residuals       22 1.12381 0.05108
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.624
IBIMET_2: n.s
IBIMET_3: 0.557
```

AcTartA

Analysis of Variance Table

```
Response: Co_2009M[, 16]
                Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1         1 0.61468 0.61468  9.3602 0.005744 **
IBIMET_2         1 0.24217 0.24217  3.6878 0.067869 .
IBIMET_3         1 0.22297 0.22297  3.3954 0.078898 .
N_Gemme          1 0.11465 0.11465  1.7459 0.199974
Defogl           1 0.07400 0.07400  1.1269 0.299961
Vigoria          1 0.35275 0.35275  5.3717 0.030158 *
N_Gemme:Defogl   1 0.07474 0.07474  1.1381 0.297619
N_Gemme:Vigoria  1 0.18506 0.18506  2.8180 0.107362
Defogl:Vigoria   1 0.01444 0.01444  0.2200 0.643682
Residuals       22 1.44472 0.06567
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.546
IBIMET_2: n.s
IBIMET_3: n.s
```

AcMalicoA

Analysis of Variance Table

```
Response: Co_2009M[, 17]
                Df  Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_1         1 0.07492 0.07492  3.5228 0.0738562 .  
IBIMET_2         1 0.32061 0.32061 15.0743 0.0008028 ***
IBIMET_3         1 0.00429 0.00429  0.2019 0.6576259    
N_Gemme          1 0.00458 0.00458  0.2152 0.6472954    
Defogl           1 0.07605 0.07605  3.5757 0.0718742 .  
Vigoria          1 0.01291 0.01291  0.6070 0.4442306    
N_Gemme:Defogl   1 0.00348 0.00348  0.1638 0.6895779    
N_Gemme:Vigoria  1 0.00106 0.00106  0.0498 0.8253972    
Defogl:Vigoria   1 0.00003 0.00003  0.0013 0.9711348    
Residuals       22 0.46790 0.02127                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: n.s
IBIMET_2: -0.638
IBIMET_3: n.s

KA

Analysis of Variance Table

```
Response: Co_2009M[, 18]
                Df  Sum Sq  Mean Sq F value Pr(>F)  
IBIMET_1         1 0.02732 0.027317  1.3392 0.2596  
IBIMET_2         1 0.06946 0.069456  3.4051 0.0785 .
IBIMET_3         1 0.00169 0.001685  0.0826 0.7765  
N_Gemme          1 0.02793 0.027933  1.3694 0.2544  
Defogl           1 0.03611 0.036111  1.7703 0.1970  
Vigoria          1 0.01380 0.013800  0.6765 0.4196  
N_Gemme:Defogl   1 0.00271 0.002706  0.1327 0.7192  
N_Gemme:Vigoria  1 0.00092 0.000916  0.0449 0.8341  
Defogl:Vigoria   1 0.00556 0.005562  0.2727 0.6068  
Residuals       22 0.44876 0.020398                 
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: n.s

ApaA

Analysis of Variance Table

```
Response: Co_2009M[, 19]
                Df Sum Sq Mean Sq F value   Pr(>F)   
IBIMET_1         1    0.8     0.8  0.0021 0.963962   
IBIMET_2         1 4359.7  4359.7 11.0612 0.003068 **
IBIMET_3         1 1441.6  1441.6  3.6577 0.068918 . 
N_Gemme          1   93.6    93.6  0.2374 0.630913   
Defogl           1  186.6   186.6  0.4734 0.498598   
Vigoria          1   17.3    17.3  0.0440 0.835804   
N_Gemme:Defogl   1    1.9     1.9  0.0049 0.944573   
N_Gemme:Vigoria  1  454.2   454.2  1.1525 0.294662   
Defogl:Vigoria   1  649.8   649.8  1.6486 0.212507   
Residuals       22 8671.1   394.1                    
---
```

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: -0.578
IBIMET_3: n.s

Antoctot1A

Analysis of Variance Table

Response: Co_2009M[, 20]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 23338 | 23337.7 | 11.6839 | 0.002462 | ** |
| IBIMET_2 | 1 | 14793 | 14792.9 | 7.4060 | 0.012465 | * |
| IBIMET_3 | 1 | 11036 | 11036.4 | 5.5253 | 0.028119 | * |
| N_Gemme | 1 | 739 | 738.8 | 0.3699 | 0.549289 | |
| Defogl | 1 | 164 | 163.8 | 0.0820 | 0.777267 | |
| Vigoria | 1 | 651 | 650.6 | 0.3257 | 0.573988 | |
| N_Gemme:Defogl | 1 | 5910 | 5910.4 | 2.9590 | 0.099439 | . |
| N_Gemme:Vigoria | 1 | 3061 | 3060.7 | 1.5323 | 0.228811 | |
| Defogl:Vigoria | 1 | 968 | 968.1 | 0.4847 | 0.493596 | |
| Residuals | 22 | 43943 | 1997.4 | | | |

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.589
IBIMET_2: 0.502
IBIMET_3: -0.448

Poliftot1A

Analysis of Variance Table

Response: Co_2009M[, 21]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 19743 | 19742.8 | 5.7378 | 0.02555 | * |
| IBIMET_2 | 1 | 9 | 9.4 | 0.0027 | 0.95889 | |
| IBIMET_3 | 1 | 1583 | 1583.1 | 0.4601 | 0.50465 | |
| N_Gemme | 1 | 544 | 543.9 | 0.1581 | 0.69476 | |
| Defogl | 1 | 813 | 812.9 | 0.2363 | 0.63173 | |
| Vigoria | 1 | 7765 | 7764.6 | 2.2566 | 0.14726 | |
| N_Gemme:Defogl | 1 | 9526 | 9526.3 | 2.7686 | 0.11031 | |
| N_Gemme:Vigoria | 1 | 13669 | 13668.9 | 3.9725 | 0.05879 | . |
| Defogl:Vigoria | 1 | 7002 | 7002.1 | 2.0350 | 0.16775 | |
| Residuals | 22 | 75698 | 3440.8 | | | |

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.455
IBIMET_2: n.s
IBIMET_3: n.s

Antoctot2A

Analysis of Variance Table

Response: Co_2009M[, 22]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|

```
IBIMET_1         1 132180  132180 20.8191 0.0001526 ***
IBIMET_2         1  28960   28960  4.5613 0.0440812 *
IBIMET_3         1  48677   48677  7.6669 0.0111975 *
N_Gemme          1  12437   12437  1.9589 0.1755705
Defogl           1  12487   12487  1.9668 0.1747428
Vigoria          1   5985    5985  0.9427 0.3421303
N_Gemme:Defogl   1     19      19  0.0030 0.9568618
N_Gemme:Vigoria  1   5051    5051  0.7955 0.3821003
Defogl:Vigoria   1   3503    3503  0.5517 0.4654734
Residuals       22 139678    6349
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.697
IBIMET_2: 0.414
IBIMET_3: -0.508


Poliftot2A

Analysis of Variance Table

Response: Co_2009M[, 23]
                Df Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1         1 315349  315349 13.0527 0.001543 **
IBIMET_2         1    775     775  0.0321 0.859529
IBIMET_3         1  41578   41578  1.7210 0.203092
N_Gemme          1  21666   21666  0.8968 0.353933
Defogl           1 231835  231835  9.5959 0.005253 **
Vigoria          1  50500   50500  2.0903 0.162337
N_Gemme:Defogl   1  40309   40309  1.6684 0.209874
N_Gemme:Vigoria  1  66405   66405  2.7486 0.111533
Defogl:Vigoria   1  11230   11230  0.4648 0.502494
Residuals       22 531513   24160
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.61
IBIMET_2: n.s
IBIMET_3: n.s


PvinacciaB

Analysis of Variance Table

Response: Co_2009M[, 24]
                Df Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1         1 678866  678866 18.9819 0.0002524 ***
IBIMET_2         1   6983    6983  0.1953 0.6628951
IBIMET_3         1 864523  864523 24.1730 6.449e-05 ***
N_Gemme          1  32813   32813  0.9175 0.3485472
Defogl           1    448     448  0.0125 0.9118800
Vigoria          1 384774  384774 10.7587 0.0034201 **
N_Gemme:Defogl   1  85402   85402  2.3879 0.1365392
N_Gemme:Vigoria  1  79335   79335  2.2183 0.1505812
Defogl:Vigoria   1  10130   10130  0.2833 0.5999077
Residuals       22 786807   35764
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: 0.681
IBIMET_2: n.s
IBIMET_3: 0.724

DensMostoB

Analysis of Variance Table

Response: Co_2009M[, 25]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 1.0802e-04 | 1.0802e-04 | 7.8683 | 0.01032 | * |
| IBIMET_2 | 1 | 2.6780e-06 | 2.6780e-06 | 0.1951 | 0.66301 | |
| IBIMET_3 | 1 | 6.6658e-05 | 6.6658e-05 | 4.8557 | 0.03832 | * |
| N_Gemme | 1 | 1.0000e-09 | 1.0000e-09 | 0.0001 | 0.99246 | |
| Defogl | 1 | 8.3670e-06 | 8.3670e-06 | 0.6095 | 0.44329 | |
| Vigoria | 1 | 3.2756e-05 | 3.2756e-05 | 2.3861 | 0.13668 | |
| N_Gemme:Defogl | 1 | 3.2000e-07 | 3.2000e-07 | 0.0233 | 0.88004 | |
| N_Gemme:Vigoria | 1 | 5.9440e-06 | 5.9440e-06 | 0.4330 | 0.51736 | |
| Defogl:Vigoria | 1 | 7.0550e-05 | 7.0550e-05 | 5.1392 | 0.03357 | * |
| Residuals | 22 | 3.0201e-04 | 1.3728e-05 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.513
IBIMET_2: n.s
IBIMET_3: -0.425

BrixB

Analysis of Variance Table

Response: Co_2009M[, 26]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 5.4104 | 5.4104 | 8.2173 | 0.008966 | ** |
| IBIMET_2 | 1 | 0.1604 | 0.1604 | 0.2436 | 0.626516 | |
| IBIMET_3 | 1 | 3.3591 | 3.3591 | 5.1018 | 0.034154 | * |
| N_Gemme | 1 | 0.0047 | 0.0047 | 0.0071 | 0.933717 | |
| Defogl | 1 | 0.4518 | 0.4518 | 0.6862 | 0.416357 | |
| Vigoria | 1 | 1.5102 | 1.5102 | 2.2937 | 0.144133 | |
| N_Gemme:Defogl | 1 | 0.0151 | 0.0151 | 0.0229 | 0.881036 | |
| N_Gemme:Vigoria | 1 | 0.3069 | 0.3069 | 0.4662 | 0.501888 | |
| Defogl:Vigoria | 1 | 3.3328 | 3.3328 | 5.0618 | 0.034794 | * |
| Residuals | 22 | 14.4852 | 0.6584 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.521
IBIMET_2: n.s
IBIMET_3: -0.434

PhB

Analysis of Variance Table

Response: Co_2009M[, 27]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 0.078880 | 0.078880 | 21.9638 | 0.0001128 | *** |
| IBIMET_2 | 1 | 0.068707 | 0.068707 | 19.1311 | 0.0002420 | *** |

```
IBIMET_3         1 0.032983 0.032983  9.1840 0.0061438 **
N_Gemme          1 0.000013 0.000013  0.0037 0.9517901
Defogl           1 0.000004 0.000004  0.0012 0.9724956
Vigoria          1 0.075017 0.075017 20.8883 0.0001498 ***
N_Gemme:Defogl   1 0.001016 0.001016  0.2828 0.6001974
N_Gemme:Vigoria  1 0.000266 0.000266  0.0740 0.7881758
Defogl:Vigoria   1 0.007189 0.007189  2.0017 0.1711195
Residuals       22 0.079010 0.003591
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.707
IBIMET_2: -0.682
IBIMET_3: 0.543


AcTitolB

Analysis of Variance Table

Response: Co_2009M[, 28]
                Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1         1 0.27598 0.27598  4.9342 0.036933 *
IBIMET_2         1 0.28405 0.28405  5.0786 0.034524 *
IBIMET_3         1 0.48452 0.48452  8.6627 0.007519 **
N_Gemme          1 0.03666 0.03666  0.6555 0.426814
Defogl           1 0.04166 0.04166  0.7449 0.397419
Vigoria          1 0.54083 0.54083  9.6695 0.005109 **
N_Gemme:Defogl   1 0.00156 0.00156  0.0278 0.869061
N_Gemme:Vigoria  1 0.01168 0.01168  0.2089 0.652142
Defogl:Vigoria   1 0.02123 0.02123  0.3795 0.544201
Residuals       22 1.23050 0.05593
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.428
IBIMET_2: -0.433
IBIMET_3: 0.532


AcTartB

Analysis of Variance Table

Response: Co_2009M[, 29]
                Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1         1 0.33533 0.33533 11.0321 0.003100 **
IBIMET_2         1 0.26905 0.26905  8.8518 0.006984 **
IBIMET_3         1 0.34096 0.34096 11.2174 0.002902 **
N_Gemme          1 0.05082 0.05082  1.6721 0.209392
Defogl           1 0.06268 0.06268  2.0623 0.165053
Vigoria          1 0.41019 0.41019 13.4952 0.001333 **
N_Gemme:Defogl   1 0.00699 0.00699  0.2299 0.636317
N_Gemme:Vigoria  1 0.00242 0.00242  0.0796 0.780457
Defogl:Vigoria   1 0.01543 0.01543  0.5076 0.483676
Residuals       22 0.66870 0.03040
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.578
IBIMET_2: 0.536
```

IBIMET_3: -0.581

AcMalicoB

Analysis of Variance Table

```
Response: Co_2009M[, 30]
                Df  Sum Sq  Mean Sq F value   Pr(>F)
IBIMET_1         1 0.02109 0.021092  0.8027 0.379975
IBIMET_2         1 0.29941 0.299412 11.3950 0.002725 **
IBIMET_3         1 0.02994 0.029940  1.1395 0.297340
N_Gemme          1 0.02811 0.028113  1.0699 0.312196
Defogl           1 0.00764 0.007638  0.2907 0.595201
Vigoria          1 0.04922 0.049221  1.8732 0.184918
N_Gemme:Defogl   1 0.03952 0.039524  1.5042 0.232988
N_Gemme:Vigoria  1 0.01524 0.015240  0.5800 0.454398
Defogl:Vigoria   1 0.03538 0.035379  1.3465 0.258334
Residuals       22 0.57806 0.026276
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: n.s
IBIMET_2: -0.584
IBIMET_3: n.s

KB

Analysis of Variance Table

```
Response: Co_2009M[, 31]
                Df  Sum Sq  Mean Sq F value   Pr(>F)
IBIMET_1         1 0.03490 0.034895  2.0900 0.162367
IBIMET_2         1 0.14777 0.147774  8.8505 0.006988 **
IBIMET_3         1 0.03361 0.033610  2.0130 0.169973
N_Gemme          1 0.01593 0.015934  0.9544 0.339235
Defogl           1 0.00790 0.007901  0.4732 0.498712
Vigoria          1 0.08476 0.084759  5.0764 0.034559 *
N_Gemme:Defogl   1 0.03986 0.039862  2.3874 0.136581
N_Gemme:Vigoria  1 0.00116 0.001156  0.0692 0.794935
Defogl:Vigoria   1 0.00383 0.003833  0.2296 0.636579
Residuals       22 0.36733 0.016697
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: n.s
IBIMET_2: -0.536
IBIMET_3: n.s

ApaB

Analysis of Variance Table

```
Response: Co_2009M[, 32]
                Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1         1  1939.8  1939.8  9.6572 0.005133 **
IBIMET_2         1 10146.2 10146.2 50.5131 3.97e-07 ***
IBIMET_3         1   625.9   625.9  3.1159 0.091412 .
N_Gemme          1  1259.5  1259.5  6.2705 0.020185 *
```

```
Defogl           1    91.7    91.7  0.4565 0.506322
Vigoria          1  2017.2  2017.2 10.0428 0.004444 **
N_Gemme:Defogl   1   152.8   152.8  0.7607 0.392528
N_Gemme:Vigoria  1    24.9    24.9  0.1238 0.728260
Defogl:Vigoria   1   323.6   323.6  1.6112 0.217582
Residuals       22  4419.0   200.9
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: 0.552
IBIMET_2: -0.835
IBIMET_3: n.s

Antoctot1B

Analysis of Variance Table

```
Response: Co_2009M[, 33]
                Df  Sum Sq Mean Sq F value  Pr(>F)
IBIMET_1         1  4839.2  4839.2  4.2184 0.05206 .
IBIMET_2         1  5507.2  5507.2  4.8007 0.03933 *
IBIMET_3         1  1535.2  1535.2  1.3382 0.25976
N_Gemme          1  1639.1  1639.1  1.4288 0.24469
Defogl           1   789.7   789.7  0.6884 0.41563
Vigoria          1  3819.8  3819.8  3.3297 0.08165 .
N_Gemme:Defogl   1  2490.3  2490.3  2.1708 0.15482
N_Gemme:Vigoria  1   173.6   173.6  0.1513 0.70100
Defogl:Vigoria   1   226.0   226.0  0.1970 0.66149
Residuals       22 25237.9  1147.2
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: n.s
IBIMET_2: -0.423
IBIMET_3: n.s

Poliftot1B

Analysis of Variance Table

```
Response: Co_2009M[, 34]
                Df Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1         1  25236 25236.4 16.6996 0.0004884 ***
IBIMET_2         1   1752  1751.9  1.1593 0.2932795
IBIMET_3         1  29959 29958.6 19.8245 0.0001998 ***
N_Gemme          1    509   508.7  0.3366 0.5676714
Defogl           1   3066  3065.9  2.0288 0.1683762
Vigoria          1  28589 28588.8 18.9180 0.0002569 ***
N_Gemme:Defogl   1    789   788.9  0.5220 0.4775825
N_Gemme:Vigoria  1    347   346.8  0.2295 0.6366268
Defogl:Vigoria   1     18    18.5  0.0122 0.9129941
Residuals       22  33246  1511.2
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: 0.657
IBIMET_2: n.s
IBIMET_3: -0.688

Antoctot2B

```
Analysis of Variance Table

Response: Co_2009M[, 35]
                Df Sum Sq Mean Sq F value  Pr(>F)
IBIMET_1         1   8545  8545.0  1.6727 0.20931
IBIMET_2         1  22216 22216.0  4.3489 0.04885 *
IBIMET_3         1     24    23.9  0.0047 0.94606
N_Gemme          1   5083  5082.9  0.9950 0.32937
Defogl           1   5774  5774.0  1.1303 0.29924
Vigoria          1   9438  9438.0  1.8475 0.18784
N_Gemme:Defogl   1   7747  7746.9  1.5165 0.23115
N_Gemme:Vigoria  1    115   115.1  0.0225 0.88207
Defogl:Vigoria   1    612   612.0  0.1198 0.73254
Residuals       22 112385  5108.4
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: -0.406
IBIMET_3: n.s
```

Poliftot2B

```
Analysis of Variance Table

Response: Co_2009M[, 36]
                Df Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1         1  39333   39333  6.0382 0.022353 *
IBIMET_2         1  10568   10568  1.6224 0.216054
IBIMET_3         1  12103   12103  1.8579 0.186654
N_Gemme          1   4051    4051  0.6218 0.438778
Defogl           1  28470   28470  4.3706 0.048334 *
Vigoria          1  73401   73401 11.2680 0.002850 **
N_Gemme:Defogl   1   2404    2404  0.3691 0.549740
N_Gemme:Vigoria  1   2733    2733  0.4196 0.523858
Defogl:Vigoria   1      4       4  0.0006 0.980892
Residuals       22 143310    6514
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.464
IBIMET_2: n.s
IBIMET_3: n.s
```

CORTIGLIANO 2009M DIPROVE

PvinacciaA

```
Analysis of Variance Table

Response: Co_2009M[, 11]
                Df Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1        1  19522   19522  0.6371 0.4332842
DIPROVE_2        1    865     865  0.0282 0.8681294
DIPROVE_3        1   4509    4509  0.1471 0.7049568
N_Gemme          1  20139   20139  0.6573 0.4262156
```

```
Defogl           1  24247   24247  0.7913 0.3833275
Vigoria          1  84031   84031  2.7424 0.1119124
N_Gemme:Defogl   1   3886    3886  0.1268 0.7251570
N_Gemme:Vigoria  1 525795  525795 17.1598 0.0004261 ***
Defogl:Vigoria   1 107607  107607  3.5118 0.0742751 .
Residuals       22 674106   30641
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


DensMostoA

Analysis of Variance Table

Response: Co_2009M[, 12]
                Df     Sum Sq    Mean Sq F value    Pr(>F)
DIPROVE_1        1 8.1300e-07 8.1300e-07  0.1196   0.73274
DIPROVE_2        1 2.0829e-05 2.0829e-05  3.0633   0.09402 .
DIPROVE_3        1 3.0700e-07 3.0700e-07  0.0452   0.83362
N_Gemme          1 1.7500e-07 1.7500e-07  0.0257   0.87413
Defogl           1 2.0349e-04 2.0349e-04 29.9276 1.699e-05 ***
Vigoria          1 4.2420e-06 4.2420e-06  0.6238   0.43807
N_Gemme:Defogl   1 1.6736e-05 1.6736e-05  2.4613   0.13095
N_Gemme:Vigoria  1 0.0000e+00 0.0000e+00  0.0001   0.99391
Defogl:Vigoria   1 2.6969e-05 2.6969e-05  3.9663   0.05898 .
Residuals       22 1.4959e-04 6.8000e-06
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


BrixA

Analysis of Variance Table

Response: Co_2009M[, 13]
                Df Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1        1 0.0348  0.0348  0.1053   0.74864
DIPROVE_2        1 0.9674  0.9674  2.9279   0.10113
DIPROVE_3        1 0.0105  0.0105  0.0319   0.85992
N_Gemme          1 0.0005  0.0005  0.0014   0.97087
Defogl           1 9.8782  9.8782 29.8958 1.711e-05 ***
Vigoria          1 0.1406  0.1406  0.4255   0.52097
N_Gemme:Defogl   1 0.7165  0.7165  2.1683   0.15504
N_Gemme:Vigoria  1 0.0007  0.0007  0.0021   0.96349
Defogl:Vigoria   1 1.2668  1.2668  3.8340   0.06302 .
Residuals       22 7.2693  0.3304
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

PhA

```
Analysis of Variance Table

Response: Co_2009M[, 14]
                 Df   Sum Sq   Mean Sq F value   Pr(>F)
DIPROVE_1         1 0.021359 0.0213591  8.9188 0.006805 **
DIPROVE_2         1 0.020756 0.0207555  8.6667 0.007507 **
DIPROVE_3         1 0.013631 0.0136313  5.6919 0.026081 *
N_Gemme           1 0.003209 0.0032093  1.3401 0.259432
Defogl            1 0.016670 0.0166704  6.9609 0.015011 *
Vigoria           1 0.002812 0.0028122  1.1743 0.290260
N_Gemme:Defogl    1 0.004608 0.0046083  1.9242 0.179283
N_Gemme:Vigoria   1 0.005082 0.0050824  2.1222 0.159300
Defogl:Vigoria    1 0.000128 0.0001278  0.0534 0.819427
Residuals        22 0.052687 0.0023949
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: 0.537
DIPROVE_2: -0.532
DIPROVE_3: -0.453

AcTitolA

```
Analysis of Variance Table

Response: Co_2009M[, 15]
                 Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1         1 0.11603 0.11603  2.0099 0.170280
DIPROVE_2         1 0.07805 0.07805  1.3521 0.257370
DIPROVE_3         1 0.29616 0.29616  5.1304 0.033704 *
N_Gemme           1 0.21709 0.21709  3.7606 0.065406 .
Defogl            1 0.76277 0.76277 13.2132 0.001463 **
Vigoria           1 0.16138 0.16138  2.7955 0.108696
N_Gemme:Defogl    1 0.00018 0.00018  0.0031 0.955933
N_Gemme:Vigoria   1 0.15994 0.15994  2.7706 0.110188
Defogl:Vigoria    1 0.00094 0.00094  0.0163 0.899693
Residuals        22 1.27001 0.05773
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.435

AcTartA

```
Analysis of Variance Table

Response: Co_2009M[, 16]
                 Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1         1 0.06639 0.06639  1.1318 0.298932
DIPROVE_2         1 0.07373 0.07373  1.2570 0.274306
DIPROVE_3         1 0.54113 0.54113  9.2253 0.006047 **
N_Gemme           1 0.07796 0.07796  1.3291 0.261340
Defogl            1 0.44500 0.44500  7.5863 0.011573 *
Vigoria           1 0.41328 0.41328  7.0456 0.014485 *
```

```
N_Gemme:Defogl   1 0.16528 0.16528  2.8178 0.107376
N_Gemme:Vigoria  1 0.24701 0.24701  4.2111 0.052249 .
Defogl:Vigoria   1 0.01992 0.01992  0.3396 0.565986
Residuals       22 1.29047 0.05866
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.544


AcMalicoA

Analysis of Variance Table

Response: Co_2009M[, 17]
                Df  Sum Sq  Mean Sq F value   Pr(>F)
DIPROVE_1        1 0.04119 0.041189  1.7613 0.198074
DIPROVE_2        1 0.03437 0.034372  1.4698 0.238238
DIPROVE_3        1 0.06512 0.065116  2.7844 0.109356
N_Gemme          1 0.00299 0.002993  0.1280 0.723937
Defogl           1 0.24359 0.243591 10.4161 0.003873 **
Vigoria          1 0.01425 0.014246  0.6092 0.443413
N_Gemme:Defogl   1 0.01784 0.017842  0.7629 0.391849
N_Gemme:Vigoria  1 0.00011 0.000114  0.0049 0.944888
Defogl:Vigoria   1 0.03188 0.031881  1.3633 0.255473
Residuals       22 0.51449 0.023386
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


KA

Analysis of Variance Table

Response: Co_2009M[, 18]
                Df  Sum Sq   Mean Sq F value Pr(>F)
DIPROVE_1        1 0.02920 0.0292032  1.2332 0.2788
DIPROVE_2        1 0.00658 0.0065784  0.2778 0.6034
DIPROVE_3        1 0.00169 0.0016877  0.0713 0.7920
N_Gemme          1 0.02607 0.0260738  1.1010 0.3054
Defogl           1 0.01346 0.0134550  0.5682 0.4590
Vigoria          1 0.00286 0.0028594  0.1207 0.7315
N_Gemme:Defogl   1 0.00004 0.0000449  0.0019 0.9657
N_Gemme:Vigoria  1 0.00952 0.0095179  0.4019 0.5326
Defogl:Vigoria   1 0.02384 0.0238413  1.0068 0.3266
Residuals       22 0.52098 0.0236810

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


ApaA

Analysis of Variance Table
```

```
Response: Co_2009M[, 19]
                Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1        1  905.7   905.7  2.4985 0.128227
DIPROVE_2        1 2195.5  2195.5  6.0567 0.022171 *
DIPROVE_3        1 3661.2  3661.2 10.1003 0.004351 **
N_Gemme          1  250.5   250.5  0.6911 0.414714
Defogl           1  143.5   143.5  0.3958 0.535761
Vigoria          1  324.5   324.5  0.8952 0.354338
N_Gemme:Defogl   1  226.0   226.0  0.6236 0.438138
N_Gemme:Vigoria  1  179.4   179.4  0.4950 0.489080
Defogl:Vigoria   1   15.8    15.8  0.0435 0.836635
Residuals       22 7974.6   362.5
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: 0.465
DIPROVE_3: -0.561
```

Antoctot1A

Analysis of Variance Table

```
Response: Co_2009M[, 20]
                Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1        1   5867  5866.7  2.8792 0.103838
DIPROVE_2        1   3092  3091.6  1.5172 0.231043
DIPROVE_3        1  16827 16826.9  8.2580 0.008822 **
N_Gemme          1    293   293.0  0.1438 0.708162
Defogl           1   4988  4987.7  2.4478 0.131964
Vigoria          1  19690 19690.4  9.6633 0.005121 **
N_Gemme:Defogl   1   3662  3662.2  1.7973 0.193725
N_Gemme:Vigoria  1   2751  2750.9  1.3500 0.257723
Defogl:Vigoria   1   2605  2605.3  1.2786 0.270338
Residuals       22  44828  2037.6
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.522
```

Poliftot1A

Analysis of Variance Table

```
Response: Co_2009M[, 21]
                Df Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1        1   1710  1709.8  0.5081 0.48345
DIPROVE_2        1   4310  4309.9  1.2808 0.26994
DIPROVE_3        1   1340  1340.4  0.3983 0.53445
N_Gemme          1    519   519.5  0.1544 0.69817
Defogl           1  22594 22593.6  6.7143 0.01667 *
Vigoria          1   1329  1328.7  0.3949 0.53622
N_Gemme:Defogl   1  14575 14574.8  4.3313 0.04927 *
N_Gemme:Vigoria  1  14412 14412.1  4.2829 0.05044 .
Defogl:Vigoria   1   1533  1533.3  0.4556 0.50670
Residuals       22  74030  3365.0
```

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

Antoctot2A

Analysis of Variance Table

```
Response: Co_2009M[, 22]
                Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1        1  17961   17961  2.6684 0.116591
DIPROVE_2        1   4761    4761  0.7073 0.409390
DIPROVE_3        1  75172   75172 11.1681 0.002953 **
N_Gemme          1   7706    7706  1.1449 0.296220
Defogl           1  87747   87747 13.0364 0.001551 **
Vigoria          1  36397   36397  5.4075 0.029668 *
N_Gemme:Defogl   1    216     216  0.0322 0.859334
N_Gemme:Vigoria  1   6813    6813  1.0121 0.325333
Defogl:Vigoria   1   4125    4125  0.6128 0.442076
Residuals       22 148080    6731
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.58
```

Poliftot2A

Analysis of Variance Table

```
Response: Co_2009M[, 23]
                Df Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1        1  10125   10125  0.5535   0.46476
DIPROVE_2        1   5191    5191  0.2838   0.59956
DIPROVE_3        1  61643   61643  3.3700   0.07995 .
N_Gemme          1  16073   16073  0.8787   0.35874
Defogl           1 638982  638982 34.9324 6.009e-06 ***
Vigoria          1  10089   10089  0.5515   0.46555
N_Gemme:Defogl   1  10166   10166  0.5558   0.46386
N_Gemme:Vigoria  1  67695   67695  3.7008   0.06742 .
Defogl:Vigoria   1  88771   88771  4.8530   0.03837 *
Residuals       22 402424   18292
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

PvinacciaB

Analysis of Variance Table

```
Response: Co_2009M[, 24]
```

```
                Df Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1        1  41885   41885  0.9282 0.3458033    
DIPROVE_2        1 618404  618404 13.7042 0.0012443 ** 
DIPROVE_3        1 164734  164734  3.6506 0.0691684 .  
N_Gemme          1  14730   14730  0.3264 0.5735568    
Defogl           1 737758  737758 16.3491 0.0005426 ***
Vigoria          1 101045  101045  2.2392 0.1487578    
N_Gemme:Defogl   1  28852   28852  0.6394 0.4324837    
N_Gemme:Vigoria  1 126495  126495  2.8032 0.1082356    
Defogl:Vigoria   1 103422  103422  2.2919 0.1442869    
Residuals       22 992754   45125                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: 0.62
DIPROVE_3: n.s
```

DensMostoB

Analysis of Variance Table

```
Response: Co_2009M[, 25]
                Df     Sum Sq    Mean Sq F value   Pr(>F)   
DIPROVE_1        1 2.2261e-05 2.2261e-05  1.6191 0.216498   
DIPROVE_2        1 1.9079e-05 1.9079e-05  1.3877 0.251375   
DIPROVE_3        1 2.2900e-07 2.2900e-07  0.0166 0.898540   
N_Gemme          1 3.0000e-09 3.0000e-09  0.0002 0.988835   
Defogl           1 8.9019e-05 8.9019e-05  6.4748 0.018473 * 
Vigoria          1 1.3034e-04 1.3034e-04  9.4800 0.005488 **
N_Gemme:Defogl   1 3.7210e-06 3.7210e-06  0.2706 0.608094   
N_Gemme:Vigoria  1 1.6300e-07 1.6300e-07  0.0119 0.914229   
Defogl:Vigoria   1 3.0024e-05 3.0024e-05  2.1838 0.153644   
Residuals       22 3.0247e-04 1.3748e-05                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

BrixB

Analysis of Variance Table

```
Response: Co_2009M[, 26]
                Df  Sum Sq Mean Sq F value   Pr(>F)   
DIPROVE_1        1  1.1328  1.1328  1.7184 0.203415   
DIPROVE_2        1  1.0028  1.0028  1.5211 0.230467   
DIPROVE_3        1  0.0111  0.0111  0.0169 0.897896   
N_Gemme          1  0.0050  0.0050  0.0076 0.931544   
Defogl           1  4.5099  4.5099  6.8412 0.015791 * 
Vigoria          1  6.2812  6.2812  9.5281 0.005389 **
N_Gemme:Defogl   1  0.1752  0.1752  0.2658 0.611287   
N_Gemme:Vigoria  1  0.0048  0.0048  0.0073 0.932637   
Defogl:Vigoria   1  1.4107  1.4107  2.1399 0.157651   
Residuals       22 14.5031  0.6592                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

PhB

```
Analysis of Variance Table

Response: Co_2009M[, 27]
                 Df   Sum Sq  Mean Sq F value    Pr(>F)    
DIPROVE_1         1 0.067418 0.067418 19.7833 0.0002020 ***
DIPROVE_2         1 0.052646 0.052646 15.4486 0.0007145 ***
DIPROVE_3         1 0.025013 0.025013  7.3398 0.0128112 *  
N_Gemme           1 0.000012 0.000012  0.0034 0.9538532    
Defogl            1 0.040463 0.040463 11.8735 0.0023048 ** 
Vigoria           1 0.079055 0.079055 23.1980 8.225e-05 ***
N_Gemme:Defogl    1 0.000039 0.000039  0.0113 0.9161945    
N_Gemme:Vigoria   1 0.003199 0.003199  0.9387 0.3431324    
Defogl:Vigoria    1 0.000269 0.000269  0.0789 0.7814106    
Residuals        22 0.074972 0.003408                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.688
DIPROVE_2: -0.642
DIPROVE_3: 0.5
```

AcTitolB

```
Analysis of Variance Table

Response: Co_2009M[, 28]
                 Df  Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1         1 0.26535 0.26535  4.0587 0.05633 .
DIPROVE_2         1 0.26051 0.26051  3.9846 0.05844 .
DIPROVE_3         1 0.19404 0.19404  2.9680 0.09896 .
N_Gemme           1 0.02120 0.02120  0.3243 0.57481  
Defogl            1 0.24433 0.24433  3.7372 0.06619 .
Vigoria           1 0.47603 0.47603  7.2811 0.01313 *
N_Gemme:Defogl    1 0.01210 0.01210  0.1851 0.67124  
N_Gemme:Vigoria   1 0.01265 0.01265  0.1935 0.66428  
Defogl:Vigoria    1 0.00412 0.00412  0.0631 0.80403  
Residuals        22 1.43833 0.06538                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

AcTartB

```
Analysis of Variance Table

Response: Co_2009M[, 29]
                 Df  Sum Sq Mean Sq F value   Pr(>F)  
DIPROVE_1         1 0.17400 0.17400  4.9836 0.036088 *
```

```
DIPROVE_2         1 0.24939 0.24939  7.1431 0.013905 *
DIPROVE_3         1 0.19074 0.19074  5.4632 0.028924 *
N_Gemme           1 0.06934 0.06934  1.9859 0.172746
Defogl            1 0.33498 0.33498  9.5947 0.005255 **
Vigoria           1 0.30595 0.30595  8.7630 0.007230 **
N_Gemme:Defogl    1 0.03408 0.03408  0.9760 0.333925
N_Gemme:Vigoria   1 0.03388 0.03388  0.9703 0.335304
Defogl:Vigoria    1 0.00213 0.00213  0.0610 0.807204
Residuals        22 0.76810 0.03491
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.43
DIPROVE_2: 0.495
DIPROVE_3: -0.446
```

AcMalicoB

```
Analysis of Variance Table

Response: Co_2009M[, 30]
                 Df  Sum Sq  Mean Sq F value  Pr(>F)
DIPROVE_1         1 0.09524 0.095242  3.2184 0.08657 .
DIPROVE_2         1 0.00498 0.004976  0.1681 0.68574
DIPROVE_3         1 0.12963 0.129627  4.3804 0.04810 *
N_Gemme           1 0.03685 0.036847  1.2452 0.27652
Defogl            1 0.08399 0.083992  2.8383 0.10618
Vigoria           1 0.00143 0.001426  0.0482 0.82824
N_Gemme:Defogl    1 0.02811 0.028111  0.9499 0.34033
N_Gemme:Vigoria   1 0.00950 0.009503  0.3211 0.57667
Defogl:Vigoria    1 0.06287 0.062865  2.1244 0.15910
Residuals        22 0.65104 0.029593
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.407
```

KB

```
Analysis of Variance Table

Response: Co_2009M[, 31]
                 Df   Sum Sq  Mean Sq F value    Pr(>F)
DIPROVE_1         1 0.170049 0.170049 12.8130 0.0016719 **
DIPROVE_2         1 0.000435 0.000435  0.0327 0.8580600
DIPROVE_3         1 0.028496 0.028496  2.1471 0.1569846
N_Gemme           1 0.012823 0.012823  0.9662 0.3363256
Defogl            1 0.006561 0.006561  0.4944 0.4893580
Vigoria           1 0.191211 0.191211 14.4076 0.0009913 ***
N_Gemme:Defogl    1 0.003722 0.003722  0.2805 0.6016873
N_Gemme:Vigoria   1 0.010841 0.010841  0.8168 0.3759000
Defogl:Vigoria    1 0.020939 0.020939  1.5777 0.2222624
Residuals        22 0.291974 0.013272
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.607
```

```
DIPROVE_2: n.s
DIPROVE_3: n.s
```

ApaB

```
Analysis of Variance Table

Response: Co_2009M[, 32]
                Df Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1        1 5037.4  5037.4 21.2831 0.0001349 ***
DIPROVE_2        1 3624.6  3624.6 15.3138 0.0007450 ***
DIPROVE_3        1 4360.4  4360.4 18.4225 0.0002956 ***
N_Gemme          1 1528.9  1528.9  6.4597 0.0185937 *  
Defogl           1  468.4   468.4  1.9791 0.1734553    
Vigoria          1  266.5   266.5  1.1261 0.3001274    
N_Gemme:Defogl   1  439.1   439.1  1.8553 0.1869552    
N_Gemme:Vigoria  1    5.9     5.9  0.0250 0.8758966    
Defogl:Vigoria   1   62.2    62.2  0.2629 0.6132567    
Residuals       22 5207.1   236.7                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.701
DIPROVE_2: 0.641
DIPROVE_3: -0.675
```

Antoctot1B

```
Analysis of Variance Table

Response: Co_2009M[, 33]
                Df  Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1        1  5469.0  5469.0  4.9915 0.03595 *
DIPROVE_2        1   139.0   139.0  0.1269 0.72508  
DIPROVE_3        1  7077.9  7077.9  6.4599 0.01859 *
N_Gemme          1  1094.7  1094.7  0.9992 0.32838  
Defogl           1  3363.7  3363.7  3.0700 0.09368 .
Vigoria          1  1347.8  1347.8  1.2301 0.27936  
N_Gemme:Defogl   1  3000.7  3000.7  2.7387 0.11214  
N_Gemme:Vigoria  1   570.0   570.0  0.5202 0.47833  
Defogl:Vigoria   1    90.5    90.5  0.0826 0.77648  
Residuals       22 24104.6  1095.7                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.43
DIPROVE_2: n.s
DIPROVE_3: -0.476
```

Poliftot1B

```
Analysis of Variance Table

Response: Co_2009M[, 34]
                Df Sum Sq Mean Sq F value    Pr(>F)    
DIPROVE_1        1  10406   10406  7.7683   0.01074 *  
DIPROVE_2        1  30452   30452 22.7321 9.257e-05 ***
DIPROVE_3        1   3925    3925  2.9302   0.10100    
```

```
N_Gemme          1    924      924  0.6895   0.41524
Defogl           1  41470    41470 30.9571 1.361e-05 ***
Vigoria          1   2770     2770  2.0675   0.16454
N_Gemme:Defogl   1     36       36  0.0266   0.87191
N_Gemme:Vigoria  1   2238     2238  1.6708   0.20956
Defogl:Vigoria   1   1820     1820  1.3584   0.25629
Residuals       22  29471     1340
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.511
DIPROVE_2: -0.713
DIPROVE_3: n.s


Antoctot2B

Analysis of Variance Table

Response: Co_2009M[, 35]
                Df Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1        1  15176 15175.6  2.9759 0.09853 .
DIPROVE_2        1   1192  1192.5  0.2338 0.63347
DIPROVE_3        1  18704 18703.7  3.6678 0.06856 .
N_Gemme          1   3895  3895.1  0.7638 0.39157
Defogl           1   6144  6144.3  1.2049 0.28421
Vigoria          1   2756  2755.5  0.5404 0.47005
N_Gemme:Defogl   1  11812 11811.9  2.3163 0.14227
N_Gemme:Vigoria  1     15    14.7  0.0029 0.95762
Defogl:Vigoria   1     58    57.7  0.0113 0.91627
Residuals       22 112188  5099.4
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


Poliftot2B

Analysis of Variance Table

Response: Co_2009M[, 36]
                Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1        1  23261   23261  3.3169 0.082201 .
DIPROVE_2        1  33063   33063  4.7147 0.040967 *
DIPROVE_3        1   2651    2651  0.3781 0.544948
N_Gemme          1   4038    4038  0.5758 0.456000
Defogl           1  94787   94787 13.5162 0.001323 **
Vigoria          1   2545    2545  0.3629 0.553077
N_Gemme:Defogl   1   1358    1358  0.1936 0.664232
N_Gemme:Vigoria  1    194     194  0.0276 0.869542
Defogl:Vigoria   1    199     199  0.0283 0.867890
Residuals       22 154282    7013
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: -0.42
DIPROVE_3: n.s
```

CORTIGLIANO 2009M IASMA

PvinacciaA

Analysis of Variance Table

Response: Co_2009M[, 11]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 7283 | 7283 | 0.2068 | 0.653713 | |
| IASMA_2 | 1 | 85244 | 85244 | 2.4209 | 0.133994 | |
| IASMA_3 | 1 | 98601 | 98601 | 2.8003 | 0.108409 | |
| N_Gemme | 1 | 3914 | 3914 | 0.1112 | 0.741974 | |
| Defogl | 1 | 36161 | 36161 | 1.0270 | 0.321888 | |
| Vigoria | 1 | 76793 | 76793 | 2.1809 | 0.153903 | |
| N_Gemme:Defogl | 1 | 34273 | 34273 | 0.9734 | 0.334573 | |
| N_Gemme:Vigoria | 1 | 346313 | 346313 | 9.8353 | 0.004801 | ** |
| Defogl:Vigoria | 1 | 1478 | 1478 | 0.0420 | 0.839539 | |
| Residuals | 22 | 774646 | 35211 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

DensMostoA

Analysis of Variance Table

Response: Co_2009M[, 12]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 8.3646e-05 | 8.3646e-05 | 9.6413 | 0.0051638 | ** |
| IASMA_2 | 1 | 7.2100e-07 | 7.2100e-07 | 0.0831 | 0.7757964 | |
| IASMA_3 | 1 | 8.2270e-06 | 8.2270e-06 | 0.9482 | 0.3407520 | |
| N_Gemme | 1 | 4.8000e-08 | 4.8000e-08 | 0.0056 | 0.9412712 | |
| Defogl | 1 | 1.2906e-04 | 1.2906e-04 | 14.8756 | 0.0008545 | *** |
| Vigoria | 1 | 6.1000e-08 | 6.1000e-08 | 0.0071 | 0.9338256 | |
| N_Gemme:Defogl | 1 | 8.4260e-06 | 8.4260e-06 | 0.9712 | 0.3351024 | |
| N_Gemme:Vigoria | 1 | 2.0000e-09 | 2.0000e-09 | 0.0002 | 0.9891625 | |
| Defogl:Vigoria | 1 | 2.1000e-06 | 2.1000e-06 | 0.2421 | 0.6275686 | |
| Residuals | 22 | 1.9087e-04 | 8.6760e-06 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.552
IASMA_2: n.s
IASMA_3: n.s

BrixA

Analysis of Variance Table

Response: Co_2009M[, 13]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 4.0394 | 4.0394 | 9.7148 | 0.0050231 | ** |
| IASMA_2 | 1 | 0.0680 | 0.0680 | 0.1636 | 0.6898044 | |
| IASMA_3 | 1 | 0.3838 | 0.3838 | 0.9229 | 0.3471425 | |
| N_Gemme | 1 | 0.0000 | 0.0000 | 0.0001 | 0.9938434 | |

```
Defogl           1 6.2339  6.2339 14.9927 0.0008236 ***
Vigoria          1 0.0004  0.0004  0.0009 0.9759043
N_Gemme:Defogl   1 0.3360  0.3360  0.8081 0.3784087
N_Gemme:Vigoria  1 0.0009  0.0009  0.0023 0.9624307
Defogl:Vigoria   1 0.0754  0.0754  0.1812 0.6744476
Residuals       22 9.1475  0.4158
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.553
IASMA_2: n.s
IASMA_3: n.s


PhA

Analysis of Variance Table

Response: Co_2009M[, 14]
                Df   Sum Sq  Mean Sq F value    Pr(>F)
IASMA_1          1 0.066287 0.066287 27.3471 3.028e-05 ***
IASMA_2          1 0.000855 0.000855  0.3527   0.55865
IASMA_3          1 0.000011 0.000011  0.0046   0.94673
N_Gemme          1 0.004466 0.004466  1.8424   0.18843
Defogl           1 0.000001 0.000001  0.0006   0.98071
Vigoria          1 0.009936 0.009936  4.0990   0.05521 .
N_Gemme:Defogl   1 0.000403 0.000403  0.1662   0.68746
N_Gemme:Vigoria  1 0.005530 0.005530  2.2816   0.14515
Defogl:Vigoria   1 0.000128 0.000128  0.0530   0.82007
Residuals       22 0.053326 0.002424
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.744
IASMA_2: n.s
IASMA_3: n.s


AcTitolA

Analysis of Variance Table

Response: Co_2009M[, 15]
                Df  Sum Sq Mean Sq F value    Pr(>F)
IASMA_1          1 0.90077 0.90077 16.8769 0.0004633 ***
IASMA_2          1 0.00732 0.00732  0.1372 0.7146005
IASMA_3          1 0.00024 0.00024  0.0046 0.9467285
N_Gemme          1 0.27495 0.27495  5.1514 0.0333765 *
Defogl           1 0.22646 0.22646  4.2429 0.0514397 .
Vigoria          1 0.28808 0.28808  5.3974 0.0298047 *
N_Gemme:Defogl   1 0.00508 0.00508  0.0952 0.7605486
N_Gemme:Vigoria  1 0.16582 0.16582  3.1069 0.0918499 .
Defogl:Vigoria   1 0.01963 0.01963  0.3678 0.5504079
Residuals       22 1.17421 0.05337
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.659
IASMA_2: n.s
IASMA_3: n.s
```

AcTartA

Analysis of Variance Table

```
Response: Co_2009M[, 16]
                Df  Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1          1 0.93117 0.93117 15.9317 0.0006158 ***
IASMA_2          1 0.11899 0.11899  2.0358 0.1676715    
IASMA_3          1 0.01668 0.01668  0.2854 0.5985448    
N_Gemme          1 0.18894 0.18894  3.2326 0.0859231 .  
Defogl           1 0.06704 0.06704  1.1470 0.2957828    
Vigoria          1 0.34874 0.34874  5.9668 0.0230698 *  
N_Gemme:Defogl   1 0.04472 0.04472  0.7651 0.3911780    
N_Gemme:Vigoria  1 0.27357 0.27357  4.6806 0.0416365 *  
Defogl:Vigoria   1 0.06449 0.06449  1.1034 0.3049208    
Residuals       22 1.28584 0.05845                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: 0.648
IASMA_2: n.s
IASMA_3: n.s

AcMalicoA

Analysis of Variance Table

```
Response: Co_2009M[, 17]
                Df  Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1          1 0.01389 0.01389  0.6628 0.4243056    
IASMA_2          1 0.03350 0.03350  1.5981 0.2194071    
IASMA_3          1 0.01360 0.01360  0.6486 0.4292399    
N_Gemme          1 0.01752 0.01752  0.8359 0.3704954    
Defogl           1 0.40229 0.40229 19.1895 0.0002381 ***
Vigoria          1 0.01327 0.01327  0.6330 0.4347631    
N_Gemme:Defogl   1 0.00001 0.00001  0.0003 0.9871528    
N_Gemme:Vigoria  1 0.00470 0.00470  0.2244 0.6404066    
Defogl:Vigoria   1 0.00584 0.00584  0.2784 0.6030178    
Residuals       22 0.46121 0.02096                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

KA

Analysis of Variance Table

```
Response: Co_2009M[, 18]
                Df  Sum Sq  Mean Sq F value  Pr(>F)  
IASMA_1          1 0.00193 0.001930  0.0976 0.75771  
IASMA_2          1 0.02752 0.027525  1.3912 0.25079  
IASMA_3          1 0.10364 0.103636  5.2383 0.03206 *
N_Gemme          1 0.02615 0.026155  1.3220 0.26258  
Defogl           1 0.02077 0.020771  1.0498 0.31668  
Vigoria          1 0.00180 0.001801  0.0910 0.76572  
```

```
N_Gemme:Defogl    1 0.00569 0.005688  0.2875 0.59722
N_Gemme:Vigoria  1 0.01146 0.011460  0.5793 0.45468
Defogl:Vigoria   1 0.00002 0.000021  0.0011 0.97432
Residuals       22 0.43526 0.019784
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: 0.439

ApaA

Analysis of Variance Table

```
Response: Co_2009M[, 19]
                Df Sum Sq Mean Sq F value   Pr(>F)
IASMA_1          1 3456.1  3456.1  9.1710 0.006174 **
IASMA_2          1  110.1   110.1  0.2921 0.594312
IASMA_3          1   52.0    52.0  0.1380 0.713823
N_Gemme          1   48.4    48.4  0.1284 0.723492
Defogl           1 2328.0  2328.0  6.1775 0.021023 *
Vigoria          1   96.3    96.3  0.2556 0.618179
N_Gemme:Defogl   1    0.6     0.6  0.0016 0.968374
N_Gemme:Vigoria  1  527.3   527.3  1.3993 0.249475
Defogl:Vigoria   1  967.2   967.2  2.5664 0.123415
Residuals       22 8290.7   376.8
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: -0.542
IASMA_2: n.s
IASMA_3: n.s

Antoctot1A

Analysis of Variance Table

```
Response: Co_2009M[, 20]
                Df Sum Sq Mean Sq F value    Pr(>F)
IASMA_1          1  23144 23143.8 15.6366 0.0006742 ***
IASMA_2          1  12729 12728.8  8.6000 0.0077062 **
IASMA_3          1     35    35.0  0.0237 0.8791782
N_Gemme          1    159   159.0  0.1075 0.7461562
Defogl           1     19    19.1  0.0129 0.9106696
Vigoria          1  31047 31047.1 20.9764 0.0001463 ***
N_Gemme:Defogl   1    878   878.0  0.5932 0.4493814
N_Gemme:Vigoria  1   3272  3272.0  2.2106 0.1512551
Defogl:Vigoria   1    758   758.0  0.5121 0.4817566
Residuals       22  32562  1480.1
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: 0.645
IASMA_2: -0.53
IASMA_3: n.s

Poliftot1A

```
Analysis of Variance Table

Response: Co_2009M[, 21]
                Df Sum Sq Mean Sq F value  Pr(>F)  
IASMA_1          1  20174 20173.6  6.3393 0.01959 *
IASMA_2          1   4747  4747.2  1.4918 0.23487  
IASMA_3          1   9546  9545.7  2.9996 0.09728 .
N_Gemme          1    393   393.3  0.1236 0.72851  
Defogl           1   6860  6860.1  2.1557 0.15619  
Vigoria          1   8313  8313.3  2.6124 0.12028  
N_Gemme:Defogl   1   4734  4733.8  1.4875 0.23551  
N_Gemme:Vigoria  1   9424  9424.0  2.9614 0.09931 .
Defogl:Vigoria   1   2151  2150.6  0.6758 0.41985  
Residuals       22  70010  3182.3                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.473
IASMA_2: n.s
IASMA_3: n.s
```

Antoctot2A

```
Analysis of Variance Table

Response: Co_2009M[, 22]
                Df Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1          1 107721  107721 24.3307 6.203e-05 ***
IASMA_2          1  36829   36829  8.3185 0.0086122 ** 
IASMA_3          1  26331   26331  5.9473 0.0232697 *  
N_Gemme          1   5980    5980  1.3507 0.2576175    
Defogl           1  32764   32764  7.4003 0.0124941 *  
Vigoria          1  69565   69565 15.7124 0.0006586 ***
N_Gemme:Defogl   1  10971   10971  2.4779 0.1297267    
N_Gemme:Vigoria  1    961     961  0.2171 0.6458701    
Defogl:Vigoria   1    454     454  0.1024 0.7519353    
Residuals       22  97402    4427                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.725
IASMA_2: -0.524
IASMA_3: -0.461
```

Poliftot2A

```
Analysis of Variance Table

Response: Co_2009M[, 23]
                Df Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1          1 234090  234090 12.6267 0.0017804 ** 
IASMA_2          1   6337    6337  0.3418 0.5647296    
IASMA_3          1  86052   86052  4.6416 0.0424188 *  
N_Gemme          1  15916   15916  0.8585 0.3642174    
Defogl           1 410126  410126 22.1219 0.0001083 ***
Vigoria          1   7606    7606  0.4102 0.5284622    
N_Gemme:Defogl   1  96687   96687  5.2152 0.0324054 *  
N_Gemme:Vigoria  1  38852   38852  2.0956 0.1618229    
```

```
Defogl:Vigoria   1   7627    7627  0.4114 0.5278922
Residuals       22 407866   18539
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.604
IASMA_2: n.s
IASMA_3: -0.417


PvinacciaB

Analysis of Variance Table

Response: Co_2009M[, 24]
                Df  Sum Sq Mean Sq F value   Pr(>F)
IASMA_1          1  681795  681795 13.4715 0.001343 **
IASMA_2          1   56303   56303  1.1125 0.302989
IASMA_3          1  246906  246906  4.8786 0.037911 *
N_Gemme          1    7537    7537  0.1489 0.703268
Defogl           1  153140  153140  3.0259 0.095921 .
Vigoria          1  405558  405558  8.0134 0.009730 **
N_Gemme:Defogl   1  152428  152428  3.0118 0.096648 .
N_Gemme:Vigoria  1   94568   94568  1.8686 0.185448
Defogl:Vigoria   1   18417   18417  0.3639 0.552518
Residuals       22 1113426   50610
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.616
IASMA_2: n.s
IASMA_3: 0.426


DensMostoB

Analysis of Variance Table

Response: Co_2009M[, 25]
                Df     Sum Sq    Mean Sq F value   Pr(>F)
IASMA_1          1 1.2393e-04 1.2393e-04 10.4264 0.003859 **
IASMA_2          1 6.8000e-08 6.8000e-08  0.0057 0.940555
IASMA_3          1 3.4200e-07 3.4200e-07  0.0288 0.866895
N_Gemme          1 0.0000e+00 0.0000e+00  0.0000 0.997253
Defogl           1 2.8311e-05 2.8311e-05  2.3818 0.137015
Vigoria          1 5.4484e-05 5.4484e-05  4.5838 0.043608 *
N_Gemme:Defogl   1 4.9000e-08 4.9000e-08  0.0041 0.949630
N_Gemme:Vigoria  1 8.9700e-07 8.9700e-07  0.0754 0.786149
Defogl:Vigoria   1 1.2772e-04 1.2772e-04 10.7456 0.003436 **
Residuals       22 2.6150e-04 1.1886e-05
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.567
IASMA_2: n.s
IASMA_3: n.s


BrixB

Analysis of Variance Table
```

```
Response: Co_2009M[, 26]
                Df  Sum Sq Mean Sq F value   Pr(>F)
IASMA_1          1  6.0224  6.0224 10.5176 0.003733 **
IASMA_2          1  0.0008  0.0008  0.0014 0.970948
IASMA_3          1  0.0166  0.0166  0.0290 0.866446
N_Gemme          1  0.0026  0.0026  0.0046 0.946508
Defogl           1  1.4088  1.4088  2.4603 0.131027
Vigoria          1  2.8725  2.8725  5.0166 0.035535 *
N_Gemme:Defogl   1  0.0023  0.0023  0.0041 0.949690
N_Gemme:Vigoria  1  0.0461  0.0461  0.0806 0.779172
Defogl:Vigoria   1  6.0674  6.0674 10.5962 0.003627 **
Residuals       22 12.5971  0.5726
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.569
IASMA_2: n.s
IASMA_3: n.s
```

PhB

Analysis of Variance Table

```
Response: Co_2009M[, 27]
                Df   Sum Sq  Mean Sq F value    Pr(>F)
IASMA_1          1 0.146451 0.146451 48.6286 5.331e-07 ***
IASMA_2          1 0.001678 0.001678  0.5570   0.46336
IASMA_3          1 0.000244 0.000244  0.0809   0.77880
N_Gemme          1 0.000644 0.000644  0.2137   0.64844
Defogl           1 0.000093 0.000093  0.0310   0.86184
Vigoria          1 0.103964 0.103964 34.5210 6.521e-06 ***
N_Gemme:Defogl   1 0.000575 0.000575  0.1908   0.66647
N_Gemme:Vigoria  1 0.002686 0.002686  0.8920   0.35519
Defogl:Vigoria   1 0.020495 0.020495  6.8054   0.01603 *
Residuals       22 0.066256 0.003012
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.83
IASMA_2: n.s
IASMA_3: n.s
```

AcTitolB

Analysis of Variance Table

```
Response: Co_2009M[, 28]
                Df  Sum Sq Mean Sq F value   Pr(>F)
IASMA_1          1 0.79773 0.79773 13.7765 0.001215 **
IASMA_2          1 0.13370 0.13370  2.3089 0.142879
IASMA_3          1 0.00467 0.00467  0.0806 0.779163
N_Gemme          1 0.07438 0.07438  1.2844 0.269277
Defogl           1 0.00000 0.00000  0.0000 0.996498
Vigoria          1 0.51000 0.51000  8.8075 0.007106 **
N_Gemme:Defogl   1 0.01161 0.01161  0.2005 0.658691
N_Gemme:Vigoria  1 0.02300 0.02300  0.3972 0.535056
Defogl:Vigoria   1 0.09968 0.09968  1.7214 0.203038
Residuals       22 1.27392 0.05791
```

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: 0.621
IASMA_2: n.s
IASMA_3: n.s

AcTartB

Analysis of Variance Table

```
Response: Co_2009M[, 29]
                Df  Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1          1 0.75139 0.75139 28.0257 2.593e-05 ***
IASMA_2          1 0.17639 0.17639  6.5791 0.0176605 *  
IASMA_3          1 0.00000 0.00000  0.0000 0.9958560    
N_Gemme          1 0.01669 0.01669  0.6224 0.4385742    
Defogl           1 0.00773 0.00773  0.2884 0.5966234    
Vigoria          1 0.47479 0.47479 17.7089 0.0003629 ***
N_Gemme:Defogl   1 0.00121 0.00121  0.0451 0.8337964    
N_Gemme:Vigoria  1 0.06067 0.06067  2.2629 0.1467275    
Defogl:Vigoria   1 0.08387 0.08387  3.1281 0.0908203 .  
Residuals       22 0.58984 0.02681                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: 0.748
IASMA_2: -0.48
IASMA_3: n.s

AcMalicoB

Analysis of Variance Table

```
Response: Co_2009M[, 30]
                Df  Sum Sq  Mean Sq F value  Pr(>F)  
IASMA_1          1 0.01968 0.019685  0.5957 0.44843  
IASMA_2          1 0.02757 0.027574  0.8344 0.37089  
IASMA_3          1 0.01314 0.013143  0.3977 0.53476  
N_Gemme          1 0.01012 0.010124  0.3064 0.58551  
Defogl           1 0.16124 0.161242  4.8795 0.03790 *
Vigoria          1 0.03685 0.036855  1.1153 0.30239  
N_Gemme:Defogl   1 0.04816 0.048162  1.4575 0.24015  
N_Gemme:Vigoria  1 0.02585 0.025849  0.7822 0.38603  
Defogl:Vigoria   1 0.03400 0.033999  1.0289 0.32145  
Residuals       22 0.72699 0.033045                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

KB

Analysis of Variance Table

```
Response: Co_2009M[, 31]
```

```
                Df   Sum Sq  Mean Sq F value    Pr(>F)    
IASMA_1          1 0.084549 0.084549  6.9756 0.0149181 *  
IASMA_2          1 0.000049 0.000049  0.0040 0.9499814    
IASMA_3          1 0.024953 0.024953  2.0588 0.1653971    
N_Gemme          1 0.023668 0.023668  1.9527 0.1762308    
Defogl           1 0.008062 0.008062  0.6651 0.4234903    
Vigoria          1 0.249492 0.249492 20.5842 0.0001625 ***
N_Gemme:Defogl   1 0.026257 0.026257  2.1664 0.1552220    
N_Gemme:Vigoria  1 0.009553 0.009553  0.7882 0.3842614    
Defogl:Vigoria   1 0.043813 0.043813  3.6148 0.0704469 .  
Residuals       22 0.266653 0.012121                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.491
IASMA_2: n.s
IASMA_3: n.s


ApaB

Analysis of Variance Table

Response: Co_2009M[, 32]
                Df Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1          1 7329.9  7329.9 26.9130 3.347e-05 ***
IASMA_2          1  234.5   234.5  0.8612 0.3634846    
IASMA_3          1   28.8    28.8  0.1059 0.7479187    
N_Gemme          1  784.6   784.6  2.8809 0.1037394    
Defogl           1 1295.1  1295.1  4.7551 0.0401892 *  
Vigoria          1 4715.4  4715.4 17.3134 0.0004073 ***
N_Gemme:Defogl   1   67.1    67.1  0.2465 0.6244699    
N_Gemme:Vigoria  1   33.1    33.1  0.1216 0.7306260    
Defogl:Vigoria   1  520.3   520.3  1.9102 0.1808120    
Residuals       22 5991.8   272.4                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.742
IASMA_2: n.s
IASMA_3: n.s


Antoctot1B

Analysis of Variance Table

Response: Co_2009M[, 33]
                Df  Sum Sq Mean Sq F value  Pr(>F)  
IASMA_1          1  5478.8  5478.8  4.7129 0.04100 *
IASMA_2          1   722.0   722.0  0.6211 0.43906  
IASMA_3          1  1048.2  1048.2  0.9016 0.35266  
N_Gemme          1  2390.2  2390.2  2.0560 0.16567  
Defogl           1   162.4   162.4  0.1397 0.71217  
Vigoria          1  7928.1  7928.1  6.8197 0.01594 *
N_Gemme:Defogl   1  2419.6  2419.6  2.0814 0.16319  
N_Gemme:Vigoria  1   394.7   394.7  0.3395 0.56602  
Defogl:Vigoria   1   138.4   138.4  0.1190 0.73335  
Residuals       22 25575.6  1162.5                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
IASMA_1: 0.42
IASMA_2: n.s
IASMA_3: n.s
```

Poliftot1B

Analysis of Variance Table

```
Response: Co_2009M[, 34]
                 Df Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1           1  47204   47204 25.6948 4.458e-05 ***
IASMA_2           1    933     933  0.5079  0.483540    
IASMA_3           1    494     494  0.2686  0.609418    
N_Gemme           1    967     967  0.5266  0.475678    
Defogl            1   6022    6022  3.2779  0.083901 .  
Vigoria           1  20733   20733 11.2857  0.002832 ** 
N_Gemme:Defogl    1   4153    4153  2.2608  0.146903    
N_Gemme:Vigoria   1   2087    2087  1.1360  0.298052    
Defogl:Vigoria    1    501     501  0.2728  0.606668    
Residuals        22  40416    1837                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.734
IASMA_2: n.s
IASMA_3: n.s
```

Antoctot2B

Analysis of Variance Table

```
Response: Co_2009M[, 35]
                 Df Sum Sq Mean Sq F value  Pr(>F)  
IASMA_1           1  10141 10141.1  1.8789 0.18429  
IASMA_2           1   8357  8356.7  1.5483 0.22649  
IASMA_3           1     10    10.4  0.0019 0.96542  
N_Gemme           1  10411 10411.5  1.9290 0.17877  
Defogl            1    274   274.4  0.0508 0.82368  
Vigoria           1  17444 17443.6  3.2318 0.08596 .
N_Gemme:Defogl    1   5542  5542.3  1.0268 0.32192  
N_Gemme:Vigoria   1     56    55.9  0.0104 0.91988  
Defogl:Vigoria    1    958   958.3  0.1775 0.67758  
Residuals        22 118745  5397.5                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

Poliftot2B

Analysis of Variance Table

```
Response: Co_2009M[, 36]
                 Df Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1           1  97177   97177 15.4889 0.0007056 ***
```

```
IASMA_2          1   3640    3640  0.5803 0.4543023
IASMA_3          1  18256   18256  2.9099 0.1021200
N_Gemme          1   1417    1417  0.2258 0.6393373
Defogl           1  16868   16868  2.6886 0.1152922
Vigoria          1  28753   28753  4.5828 0.0436283 *
N_Gemme:Defogl   1   6937    6937  1.1057 0.3044304
N_Gemme:Vigoria  1    149     149  0.0237 0.8789478
Defogl:Vigoria   1   5152    5152  0.8212 0.3746359
Residuals       22 138027    6274
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: -0.643
IASMA_2: n.s
IASMA_3: n.s

DONNA OLIMPIA 2008M IBIMET

PvinacciaA

Analysis of Variance Table

```
Response: Do_2008M[, 11]
                     Df Sum Sq Mean Sq F value   Pr(>F)
IBIMET_2              1  27952   27952  0.7142 0.417827
IBIMET_3              1      0       0  0.0000 0.997415
N_Gemme               1  27895   27895  0.7127 0.418287
Defogl                1 480983  480983 12.2886 0.005674 **
Dirad                 1 168157  168157  4.2963 0.064984 .
Vigoria               1   6411    6411  0.1638 0.694199
N_Gemme:Defogl        1  18193   18193  0.4648 0.510865
N_Gemme:Dirad         1   6436    6436  0.1644 0.693643
Defogl:Dirad          1 217402  217402  5.5544 0.040173 *
N_Gemme:Vigoria       1   3324    3324  0.0849 0.776692
Defogl:Vigoria        1  56533   56533  1.4444 0.257123
Dirad:Vigoria         1 168679  168679  4.3096 0.064635 .
N_Gemme:Defogl:Dirad  1   2344    2344  0.0599 0.811641
Residuals            10 391404   39140
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: n.s
IBIMET_3: n.s

DensMostoA

Analysis of Variance Table

```
Response: Do_2008M[, 12]
                     Df     Sum Sq    Mean Sq F value   Pr(>F)
IBIMET_2              1 1.0300e-07 1.0300e-07  0.0473 0.832258
IBIMET_3              1 1.2900e-07 1.2900e-07  0.0593 0.812520
N_Gemme               1 3.6400e-06 3.6400e-06  1.6717 0.225102
Defogl                1 3.1859e-05 3.1859e-05 14.6296 0.003347 **
Dirad                 1 2.6202e-05 2.6202e-05 12.0319 0.006034 **
Vigoria               1 1.6926e-05 1.6926e-05  7.7723 0.019189 *
N_Gemme:Defogl        1 6.7650e-06 6.7650e-06  3.1064 0.108464
N_Gemme:Dirad         1 1.2000e-07 1.2000e-07  0.0552 0.819038
Defogl:Dirad          1 4.8840e-06 4.8840e-06  2.2426 0.165136
```

```
N_Gemme:Vigoria       1 2.8900e-07 2.8900e-07  0.1328 0.723104
Defogl:Vigoria        1 8.5500e-07 8.5500e-07  0.3925 0.545002
Dirad:Vigoria         1 7.1740e-06 7.1740e-06  3.2942 0.099587 .
N_Gemme:Defogl:Dirad  1 1.8000e-08 1.8000e-08  0.0081 0.929926
Residuals            10 2.1777e-05 2.1780e-06
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


BrixA

Analysis of Variance Table

Response: Do_2008M[, 13]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_2              1 0.01871 0.01871  0.1618 0.695957
IBIMET_3              1 0.00551 0.00551  0.0477 0.831575
N_Gemme               1 0.13172 0.13172  1.1392 0.310921
Defogl                1 1.73259 1.73259 14.9843 0.003104 **
Dirad                 1 1.24064 1.24064 10.7296 0.008351 **
Vigoria               1 0.74279 0.74279  6.4240 0.029638 *
N_Gemme:Defogl        1 0.41042 0.41042  3.5495 0.088934 .
N_Gemme:Dirad         1 0.01215 0.01215  0.1051 0.752454
Defogl:Dirad          1 0.33307 0.33307  2.8805 0.120506
N_Gemme:Vigoria       1 0.00862 0.00862  0.0746 0.790370
Defogl:Vigoria        1 0.04528 0.04528  0.3916 0.545484
Dirad:Vigoria         1 0.30514 0.30514  2.6390 0.135330
N_Gemme:Defogl:Dirad  1 0.00028 0.00028  0.0024 0.961780
Residuals            10 1.15627 0.11563
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


PhA

Analysis of Variance Table

Response: Do_2008M[, 14]
                     Df   Sum Sq   Mean Sq F value  Pr(>F)
IBIMET_2              1 0.009708 0.0097081  1.4912 0.25005
IBIMET_3              1 0.002458 0.0024575  0.3775 0.55268
N_Gemme               1 0.001409 0.0014092  0.2164 0.65173
Defogl                1 0.013909 0.0139093  2.1364 0.17454
Dirad                 1 0.024951 0.0249513  3.8325 0.07874 .
Vigoria               1 0.001867 0.0018675  0.2868 0.60396
N_Gemme:Defogl        1 0.010911 0.0109113  1.6760 0.22455
N_Gemme:Dirad         1 0.016088 0.0160875  2.4710 0.14704
Defogl:Dirad          1 0.000919 0.0009186  0.1411 0.71504
N_Gemme:Vigoria       1 0.000499 0.0004985  0.0766 0.78763
Defogl:Vigoria        1 0.000521 0.0005206  0.0800 0.78312
Dirad:Vigoria         1 0.001484 0.0014845  0.2280 0.64326
N_Gemme:Defogl:Dirad  1 0.002070 0.0020704  0.3180 0.58523
Residuals            10 0.065105 0.0065105
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: n.s
IBIMET_3: n.s

AcTitolA

Analysis of Variance Table

Response: Do_2008M[, 15]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 0.21171 | 0.21171 | 4.2334 | 0.0666638 | . |
| IBIMET_3 | 1 | 0.11610 | 0.11610 | 2.3214 | 0.1585817 | |
| N_Gemme | 1 | 0.00305 | 0.00305 | 0.0611 | 0.8098155 | |
| Defogl | 1 | 1.29843 | 1.29843 | 25.9629 | 0.0004672 | *** |
| Dirad | 1 | 0.23402 | 0.23402 | 4.6793 | 0.0558095 | . |
| Vigoria | 1 | 0.09877 | 0.09877 | 1.9749 | 0.1902254 | |
| N_Gemme:Defogl | 1 | 0.16008 | 0.16008 | 3.2009 | 0.1038784 | |
| N_Gemme:Dirad | 1 | 0.01187 | 0.01187 | 0.2374 | 0.6366016 | |
| Defogl:Dirad | 1 | 0.01769 | 0.01769 | 0.3538 | 0.5651833 | |
| N_Gemme:Vigoria | 1 | 0.00043 | 0.00043 | 0.0085 | 0.9283141 | |
| Defogl:Vigoria | 1 | 0.02744 | 0.02744 | 0.5487 | 0.4758832 | |
| Dirad:Vigoria | 1 | 0.11361 | 0.11361 | 2.2717 | 0.1626811 | |
| N_Gemme:Defogl:Dirad | 1 | 0.01503 | 0.01503 | 0.3006 | 0.5955295 | |
| Residuals | 10 | 0.50011 | 0.05001 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s

AcTartA

Analysis of Variance Table

Response: Do_2008M[, 16]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 0.50754 | 0.50754 | 15.4606 | 0.002811 | ** |
| IBIMET_3 | 1 | 0.02156 | 0.02156 | 0.6569 | 0.436531 | |
| N_Gemme | 1 | 0.08802 | 0.08802 | 2.6812 | 0.132583 | |
| Defogl | 1 | 0.87752 | 0.87752 | 26.7308 | 0.000419 | *** |
| Dirad | 1 | 0.01603 | 0.01603 | 0.4882 | 0.500642 | |
| Vigoria | 1 | 0.04712 | 0.04712 | 1.4353 | 0.258526 | |
| N_Gemme:Defogl | 1 | 0.02142 | 0.02142 | 0.6526 | 0.437984 | |
| N_Gemme:Dirad | 1 | 0.00156 | 0.00156 | 0.0475 | 0.831775 | |
| Defogl:Dirad | 1 | 0.00028 | 0.00028 | 0.0086 | 0.927794 | |
| N_Gemme:Vigoria | 1 | 0.00251 | 0.00251 | 0.0763 | 0.787945 | |
| Defogl:Vigoria | 1 | 0.02232 | 0.02232 | 0.6800 | 0.428817 | |
| Dirad:Vigoria | 1 | 0.03400 | 0.03400 | 1.0358 | 0.332801 | |
| N_Gemme:Defogl:Dirad | 1 | 0.01348 | 0.01348 | 0.4108 | 0.535997 | |
| Residuals | 10 | 0.32828 | 0.03283 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: -0.779
IBIMET_3: n.s

AcMalicoA

```
Analysis of Variance Table

Response: Do_2008M[, 17]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_2             1 0.19008 0.19008 10.9883 0.0078149 ** 
IBIMET_3             1 0.40492 0.40492 23.4078 0.0006834 ***
N_Gemme              1 0.04912 0.04912  2.8394 0.1228830    
Defogl               1 0.13388 0.13388  7.7393 0.0193855 *  
Dirad                1 0.04576 0.04576  2.6453 0.1349164    
Vigoria              1 0.08733 0.08733  5.0483 0.0484391 *  
N_Gemme:Defogl       1 0.00504 0.00504  0.2912 0.6012619    
N_Gemme:Dirad        1 0.12347 0.12347  7.1376 0.0234267 *  
Defogl:Dirad         1 0.02916 0.02916  1.6855 0.2233374    
N_Gemme:Vigoria      1 0.05880 0.05880  3.3989 0.0950361 .  
Defogl:Vigoria       1 0.01171 0.01171  0.6772 0.4297496    
Dirad:Vigoria        1 0.05251 0.05251  3.0353 0.1120857    
N_Gemme:Defogl:Dirad  1 0.01507 0.01507  0.8713 0.3725884    
Residuals           10 0.17299 0.01730                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.724
IBIMET_3: 0.837
```

KA

```
Analysis of Variance Table

Response: Do_2008M[, 18]
                    Df  Sum Sq  Mean Sq F value Pr(>F)
IBIMET_2             1 0.08294 0.082936  2.1552 0.1728
IBIMET_3             1 0.06274 0.062742  1.6305 0.2305
N_Gemme              1 0.00700 0.007000  0.1819 0.6788
Defogl               1 0.01438 0.014380  0.3737 0.5546
Dirad                1 0.04970 0.049705  1.2917 0.2822
Vigoria              1 0.00157 0.001574  0.0409 0.8438
N_Gemme:Defogl       1 0.02068 0.020678  0.5373 0.4804
N_Gemme:Dirad        1 0.10407 0.104072  2.7045 0.1311
Defogl:Dirad         1 0.00687 0.006870  0.1785 0.6816
N_Gemme:Vigoria      1 0.00105 0.001050  0.0273 0.8721
Defogl:Vigoria       1 0.00597 0.005965  0.1550 0.7021
Dirad:Vigoria        1 0.00049 0.000487  0.0126 0.9127
N_Gemme:Defogl:Dirad  1 0.00397 0.003965  0.1030 0.7548
Residuals           10 0.38481 0.038481               

IBIMET_2: n.s
IBIMET_3: n.s
```

ApaA

```
Analysis of Variance Table

Response: Do_2008M[, 19]
                    Df  Sum Sq Mean Sq F value  Pr(>F)  
IBIMET_2             1   55.51   55.51  0.2362 0.63742  
IBIMET_3             1   73.83   73.83  0.3141 0.58748  
N_Gemme              1   36.33   36.33  0.1546 0.70244  
Defogl               1  927.35  927.35  3.9460 0.07506 .
Dirad                1  167.74  167.74  0.7138 0.41795  
```

```
Vigoria              1   27.22   27.22  0.1158 0.74064
N_Gemme:Defogl       1   40.50   40.50  0.1724 0.68679
N_Gemme:Dirad        1  218.83  218.83  0.9312 0.35732
Defogl:Dirad         1    8.86    8.86  0.0377 0.84990
N_Gemme:Vigoria      1   34.65   34.65  0.1474 0.70905
Defogl:Vigoria       1   34.72   34.72  0.1478 0.70873
Dirad:Vigoria        1    6.09    6.09  0.0259 0.87535
N_Gemme:Defogl:Dirad  1  224.93  224.93  0.9571 0.35098
Residuals           10 2350.06  235.01
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: n.s
IBIMET_3: n.s

Antoctot1A

Analysis of Variance Table

```
Response: Do_2008M[, 20]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2             1  16297   16297  1.6063 0.23374
IBIMET_3             1   1818    1818  0.1792 0.68099
N_Gemme              1    263     263  0.0260 0.87521
Defogl               1  27577   27577  2.7181 0.13023
Dirad                1  86976   86976  8.5727 0.01509 *
Vigoria              1  14014   14014  1.3813 0.26711
N_Gemme:Defogl       1   4715    4715  0.4647 0.51091
N_Gemme:Dirad        1    800     800  0.0789 0.78453
Defogl:Dirad         1    786     786  0.0775 0.78637
N_Gemme:Vigoria      1  22555   22555  2.2232 0.16681
Defogl:Vigoria       1   2068    2068  0.2038 0.66127
Dirad:Vigoria        1  17313   17313  1.7065 0.22069
N_Gemme:Defogl:Dirad  1   2058    2058  0.2028 0.66208
Residuals           10 101457   10146
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: n.s
IBIMET_3: n.s

Poliftot1A

Analysis of Variance Table

```
Response: Do_2008M[, 21]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2             1   4568    4568  0.0784 0.78519
IBIMET_3             1  27615   27615  0.4739 0.50684
N_Gemme              1  15415   15415  0.2646 0.61818
Defogl               1   1238    1238  0.0213 0.88698
Dirad                1 259055  259055  4.4459 0.06119 .
Vigoria              1  47610   47610  0.8171 0.38729
N_Gemme:Defogl       1  54793   54793  0.9404 0.35505
N_Gemme:Dirad        1   8905    8905  0.1528 0.70404
Defogl:Dirad         1  16166   16166  0.2774 0.60987
N_Gemme:Vigoria      1 136374  136374  2.3405 0.15705
Defogl:Vigoria       1  10169   10169  0.1745 0.68495
Dirad:Vigoria        1   1788    1788  0.0307 0.86444
```

```
N_Gemme:Defogl:Dirad  1    619     619  0.0106 0.91994
Residuals            10 582681   58268
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s
```

Antoctot2A

```
Analysis of Variance Table

Response: Do_2008M[, 22]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2              1   4391    4391  0.5097 0.49158
IBIMET_3              1    389     389  0.0451 0.83603
N_Gemme               1    879     879  0.1020 0.75599
Defogl                1  42316   42316  4.9121 0.05101 .
Dirad                 1  54251   54251  6.2975 0.03094 *
Vigoria               1   4190    4190  0.4864 0.50143
N_Gemme:Defogl        1   6727    6727  0.7809 0.39762
N_Gemme:Dirad         1     94      94  0.0109 0.91903
Defogl:Dirad          1    625     625  0.0726 0.79310
N_Gemme:Vigoria       1  12671   12671  1.4709 0.25308
Defogl:Vigoria        1     15      15  0.0018 0.96741
Dirad:Vigoria         1   8553    8553  0.9928 0.34255
N_Gemme:Defogl:Dirad  1   1759    1759  0.2042 0.66100
Residuals            10  86148    8615
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s
```

Poliftot2A

```
Analysis of Variance Table

Response: Do_2008M[, 23]
                     Df Sum Sq Mean Sq F value Pr(>F)
IBIMET_2              1   7498    7498  0.1033 0.7546
IBIMET_3              1  60234   60234  0.8296 0.3838
N_Gemme               1  27663   27663  0.3810 0.5509
Defogl                1   9627    9627  0.1326 0.7233
Dirad                 1 144789  144789  1.9941 0.1883
Vigoria               1  25176   25176  0.3467 0.5690
N_Gemme:Defogl        1  63652   63652  0.8767 0.3712
N_Gemme:Dirad         1   6656    6656  0.0917 0.7683
Defogl:Dirad          1  26055   26055  0.3588 0.5625
N_Gemme:Vigoria       1 121660  121660  1.6756 0.2246
Defogl:Vigoria        1  55248   55248  0.7609 0.4035
Dirad:Vigoria         1   6285    6285  0.0866 0.7746
N_Gemme:Defogl:Dirad  1    129     129  0.0018 0.9672
Residuals            10 726085   72608

IBIMET_2: n.s
IBIMET_3: n.s
```

PvinacciaB

Analysis of Variance Table

```
Response: Do_2008M[, 24]
                     Df Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_2              1  11390   11390  1.7401 0.2165368    
IBIMET_3              1  87869   87869 13.4238 0.0043612 ** 
N_Gemme               1  59820   59820  9.1388 0.0128286 *  
Defogl                1 101262  101262 15.4698 0.0028058 ** 
Dirad                 1 161314  161314 24.6441 0.0005664 ***
Vigoria               1  14455   14455  2.2083 0.1681048    
N_Gemme:Defogl        1   3095    3095  0.4729 0.5072983    
N_Gemme:Dirad         1   4744    4744  0.7247 0.4145327    
Defogl:Dirad          1  19742   19742  3.0159 0.1130965    
N_Gemme:Vigoria       1  22104   22104  3.3768 0.0959750 .  
Defogl:Vigoria        1  12886   12886  1.9687 0.1908689    
Dirad:Vigoria         1   8396    8396  1.2827 0.2838293    
N_Gemme:Defogl:Dirad  1    509     509  0.0778 0.7859673    
Residuals            10  65458    6546                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: -0.757
```

DensMostoB

Analysis of Variance Table

```
Response: Do_2008M[, 25]
                     Df     Sum Sq    Mean Sq F value  Pr(>F)  
IBIMET_2              1 8.0480e-07 8.0480e-07  0.2545 0.62484  
IBIMET_3              1 8.9923e-06 8.9923e-06  2.8437 0.12263  
N_Gemme               1 1.0000e-10 1.0000e-10  0.0000 0.99481  
Defogl                1 1.4383e-05 1.4383e-05  4.5486 0.05875 .
Dirad                 1 4.8935e-06 4.8935e-06  1.5475 0.24187  
Vigoria               1 2.2351e-06 2.2351e-06  0.7068 0.42015  
N_Gemme:Defogl        1 3.0442e-06 3.0442e-06  0.9627 0.34965  
N_Gemme:Dirad         1 3.2731e-06 3.2731e-06  1.0351 0.33295  
Defogl:Dirad          1 7.2400e-08 7.2400e-08  0.0229 0.88278  
N_Gemme:Vigoria       1 1.9443e-06 1.9443e-06  0.6149 0.45114  
Defogl:Vigoria        1 7.0762e-06 7.0762e-06  2.2378 0.16555  
Dirad:Vigoria         1 9.5220e-07 9.5220e-07  0.3011 0.59523  
N_Gemme:Defogl:Dirad  1 1.0403e-06 1.0403e-06  0.3290 0.57893  
Residuals            10 3.1622e-05 3.1622e-06                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s
```

BrixB

Analysis of Variance Table

```
Response: Do_2008M[, 26]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IBIMET_2              1 0.00378 0.00378  0.0316 0.86237
```

```
IBIMET_3              1 0.50657 0.50657  4.2417 0.06644 .
N_Gemme               1 0.04826 0.04826  0.4041 0.53923
Defogl                1 0.69318 0.69318  5.8042 0.03673 *
Dirad                 1 0.30494 0.30494  2.5534 0.14114
Vigoria               1 0.12041 0.12041  1.0082 0.33901
N_Gemme:Defogl        1 0.14328 0.14328  1.1997 0.29905
N_Gemme:Dirad         1 0.06705 0.06705  0.5614 0.47094
Defogl:Dirad          1 0.00434 0.00434  0.0364 0.85259
N_Gemme:Vigoria       1 0.11980 0.11980  1.0031 0.34018
Defogl:Vigoria        1 0.17495 0.17495  1.4650 0.25398
Dirad:Vigoria         1 0.02007 0.02007  0.1680 0.69051
N_Gemme:Defogl:Dirad  1 0.04415 0.04415  0.3696 0.55675
Residuals            10 1.19426 0.11943
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


PhB

Analysis of Variance Table

Response: Do_2008M[, 27]
                     Df   Sum Sq   Mean Sq F value  Pr(>F)
IBIMET_2              1 0.001977 0.0019766  0.5720 0.46690
IBIMET_3              1 0.001466 0.0014659  0.4242 0.52952
N_Gemme               1 0.000310 0.0003102  0.0898 0.77062
Defogl                1 0.006966 0.0069660  2.0159 0.18607
Dirad                 1 0.000887 0.0008866  0.2566 0.62347
Vigoria               1 0.018191 0.0181908  5.2643 0.04468 *
N_Gemme:Defogl        1 0.016813 0.0168134  4.8657 0.05193 .
N_Gemme:Dirad         1 0.000178 0.0001779  0.0515 0.82509
Defogl:Dirad          1 0.000482 0.0004817  0.1394 0.71667
N_Gemme:Vigoria       1 0.011325 0.0113246  3.2772 0.10035
Defogl:Vigoria        1 0.000718 0.0007178  0.2077 0.65828
Dirad:Vigoria         1 0.015468 0.0154676  4.4762 0.06046 .
N_Gemme:Defogl:Dirad  1 0.003590 0.0035898  1.0389 0.33211
Residuals            10 0.034555 0.0034555
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


AcTitolB

Analysis of Variance Table

Response: Do_2008M[, 28]
                     Df  Sum Sq  Mean Sq F value  Pr(>F)
IBIMET_2              1 0.08723 0.087227  2.3978 0.15255
IBIMET_3              1 0.26244 0.262443  7.2143 0.02286 *
N_Gemme               1 0.00099 0.000987  0.0271 0.87242
Defogl                1 0.12710 0.127095  3.4937 0.09113 .
Dirad                 1 0.06936 0.069362  1.9067 0.19741
Vigoria               1 0.14332 0.143317  3.9397 0.07526 .
N_Gemme:Defogl        1 0.00015 0.000149  0.0041 0.95016
N_Gemme:Dirad         1 0.07649 0.076490  2.1026 0.17768
```

```
Defogl:Dirad          1 0.00273 0.002734  0.0752 0.78954
N_Gemme:Vigoria       1 0.03603 0.036029  0.9904 0.34311
Defogl:Vigoria        1 0.00585 0.005847  0.1607 0.69691
Dirad:Vigoria         1 0.10309 0.103087  2.8338 0.12321
N_Gemme:Defogl:Dirad  1 0.00978 0.009784  0.2690 0.61532
Residuals            10 0.36378 0.036378
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: 0.647


AcTartB

Analysis of Variance Table

Response: Do_2008M[, 29]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
IBIMET_2              1 0.050780 0.050780  1.9394 0.19392
IBIMET_3              1 0.022426 0.022426  0.8565 0.37652
N_Gemme               1 0.019193 0.019193  0.7330 0.41196
Defogl                1 0.087575 0.087575  3.3446 0.09736 .
Dirad                 1 0.019329 0.019329  0.7382 0.41036
Vigoria               1 0.000069 0.000069  0.0026 0.96020
N_Gemme:Defogl        1 0.000436 0.000436  0.0167 0.89985
N_Gemme:Dirad         1 0.066662 0.066662  2.5459 0.14166
Defogl:Dirad          1 0.001328 0.001328  0.0507 0.82634
N_Gemme:Vigoria       1 0.003370 0.003370  0.1287 0.72722
Defogl:Vigoria        1 0.007489 0.007489  0.2860 0.60448
Dirad:Vigoria         1 0.119986 0.119986  4.5824 0.05797 .
N_Gemme:Defogl:Dirad  1 0.003218 0.003218  0.1229 0.73317
Residuals            10 0.261838 0.026184
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s


AcMalicoB

Analysis of Variance Table

Response: Do_2008M[, 30]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IBIMET_2              1 0.62800 0.62800 21.3216 0.0009542 ***
IBIMET_3              1 0.85210 0.85210 28.9303 0.0003107 ***
N_Gemme               1 0.14580 0.14580  4.9501 0.0502777 .
Defogl                1 0.02908 0.02908  0.9874 0.3438255
Dirad                 1 0.00838 0.00838  0.2845 0.6054410
Vigoria               1 0.01792 0.01792  0.6083 0.4534991
N_Gemme:Defogl        1 0.05430 0.05430  1.8436 0.2043816
N_Gemme:Dirad         1 0.02935 0.02935  0.9966 0.3416842
Defogl:Dirad          1 0.00060 0.00060  0.0205 0.8890352
N_Gemme:Vigoria       1 0.01214 0.01214  0.4123 0.5352461
Defogl:Vigoria        1 0.00440 0.00440  0.1495 0.7071588
Dirad:Vigoria         1 0.25530 0.25530  8.6678 0.0146819 *
N_Gemme:Defogl:Dirad  1 0.05841 0.05841  1.9831 0.1893847
Residuals            10 0.29454 0.02945
---
```

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: 0.825
IBIMET_3: 0.862
```

KB

```
Analysis of Variance Table

Response: Do_2008M[, 31]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)  
IBIMET_2              1 0.127678 0.127678  4.6988 0.05539 .
IBIMET_3              1 0.086716 0.086716  3.1913 0.10433  
N_Gemme               1 0.004548 0.004548  0.1674 0.69107  
Defogl                1 0.002800 0.002800  0.1030 0.75481  
Dirad                 1 0.006232 0.006232  0.2293 0.64231  
Vigoria               1 0.085145 0.085145  3.1335 0.10712  
N_Gemme:Defogl        1 0.082236 0.082236  3.0265 0.11254  
N_Gemme:Dirad         1 0.007290 0.007290  0.2683 0.61575  
Defogl:Dirad          1 0.001213 0.001213  0.0446 0.83692  
N_Gemme:Vigoria       1 0.058777 0.058777  2.1631 0.17211  
Defogl:Vigoria        1 0.002711 0.002711  0.0998 0.75861  
Dirad:Vigoria         1 0.135215 0.135215  4.9762 0.04978 *
N_Gemme:Defogl:Dirad  1 0.037808 0.037808  1.3914 0.26547  
Residuals            10 0.271722 0.027172                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s
```

ApaB

```
Analysis of Variance Table

Response: Do_2008M[, 32]
                     Df  Sum Sq Mean Sq F value   Pr(>F)   
IBIMET_2              1  308.88  308.88  1.6036 0.234102   
IBIMET_3              1  326.85  326.85  1.6968 0.221900   
N_Gemme               1   48.33   48.33  0.2509 0.627284   
Defogl                1 3064.08 3064.08 15.9070 0.002566 **
Dirad                 1   64.63   64.63  0.3355 0.575232   
Vigoria               1  187.91  187.91  0.9755 0.346599   
N_Gemme:Defogl        1  593.69  593.69  3.0821 0.109683   
N_Gemme:Dirad         1  176.36  176.36  0.9156 0.361197   
Defogl:Dirad          1   32.66   32.66  0.1695 0.689217   
N_Gemme:Vigoria       1  397.70  397.70  2.0647 0.181290   
Defogl:Vigoria        1   21.40   21.40  0.1111 0.745768   
Dirad:Vigoria         1  992.75  992.75  5.1538 0.046555 * 
N_Gemme:Defogl:Dirad  1  183.82  183.82  0.9543 0.351666   
Residuals            10 1926.25  192.62                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s
```

Antoctot1B

Analysis of Variance Table

Response: Do_2008M[, 33]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| IBIMET_2 | 1 | 185 | 185.5 | 0.0249 | 0.8777 |
| IBIMET_3 | 1 | 3244 | 3243.9 | 0.4361 | 0.5239 |
| N_Gemme | 1 | 2217 | 2216.5 | 0.2980 | 0.5971 |
| Defogl | 1 | 124 | 124.4 | 0.0167 | 0.8996 |
| Dirad | 1 | 1610 | 1609.8 | 0.2164 | 0.6517 |
| Vigoria | 1 | 1601 | 1600.6 | 0.2152 | 0.6527 |
| N_Gemme:Defogl | 1 | 93 | 92.6 | 0.0125 | 0.9134 |
| N_Gemme:Dirad | 1 | 406 | 405.9 | 0.0546 | 0.8200 |
| Defogl:Dirad | 1 | 127 | 127.3 | 0.0171 | 0.8985 |
| N_Gemme:Vigoria | 1 | 2521 | 2520.5 | 0.3389 | 0.5734 |
| Defogl:Vigoria | 1 | 217 | 217.0 | 0.0292 | 0.8678 |
| Dirad:Vigoria | 1 | 3143 | 3142.8 | 0.4225 | 0.5303 |
| N_Gemme:Defogl:Dirad | 1 | 7311 | 7310.9 | 0.9829 | 0.3449 |
| Residuals | 10 | 74380 | 7438.0 | | |

IBIMET_2: n.s
IBIMET_3: n.s

Poliftot1B

Analysis of Variance Table

Response: Do_2008M[, 34]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_2 | 1 | 14558 | 14558 | 0.2923 | 0.60058 | |
| IBIMET_3 | 1 | 24031 | 24031 | 0.4825 | 0.50310 | |
| N_Gemme | 1 | 25765 | 25765 | 0.5174 | 0.48844 | |
| Defogl | 1 | 56798 | 56798 | 1.1405 | 0.31065 | |
| Dirad | 1 | 53694 | 53694 | 1.0782 | 0.32356 | |
| Vigoria | 1 | 245 | 245 | 0.0049 | 0.94548 | |
| N_Gemme:Defogl | 1 | 13285 | 13285 | 0.2668 | 0.61675 | |
| N_Gemme:Dirad | 1 | 16530 | 16530 | 0.3319 | 0.57727 | |
| Defogl:Dirad | 1 | 19910 | 19910 | 0.3998 | 0.54138 | |
| N_Gemme:Vigoria | 1 | 64618 | 64618 | 1.2975 | 0.28122 | |
| Defogl:Vigoria | 1 | 30224 | 30224 | 0.6069 | 0.45400 | |
| Dirad:Vigoria | 1 | 71955 | 71955 | 1.4448 | 0.25705 | |
| N_Gemme:Defogl:Dirad | 1 | 203239 | 203239 | 4.0810 | 0.07096 | . |
| Residuals | 10 | 498015 | 49802 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_2: n.s
IBIMET_3: n.s

Antoctot2B

Analysis of Variance Table

Response: Do_2008M[, 35]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| IBIMET_2 | 1 | 11591 | 11591.3 | 1.7366 | 0.2170 |
| IBIMET_3 | 1 | 9887 | 9886.8 | 1.4812 | 0.2515 |
| N_Gemme | 1 | 444 | 443.6 | 0.0665 | 0.8018 |
| Defogl | 1 | 18696 | 18696.5 | 2.8010 | 0.1251 |

```
Dirad                1   2150  2149.8  0.3221 0.5829
Vigoria              1   9322  9322.1  1.3966 0.2646
N_Gemme:Defogl       1   2540  2540.0  0.3805 0.5511
N_Gemme:Dirad        1   2932  2932.0  0.4393 0.5225
Defogl:Dirad         1      0     0.3  0.0000 0.9948
N_Gemme:Vigoria      1    677   676.8  0.1014 0.7567
Defogl:Vigoria       1     14    13.9  0.0021 0.9644
Dirad:Vigoria        1  13013 13012.9  1.9495 0.1929
N_Gemme:Defogl:Dirad  1   2631  2630.7  0.3941 0.5442
Residuals           10  66749  6674.9
```

IBIMET_2: n.s
IBIMET_3: n.s

Poliftot2B

Analysis of Variance Table

```
Response: Do_2008M[, 36]
                    Df Sum Sq Mean Sq F value Pr(>F)
IBIMET_2             1   4451    4451  0.0759 0.7885
IBIMET_3             1  52853   52853  0.9013 0.3648
N_Gemme              1   2881    2881  0.0491 0.8290
Defogl               1   3836    3836  0.0654 0.8033
Dirad                1  81944   81944  1.3974 0.2645
Vigoria              1  34770   34770  0.5929 0.4591
N_Gemme:Defogl       1  58774   58774  1.0023 0.3404
N_Gemme:Dirad        1     36      36  0.0006 0.9806
Defogl:Dirad         1  24001   24001  0.4093 0.5367
N_Gemme:Vigoria      1 141718  141718  2.4167 0.1511
Defogl:Vigoria       1  35073   35073  0.5981 0.4572
Dirad:Vigoria        1 158306  158306  2.6996 0.1314
N_Gemme:Defogl:Dirad  1 217175  217175  3.7035 0.0832 .
Residuals           10 586406   58641
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_2: n.s
IBIMET_3: n.s

DONNA OLIMPIA 2008M DIPROVE

PvinacciaA

Analysis of Variance Table

```
Response: Do_2008M[, 11]
                    Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1            1  71305   71305  1.7535 0.218081
DIPROVE_2            1  17811   17811  0.4380 0.524671
DIPROVE_3            1  11068   11068  0.2722 0.614463
N_Gemme              1  32320   32320  0.7948 0.395866
Defogl               1 543188  543188 13.3577 0.005278 **
Dirad                1  72768   72768  1.7895 0.213809
Vigoria              1  34690   34690  0.8531 0.379781
N_Gemme:Defogl       1  17155   17155  0.4219 0.532230
N_Gemme:Dirad        1  17054   17054  0.4194 0.533414
Defogl:Dirad         1 199032  199032  4.8945 0.054238 .
N_Gemme:Vigoria      1  12432   12432  0.3057 0.593785
Defogl:Vigoria       1 173128  173128  4.2575 0.069103 .
```

```
Dirad:Vigoria         1   5681    5681  0.1397 0.717220
N_Gemme:Defogl:Dirad  1   2096    2096  0.0515 0.825464
Residuals             9 365983   40665
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

DensMostoA

Analysis of Variance Table

```
Response: Do_2008M[, 12]
                     Df     Sum Sq    Mean Sq F value   Pr(>F)
DIPROVE_1             1 1.5327e-05 1.5327e-05 10.2282 0.010863 *
DIPROVE_2             1 1.0534e-06 1.0534e-06  0.7029 0.423508
DIPROVE_3             1 4.6490e-07 4.6490e-07  0.3103 0.591100
N_Gemme               1 9.8180e-07 9.8180e-07  0.6552 0.439148
Defogl                1 2.4442e-05 2.4442e-05 16.3105 0.002935 **
Dirad                 1 1.8315e-05 1.8315e-05 12.2220 0.006766 **
Vigoria               1 2.5292e-05 2.5292e-05 16.8781 0.002644 **
N_Gemme:Defogl        1 7.8194e-06 7.8194e-06  5.2181 0.048221 *
N_Gemme:Dirad         1 7.2030e-07 7.2030e-07  0.4807 0.505621
Defogl:Dirad          1 5.6058e-06 5.6058e-06  3.7408 0.085107 .
N_Gemme:Vigoria       1 4.1500e-08 4.1500e-08  0.0277 0.871452
Defogl:Vigoria        1 6.9823e-06 6.9823e-06  4.6595 0.059204 .
Dirad:Vigoria         1 6.5000e-09 6.5000e-09  0.0043 0.948960
N_Gemme:Defogl:Dirad  1 2.0050e-07 2.0050e-07  0.1338 0.722963
Residuals             9 1.3487e-05 1.4985e-06
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: 0.729
DIPROVE_2: n.s
DIPROVE_3: n.s

BrixA

Analysis of Variance Table

```
Response: Do_2008M[, 13]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.69810 0.69810  8.5065 0.017127 *
DIPROVE_2             1 0.04663 0.04663  0.5682 0.470251
DIPROVE_3             1 0.00604 0.00604  0.0736 0.792313
N_Gemme               1 0.02680 0.02680  0.3266 0.581643
Defogl                1 1.27556 1.27556 15.5430 0.003393 **
Dirad                 1 0.86735 0.86735 10.5689 0.009982 **
Vigoria               1 1.26433 1.26433 15.4061 0.003484 **
N_Gemme:Defogl        1 0.49296 0.49296  6.0068 0.036704 *
N_Gemme:Dirad         1 0.02574 0.02574  0.3137 0.589098
Defogl:Dirad          1 0.31092 0.31092  3.7887 0.083441 .
N_Gemme:Vigoria       1 0.00681 0.00681  0.0830 0.779786
Defogl:Vigoria        1 0.37975 0.37975  4.6274 0.059926 .
Dirad:Vigoria         1 0.00122 0.00122  0.0149 0.905453
N_Gemme:Defogl:Dirad  1 0.00238 0.00238  0.0290 0.868456
Residuals             9 0.73860 0.08207
```

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.697
DIPROVE_2: n.s
DIPROVE_3: n.s

PhA

Analysis of Variance Table

Response: Do_2008M[, 14]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.025567 | 0.0255671 | 6.9474 | 0.02710 | * |
| DIPROVE_2 | 1 | 0.005793 | 0.0057929 | 1.5741 | 0.24121 | |
| DIPROVE_3 | 1 | 0.021914 | 0.0219141 | 5.9548 | 0.03735 | * |
| N_Gemme | 1 | 0.006989 | 0.0069894 | 1.8993 | 0.20145 | |
| Defogl | 1 | 0.001368 | 0.0013681 | 0.3718 | 0.55712 | |
| Dirad | 1 | 0.014931 | 0.0149311 | 4.0573 | 0.07481 | . |
| Vigoria | 1 | 0.016547 | 0.0165467 | 4.4963 | 0.06299 | . |
| N_Gemme:Defogl | 1 | 0.010240 | 0.0102402 | 2.7826 | 0.12964 | |
| N_Gemme:Dirad | 1 | 0.006514 | 0.0065142 | 1.7701 | 0.21609 | |
| Defogl:Dirad | 1 | 0.006716 | 0.0067162 | 1.8250 | 0.20970 | |
| N_Gemme:Vigoria | 1 | 0.000310 | 0.0003101 | 0.0843 | 0.77817 | |
| Defogl:Vigoria | 1 | 0.000186 | 0.0001859 | 0.0505 | 0.82720 | |
| Dirad:Vigoria | 1 | 0.000053 | 0.0000535 | 0.0145 | 0.90670 | |
| N_Gemme:Defogl:Dirad | 1 | 0.001649 | 0.0016489 | 0.4481 | 0.52006 | |
| Residuals | 9 | 0.033121 | 0.0036801 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.66
DIPROVE_2: n.s
DIPROVE_3: -0.631

AcTitolA

Analysis of Variance Table

Response: Do_2008M[, 15]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.21948 | 0.21948 | 4.5261 | 0.062278 | . |
| DIPROVE_2 | 1 | 0.08410 | 0.08410 | 1.7344 | 0.220393 | |
| DIPROVE_3 | 1 | 0.26523 | 0.26523 | 5.4695 | 0.044114 | * |
| N_Gemme | 1 | 0.00001 | 0.00001 | 0.0001 | 0.991856 | |
| Defogl | 1 | 0.78624 | 0.78624 | 16.2138 | 0.002988 | ** |
| Dirad | 1 | 0.01691 | 0.01691 | 0.3488 | 0.569321 | |
| Vigoria | 1 | 0.80095 | 0.80095 | 16.5173 | 0.002824 | ** |
| N_Gemme:Defogl | 1 | 0.12055 | 0.12055 | 2.4861 | 0.149312 | |
| N_Gemme:Dirad | 1 | 0.00002 | 0.00002 | 0.0005 | 0.983334 | |
| Defogl:Dirad | 1 | 0.00519 | 0.00519 | 0.1071 | 0.750952 | |
| N_Gemme:Vigoria | 1 | 0.03327 | 0.03327 | 0.6862 | 0.428884 | |
| Defogl:Vigoria | 1 | 0.00007 | 0.00007 | 0.0014 | 0.971216 | |
| Dirad:Vigoria | 1 | 0.00140 | 0.00140 | 0.0290 | 0.868618 | |
| N_Gemme:Defogl:Dirad | 1 | 0.03846 | 0.03846 | 0.7932 | 0.396316 | |
| Residuals | 9 | 0.43643 | 0.04849 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```
DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.615


AcTartA

Analysis of Variance Table

Response: Do_2008M[, 16]
                     Df  Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1             1 0.01711 0.01711  0.2062 0.66053  
DIPROVE_2             1 0.07823 0.07823  0.9429 0.35691  
DIPROVE_3             1 0.00249 0.00249  0.0300 0.86632  
N_Gemme               1 0.00156 0.00156  0.0187 0.89411  
Defogl                1 0.55312 0.55312  6.6663 0.02960 *
Dirad                 1 0.00108 0.00108  0.0131 0.91149  
Vigoria               1 0.41941 0.41941  5.0549 0.05115 .
N_Gemme:Defogl        1 0.07178 0.07178  0.8652 0.37657  
N_Gemme:Dirad         1 0.00010 0.00010  0.0012 0.97294  
Defogl:Dirad          1 0.01240 0.01240  0.1495 0.70801  
N_Gemme:Vigoria       1 0.00038 0.00038  0.0046 0.94756  
Defogl:Vigoria        1 0.03314 0.03314  0.3994 0.54313  
Dirad:Vigoria         1 0.02432 0.02432  0.2931 0.60141  
N_Gemme:Defogl:Dirad  1 0.01978 0.01978  0.2384 0.63702  
Residuals             9 0.74675 0.08297                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


AcMalicoA

Analysis of Variance Table

Response: Do_2008M[, 17]
                     Df  Sum Sq  Mean Sq F value Pr(>F)
DIPROVE_1             1 0.06592 0.065925  1.2056 0.3007
DIPROVE_2             1 0.00344 0.003437  0.0628 0.8077
DIPROVE_3             1 0.12192 0.121924  2.2298 0.1696
N_Gemme               1 0.01933 0.019328  0.3535 0.5668
Defogl                1 0.16211 0.162110  2.9647 0.1192
Dirad                 1 0.00200 0.001998  0.0365 0.8526
Vigoria               1 0.11033 0.110332  2.0178 0.1892
N_Gemme:Defogl        1 0.00893 0.008935  0.1634 0.6955
N_Gemme:Dirad         1 0.17242 0.172415  3.1531 0.1095
Defogl:Dirad          1 0.00831 0.008314  0.1520 0.7057
N_Gemme:Vigoria       1 0.12905 0.129053  2.3601 0.1588
Defogl:Vigoria        1 0.03778 0.037775  0.6908 0.4274
Dirad:Vigoria         1 0.01591 0.015905  0.2909 0.6027
N_Gemme:Defogl:Dirad  1 0.03026 0.030256  0.5533 0.4759
Residuals             9 0.49213 0.054681               

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

KA

Analysis of Variance Table

Response: Do_2008M[, 18]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.118040 | 0.118040 | 3.5797 | 0.09104 | . |
| DIPROVE_2 | 1 | 0.042657 | 0.042657 | 1.2936 | 0.28475 | |
| DIPROVE_3 | 1 | 0.040859 | 0.040859 | 1.2391 | 0.29449 | |
| N_Gemme | 1 | 0.052875 | 0.052875 | 1.6035 | 0.23720 | |
| Defogl | 1 | 0.008285 | 0.008285 | 0.2513 | 0.62822 | |
| Dirad | 1 | 0.049918 | 0.049918 | 1.5138 | 0.24974 | |
| Vigoria | 1 | 0.033532 | 0.033532 | 1.0169 | 0.33960 | |
| N_Gemme:Defogl | 1 | 0.032967 | 0.032967 | 0.9998 | 0.34349 | |
| N_Gemme:Dirad | 1 | 0.038560 | 0.038560 | 1.1694 | 0.30765 | |
| Defogl:Dirad | 1 | 0.030299 | 0.030299 | 0.9188 | 0.36282 | |
| N_Gemme:Vigoria | 1 | 0.000562 | 0.000562 | 0.0170 | 0.89902 | |
| Defogl:Vigoria | 1 | 0.000697 | 0.000697 | 0.0211 | 0.88762 | |
| Dirad:Vigoria | 1 | 0.000126 | 0.000126 | 0.0038 | 0.95207 | |
| N_Gemme:Defogl:Dirad | 1 | 0.000087 | 0.000087 | 0.0026 | 0.96022 | |
| Residuals | 9 | 0.296773 | 0.032975 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

ApaA

Analysis of Variance Table

Response: Do_2008M[, 19]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 1546.61 | 1546.61 | 7.0002 | 0.02666 | * |
| DIPROVE_2 | 1 | 12.36 | 12.36 | 0.0560 | 0.81831 | |
| DIPROVE_3 | 1 | 0.34 | 0.34 | 0.0016 | 0.96937 | |
| N_Gemme | 1 | 88.11 | 88.11 | 0.3988 | 0.54342 | |
| Defogl | 1 | 69.84 | 69.84 | 0.3161 | 0.58768 | |
| Dirad | 1 | 94.28 | 94.28 | 0.4267 | 0.52994 | |
| Vigoria | 1 | 26.67 | 26.67 | 0.1207 | 0.73627 | |
| N_Gemme:Defogl | 1 | 87.25 | 87.25 | 0.3949 | 0.54534 | |
| N_Gemme:Dirad | 1 | 27.64 | 27.64 | 0.1251 | 0.73173 | |
| Defogl:Dirad | 1 | 0.18 | 0.18 | 0.0008 | 0.97772 | |
| N_Gemme:Vigoria | 1 | 26.41 | 26.41 | 0.1195 | 0.73749 | |
| Defogl:Vigoria | 1 | 15.48 | 15.48 | 0.0701 | 0.79720 | |
| Dirad:Vigoria | 1 | 4.39 | 4.39 | 0.0199 | 0.89095 | |
| N_Gemme:Defogl:Dirad | 1 | 218.62 | 218.62 | 0.9895 | 0.34585 | |
| Residuals | 9 | 1988.44 | 220.94 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.661
DIPROVE_2: n.s
DIPROVE_3: n.s

Antoctot1A

Analysis of Variance Table

Response: Do_2008M[, 20]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 2283 | 2283 | 0.2327 | 0.64105 | |
| DIPROVE_2 | 1 | 16720 | 16720 | 1.7039 | 0.22416 | |
| DIPROVE_3 | 1 | 22782 | 22782 | 2.3216 | 0.16192 | |
| N_Gemme | 1 | 4552 | 4552 | 0.4639 | 0.51296 | |
| Defogl | 1 | 30352 | 30352 | 3.0931 | 0.11249 | |
| Dirad | 1 | 46313 | 46313 | 4.7196 | 0.05788 | . |
| Vigoria | 1 | 57230 | 57230 | 5.8321 | 0.03893 | * |
| N_Gemme:Defogl | 1 | 3654 | 3654 | 0.3724 | 0.55679 | |
| N_Gemme:Dirad | 1 | 78 | 78 | 0.0080 | 0.93077 | |
| Defogl:Dirad | 1 | 2893 | 2893 | 0.2948 | 0.60032 | |
| N_Gemme:Vigoria | 1 | 8053 | 8053 | 0.8206 | 0.38860 | |
| Defogl:Vigoria | 1 | 14255 | 14255 | 1.4527 | 0.25883 | |
| Dirad:Vigoria | 1 | 17 | 17 | 0.0018 | 0.96728 | |
| N_Gemme:Defogl:Dirad | 1 | 1199 | 1199 | 0.1222 | 0.73469 | |
| Residuals | 9 | 88316 | 9813 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

Poliftot1A

Analysis of Variance Table

Response: Do_2008M[, 21]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 59379 | 59379 | 1.0953 | 0.32259 | |
| DIPROVE_2 | 1 | 3643 | 3643 | 0.0672 | 0.80129 | |
| DIPROVE_3 | 1 | 93895 | 93895 | 1.7320 | 0.22069 | |
| N_Gemme | 1 | 46129 | 46129 | 0.8509 | 0.38036 | |
| Defogl | 1 | 17667 | 17667 | 0.3259 | 0.58206 | |
| Dirad | 1 | 229245 | 229245 | 4.2287 | 0.06989 | . |
| Vigoria | 1 | 64841 | 64841 | 1.1961 | 0.30251 | |
| N_Gemme:Defogl | 1 | 46244 | 46244 | 0.8530 | 0.37980 | |
| N_Gemme:Dirad | 1 | 25 | 25 | 0.0005 | 0.98334 | |
| Defogl:Dirad | 1 | 416 | 416 | 0.0077 | 0.93213 | |
| N_Gemme:Vigoria | 1 | 111256 | 111256 | 2.0523 | 0.18579 | |
| Defogl:Vigoria | 1 | 4352 | 4352 | 0.0803 | 0.78334 | |
| Dirad:Vigoria | 1 | 628 | 628 | 0.0116 | 0.91666 | |
| N_Gemme:Defogl:Dirad | 1 | 1370 | 1370 | 0.0253 | 0.87721 | |
| Residuals | 9 | 487906 | 54212 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

Antoctot2A

Analysis of Variance Table

Response: Do_2008M[, 22]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 10367 | 10367 | 1.4336 | 0.26176 | |
| DIPROVE_2 | 1 | 12769 | 12769 | 1.7658 | 0.21661 | |
| DIPROVE_3 | 1 | 21395 | 21395 | 2.9586 | 0.11954 | |
| N_Gemme | 1 | 140 | 140 | 0.0194 | 0.89224 | |
| Defogl | 1 | 33633 | 33633 | 4.6510 | 0.05939 | . |
| Dirad | 1 | 29799 | 29799 | 4.1207 | 0.07294 | . |
| Vigoria | 1 | 28043 | 28043 | 3.8779 | 0.08044 | . |
| N_Gemme:Defogl | 1 | 5996 | 5996 | 0.8292 | 0.38625 | |
| N_Gemme:Dirad | 1 | 1629 | 1629 | 0.2252 | 0.64638 | |
| Defogl:Dirad | 1 | 2080 | 2080 | 0.2877 | 0.60471 | |
| N_Gemme:Vigoria | 1 | 2968 | 2968 | 0.4104 | 0.53772 | |
| Defogl:Vigoria | 1 | 6418 | 6418 | 0.8875 | 0.37074 | |
| Dirad:Vigoria | 1 | 1264 | 1264 | 0.1748 | 0.68572 | |
| N_Gemme:Defogl:Dirad | 1 | 1426 | 1426 | 0.1971 | 0.66753 | |
| Residuals | 9 | 65083 | 7231 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

Poliftot2A

Analysis of Variance Table

Response: Do_2008M[, 23]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 125402 | 125402 | 1.9218 | 0.1990 |
| DIPROVE_2 | 1 | 0 | 0 | 0.0000 | 0.9986 |
| DIPROVE_3 | 1 | 68234 | 68234 | 1.0457 | 0.3332 |
| N_Gemme | 1 | 25280 | 25280 | 0.3874 | 0.5491 |
| Defogl | 1 | 65328 | 65328 | 1.0012 | 0.3432 |
| Dirad | 1 | 174171 | 174171 | 2.6692 | 0.1367 |
| Vigoria | 1 | 9054 | 9054 | 0.1388 | 0.7181 |
| N_Gemme:Defogl | 1 | 58595 | 58595 | 0.8980 | 0.3681 |
| N_Gemme:Dirad | 1 | 2694 | 2694 | 0.0413 | 0.8435 |
| Defogl:Dirad | 1 | 3161 | 3161 | 0.0485 | 0.8307 |
| N_Gemme:Vigoria | 1 | 114340 | 114340 | 1.7523 | 0.2182 |
| Defogl:Vigoria | 1 | 40977 | 40977 | 0.6280 | 0.4485 |
| Dirad:Vigoria | 1 | 3367 | 3367 | 0.0516 | 0.8254 |
| N_Gemme:Defogl:Dirad | 1 | 2892 | 2892 | 0.0443 | 0.8379 |
| Residuals | 9 | 587261 | 65251 | | |

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

PvinacciaB

Analysis of Variance Table

Response: Do_2008M[, 24]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 94051 | 94051 | 14.1120 | 0.0045086 | ** |
| DIPROVE_2 | 1 | 2627 | 2627 | 0.3942 | 0.5456923 | |
| DIPROVE_3 | 1 | 15160 | 15160 | 2.2747 | 0.1657715 | |
| N_Gemme | 1 | 19437 | 19437 | 2.9164 | 0.1218627 | |
| Defogl | 1 | 105045 | 105045 | 15.7615 | 0.0032543 | ** |

```
Dirad                 1 211449  211449 31.7270 0.0003206 ***
Vigoria               1   3449    3449  0.5175 0.4901495
N_Gemme:Defogl        1  10754   10754  1.6136 0.2358351
N_Gemme:Dirad         1  17079   17079  2.5627 0.1438771
Defogl:Dirad          1  10841   10841  1.6267 0.2341008
N_Gemme:Vigoria       1  19971   19971  2.9965 0.1174912
Defogl:Vigoria        1   2860    2860  0.4292 0.5287766
Dirad:Vigoria         1    118     118  0.0176 0.8972412
N_Gemme:Defogl:Dirad  1    221     221  0.0332 0.8594794
Residuals             9  59982    6665
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.781
DIPROVE_2: n.s
DIPROVE_3: n.s
```

DensMostoB

Analysis of Variance Table

```
Response: Do_2008M[, 25]
                     Df     Sum Sq    Mean Sq F value  Pr(>F)
DIPROVE_1             1 1.5480e-07 1.5480e-07  0.0559 0.81841
DIPROVE_2             1 1.7590e-07 1.7590e-07  0.0635 0.80668
DIPROVE_3             1 1.5013e-05 1.5013e-05  5.4210 0.04487 *
N_Gemme               1 6.1200e-08 6.1200e-08  0.0221 0.88509
Defogl                1 1.5276e-05 1.5276e-05  5.5160 0.04340 *
Dirad                 1 5.6000e-09 5.6000e-09  0.0020 0.96503
Vigoria               1 1.3266e-05 1.3266e-05  4.7900 0.05638 .
N_Gemme:Defogl        1 4.4590e-07 4.4590e-07  0.1610 0.69759
N_Gemme:Dirad         1 1.3307e-06 1.3307e-06  0.4805 0.50570
Defogl:Dirad          1 5.9260e-07 5.9260e-07  0.2140 0.65465
N_Gemme:Vigoria       1 2.7070e-07 2.7070e-07  0.0978 0.76166
Defogl:Vigoria        1 8.0902e-06 8.0902e-06  2.9212 0.12159
Dirad:Vigoria         1 1.5760e-07 1.5760e-07  0.0569 0.81680
N_Gemme:Defogl:Dirad  1 5.6720e-07 5.6720e-07  0.2048 0.66158
Residuals             9 2.4925e-05 2.7695e-06
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.613
```

BrixB

Analysis of Variance Table

```
Response: Do_2008M[, 26]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.07682 0.07682  0.7812 0.39977
DIPROVE_2             1 0.00811 0.00811  0.0825 0.78043
DIPROVE_3             1 0.61090 0.61090  6.2124 0.03428 *
N_Gemme               1 0.01370 0.01370  0.1394 0.71756
Defogl                1 0.67902 0.67902  6.9052 0.02746 *
Dirad                 1 0.00266 0.00266  0.0271 0.87288
Vigoria               1 0.61407 0.61407  6.2447 0.03392 *
N_Gemme:Defogl        1 0.01825 0.01825  0.1855 0.67678
```

```
N_Gemme:Dirad         1 0.03685 0.03685  0.3748 0.55556
Defogl:Dirad          1 0.01966 0.01966  0.2000 0.66532
N_Gemme:Vigoria       1 0.01404 0.01404  0.1428 0.71426
Defogl:Vigoria        1 0.35196 0.35196  3.5791 0.09106 .
Dirad:Vigoria         1 0.07248 0.07248  0.7371 0.41287
N_Gemme:Defogl:Dirad  1 0.04148 0.04148  0.4218 0.53225
Residuals             9 0.88502 0.09834
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: -0.639

PhB

Analysis of Variance Table

```
Response: Do_2008M[, 27]
                     Df    Sum Sq   Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.0124498 0.0124498  6.2457 0.03391 *
DIPROVE_2             1 0.0059736 0.0059736  2.9968 0.11748
DIPROVE_3             1 0.0076725 0.0076725  3.8491 0.08139 .
N_Gemme               1 0.0018693 0.0018693  0.9378 0.35815
Defogl                1 0.0016817 0.0016817  0.8436 0.38231
Dirad                 1 0.0002821 0.0002821  0.1415 0.71550
Vigoria               1 0.0179232 0.0179232  8.9916 0.01499 *
N_Gemme:Defogl        1 0.0186526 0.0186526  9.3575 0.01359 *
N_Gemme:Dirad         1 0.0008420 0.0008420  0.4224 0.53198
Defogl:Dirad          1 0.0048921 0.0048921  2.4542 0.15165
N_Gemme:Vigoria       1 0.0088918 0.0088918  4.4608 0.06386 .
Defogl:Vigoria        1 0.0012940 0.0012940  0.6492 0.44118
Dirad:Vigoria         1 0.0089839 0.0089839  4.5070 0.06273 .
N_Gemme:Defogl:Dirad  1 0.0035756 0.0035756  1.7938 0.21331
Residuals             9 0.0179400 0.0019933
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.64
DIPROVE_2: n.s
DIPROVE_3: n.s

AcTitolB

Analysis of Variance Table

```
Response: Do_2008M[, 28]
                     Df  Sum Sq  Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.13399 0.133991  2.1434 0.17722
DIPROVE_2             1 0.00449 0.004489  0.0718 0.79476
DIPROVE_3             1 0.03393 0.033928  0.5427 0.48006
N_Gemme               1 0.10475 0.104751  1.6757 0.22773
Defogl                1 0.02108 0.021080  0.3372 0.57569
Dirad                 1 0.01027 0.010270  0.1643 0.69471
Vigoria               1 0.23288 0.232875  3.7252 0.08566 .
N_Gemme:Defogl        1 0.00700 0.007000  0.1120 0.74558
N_Gemme:Dirad         1 0.01750 0.017500  0.2799 0.60953
Defogl:Dirad          1 0.00919 0.009192  0.1470 0.71027
N_Gemme:Vigoria       1 0.00523 0.005229  0.0837 0.77896
```

```
Defogl:Vigoria        1 0.11971 0.119713  1.9150 0.19976
Dirad:Vigoria         1 0.01751 0.017509  0.2801 0.60944
N_Gemme:Defogl:Dirad  1 0.00819 0.008191  0.1310 0.72573
Residuals             9 0.56262 0.062513
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

AcTartB

Analysis of Variance Table

```
Response: Do_2008M[, 29]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.012344 0.012344  0.4106 0.53764
DIPROVE_2             1 0.161089 0.161089  5.3583 0.04587 *
DIPROVE_3             1 0.007184 0.007184  0.2390 0.63665
N_Gemme               1 0.008817 0.008817  0.2933 0.60127
Defogl                1 0.064746 0.064746  2.1536 0.17629
Dirad                 1 0.050456 0.050456  1.6783 0.22739
Vigoria               1 0.000096 0.000096  0.0032 0.95624
N_Gemme:Defogl        1 0.005573 0.005573  0.1854 0.67693
N_Gemme:Dirad         1 0.012178 0.012178  0.4051 0.54032
Defogl:Dirad          1 0.009316 0.009316  0.3099 0.59133
N_Gemme:Vigoria       1 0.001282 0.001282  0.0426 0.84100
Defogl:Vigoria        1 0.003375 0.003375  0.1123 0.74527
Dirad:Vigoria         1 0.056464 0.056464  1.8782 0.20375
N_Gemme:Defogl:Dirad  1 0.000209 0.000209  0.0069 0.93542
Residuals             9 0.270571 0.030063
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: 0.611
DIPROVE_3: n.s

AcMalicoB

Analysis of Variance Table

```
Response: Do_2008M[, 30]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.10368 0.10368  1.1010 0.32140
DIPROVE_2             1 0.33227 0.33227  3.5286 0.09303 .
DIPROVE_3             1 0.05134 0.05134  0.5452 0.47909
N_Gemme               1 0.13871 0.13871  1.4730 0.25576
Defogl                1 0.00003 0.00003  0.0003 0.98689
Dirad                 1 0.03200 0.03200  0.3399 0.57423
Vigoria               1 0.02697 0.02697  0.2864 0.60553
N_Gemme:Defogl        1 0.24673 0.24673  2.6202 0.13996
N_Gemme:Dirad         1 0.06392 0.06392  0.6788 0.43130
Defogl:Dirad          1 0.01497 0.01497  0.1590 0.69935
N_Gemme:Vigoria       1 0.04413 0.04413  0.4687 0.51085
Defogl:Vigoria        1 0.03088 0.03088  0.3279 0.58089
Dirad:Vigoria         1 0.28881 0.28881  3.0670 0.11381
N_Gemme:Defogl:Dirad  1 0.16842 0.16842  1.7885 0.21392
```

```
Residuals             9 0.84748 0.09416
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

KB

```
Analysis of Variance Table

Response: Do_2008M[, 31]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
DIPROVE_1             1 0.037001 0.037001  2.9555 0.11970
DIPROVE_2             1 0.090210 0.090210  7.2057 0.02503 *
DIPROVE_3             1 0.055932 0.055932  4.4677 0.06369 .
N_Gemme               1 0.122343 0.122343  9.7724 0.01220 *
Defogl                1 0.000019 0.000019  0.0015 0.96997
Dirad                 1 0.006093 0.006093  0.4867 0.50303
Vigoria               1 0.090244 0.090244  7.2084 0.02501 *
N_Gemme:Defogl        1 0.111968 0.111968  8.9437 0.01519 *
N_Gemme:Dirad         1 0.037075 0.037075  2.9614 0.11938
Defogl:Dirad          1 0.031256 0.031256  2.4966 0.14855
N_Gemme:Vigoria       1 0.052305 0.052305  4.1780 0.07130 .
Defogl:Vigoria        1 0.000049 0.000049  0.0039 0.95130
Dirad:Vigoria         1 0.101443 0.101443  8.1030 0.01920 *
N_Gemme:Defogl:Dirad  1 0.061481 0.061481  4.9109 0.05391 .
Residuals             9 0.112673 0.012519
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: 0.667
DIPROVE_3: n.s
```

ApaB

```
Analysis of Variance Table

Response: Do_2008M[, 32]
                     Df  Sum Sq Mean Sq F value Pr(>F)
DIPROVE_1             1  882.33  882.33  2.9826 0.1182
DIPROVE_2             1  185.59  185.59  0.6273 0.4487
DIPROVE_3             1    6.55    6.55  0.0221 0.8850
N_Gemme               1   37.81   37.81  0.1278 0.7290
Defogl                1 1504.07 1504.07  5.0843 0.0506 .
Dirad                 1   75.31   75.31  0.2546 0.6260
Vigoria               1  672.68  672.68  2.2739 0.1658
N_Gemme:Defogl        1 1030.80 1030.80  3.4844 0.0948 .
N_Gemme:Dirad         1   23.96   23.96  0.0810 0.7824
Defogl:Dirad          1    6.36    6.36  0.0215 0.8866
N_Gemme:Vigoria       1  304.46  304.46  1.0292 0.3369
Defogl:Vigoria        1  103.14  103.14  0.3486 0.5694
Dirad:Vigoria         1  726.40  726.40  2.4555 0.1516
N_Gemme:Defogl:Dirad  1  103.41  103.41  0.3495 0.5689
Residuals             9 2662.46  295.83
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

Antoctot1B

Analysis of Variance Table

Response: Do_2008M[, 33]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 4898 | 4898.5 | 0.9157 | 0.36359 | |
| DIPROVE_2 | 1 | 221 | 221.1 | 0.0413 | 0.84340 | |
| DIPROVE_3 | 1 | 100 | 99.7 | 0.0186 | 0.89441 | |
| N_Gemme | 1 | 5 | 4.5 | 0.0008 | 0.97744 | |
| Defogl | 1 | 1011 | 1011.3 | 0.1891 | 0.67393 | |
| Dirad | 1 | 493 | 492.8 | 0.0921 | 0.76838 | |
| Vigoria | 1 | 3767 | 3766.7 | 0.7042 | 0.42312 | |
| N_Gemme:Defogl | 1 | 7 | 6.7 | 0.0013 | 0.97250 | |
| N_Gemme:Dirad | 1 | 4958 | 4958.5 | 0.9270 | 0.36081 | |
| Defogl:Dirad | 1 | 431 | 430.9 | 0.0806 | 0.78296 | |
| N_Gemme:Vigoria | 1 | 698 | 697.7 | 0.1304 | 0.72632 | |
| Defogl:Vigoria | 1 | 4987 | 4987.2 | 0.9323 | 0.35948 | |
| Dirad:Vigoria | 1 | 21970 | 21970.2 | 4.1072 | 0.07333 | . |
| N_Gemme:Defogl:Dirad | 1 | 5490 | 5489.9 | 1.0263 | 0.33749 | |
| Residuals | 9 | 48142 | 5349.2 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

Poliftot1B

Analysis of Variance Table

Response: Do_2008M[, 34]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 37954 | 37954 | 0.7453 | 0.41038 | |
| DIPROVE_2 | 1 | 6448 | 6448 | 0.1266 | 0.73017 | |
| DIPROVE_3 | 1 | 2705 | 2705 | 0.0531 | 0.82287 | |
| N_Gemme | 1 | 93 | 93 | 0.0018 | 0.96681 | |
| Defogl | 1 | 36423 | 36423 | 0.7152 | 0.41963 | |
| Dirad | 1 | 21822 | 21822 | 0.4285 | 0.52909 | |
| Vigoria | 1 | 11119 | 11119 | 0.2183 | 0.65141 | |
| N_Gemme:Defogl | 1 | 26525 | 26525 | 0.5209 | 0.48880 | |
| N_Gemme:Dirad | 1 | 29262 | 29262 | 0.5746 | 0.46781 | |
| Defogl:Dirad | 1 | 28312 | 28312 | 0.5560 | 0.47492 | |
| N_Gemme:Vigoria | 1 | 88314 | 88314 | 1.7342 | 0.22042 | |
| Defogl:Vigoria | 1 | 2044 | 2044 | 0.0401 | 0.84568 | |
| Dirad:Vigoria | 1 | 206838 | 206838 | 4.0617 | 0.07468 | . |
| N_Gemme:Defogl:Dirad | 1 | 136687 | 136687 | 2.6841 | 0.13578 | |
| Residuals | 9 | 458322 | 50925 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s

DIPROVE_3: n.s

Antoctot2B

Analysis of Variance Table

Response: Do_2008M[, 35]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 23685 | 23685.4 | 3.2265 | 0.1060 |
| DIPROVE_2 | 1 | 226 | 226.0 | 0.0308 | 0.8646 |
| DIPROVE_3 | 1 | 43 | 42.6 | 0.0058 | 0.9409 |
| N_Gemme | 1 | 2325 | 2324.5 | 0.3166 | 0.5874 |
| Defogl | 1 | 8773 | 8772.5 | 1.1950 | 0.3027 |
| Dirad | 1 | 103 | 102.7 | 0.0140 | 0.9084 |
| Vigoria | 1 | 153 | 153.5 | 0.0209 | 0.8882 |
| N_Gemme:Defogl | 1 | 4351 | 4350.6 | 0.5926 | 0.4611 |
| N_Gemme:Dirad | 1 | 5203 | 5203.5 | 0.7088 | 0.4216 |
| Defogl:Dirad | 1 | 1176 | 1176.1 | 0.1602 | 0.6983 |
| N_Gemme:Vigoria | 1 | 10 | 10.4 | 0.0014 | 0.9707 |
| Defogl:Vigoria | 1 | 1313 | 1313.4 | 0.1789 | 0.6822 |
| Dirad:Vigoria | 1 | 23092 | 23092.4 | 3.1457 | 0.1099 |
| N_Gemme:Defogl:Dirad | 1 | 4123 | 4123.1 | 0.5617 | 0.4727 |
| Residuals | 9 | 66069 | 7341.0 | | |

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

Poliftot2B

Analysis of Variance Table

Response: Do_2008M[, 36]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 16694 | 16694 | 0.2704 | 0.6156 | |
| DIPROVE_2 | 1 | 6180 | 6180 | 0.1001 | 0.7589 | |
| DIPROVE_3 | 1 | 590 | 590 | 0.0096 | 0.9243 | |
| N_Gemme | 1 | 2188 | 2188 | 0.0354 | 0.8549 | |
| Defogl | 1 | 18708 | 18708 | 0.3030 | 0.5954 | |
| Dirad | 1 | 27594 | 27594 | 0.4470 | 0.5205 | |
| Vigoria | 1 | 436 | 436 | 0.0071 | 0.9348 | |
| N_Gemme:Defogl | 1 | 91520 | 91520 | 1.4825 | 0.2543 | |
| N_Gemme:Dirad | 1 | 2891 | 2891 | 0.0468 | 0.8335 | |
| Defogl:Dirad | 1 | 51744 | 51744 | 0.8382 | 0.3838 | |
| N_Gemme:Vigoria | 1 | 182983 | 182983 | 2.9641 | 0.1192 | |
| Defogl:Vigoria | 1 | 19187 | 19187 | 0.3108 | 0.5908 | |
| Dirad:Vigoria | 1 | 261246 | 261246 | 4.2318 | 0.0698 | . |
| N_Gemme:Defogl:Dirad | 1 | 164661 | 164661 | 2.6673 | 0.1369 | |
| Residuals | 9 | 555604 | 61734 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

DONNA OLIMPIA 2008M IASMA

PvinacciaA

Analysis of Variance Table

Response: Do_2008M[, 11]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| IASMA_1 | 1 | 206 | 206 | 0.0035 | 0.9538 |
| IASMA_2 | 1 | 172865 | 172865 | 2.9708 | 0.1189 |
| IASMA_3 | 1 | 59516 | 59516 | 1.0228 | 0.3383 |
| N_Gemme | 1 | 79734 | 79734 | 1.3703 | 0.2718 |
| Defogl | 1 | 184524 | 184524 | 3.1711 | 0.1086 |
| Dirad | 1 | 137424 | 137424 | 2.3617 | 0.1587 |
| Vigoria | 1 | 33870 | 33870 | 0.5821 | 0.4650 |
| N_Gemme:Defogl | 1 | 3810 | 3810 | 0.0655 | 0.8038 |
| N_Gemme:Dirad | 1 | 2647 | 2647 | 0.0455 | 0.8359 |
| Defogl:Dirad | 1 | 107787 | 107787 | 1.8524 | 0.2066 |
| N_Gemme:Vigoria | 1 | 6 | 6 | 0.0001 | 0.9920 |
| Defogl:Vigoria | 1 | 143029 | 143029 | 2.4580 | 0.1514 |
| Dirad:Vigoria | 1 | 116295 | 116295 | 1.9986 | 0.1911 |
| N_Gemme:Defogl:Dirad | 1 | 10307 | 10307 | 0.1771 | 0.6837 |
| Residuals | 9 | 523694 | 58188 | | |

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

DensMostoA

Analysis of Variance Table

Response: Do_2008M[, 12]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 1.0537e-06 | 1.0537e-06 | 0.8399 | 0.383314 | |
| IASMA_2 | 1 | 8.9501e-06 | 8.9501e-06 | 7.1342 | 0.025581 | * |
| IASMA_3 | 1 | 7.2930e-06 | 7.2930e-06 | 5.8133 | 0.039179 | * |
| N_Gemme | 1 | 7.3035e-06 | 7.3035e-06 | 5.8216 | 0.039069 | * |
| Defogl | 1 | 1.5874e-05 | 1.5874e-05 | 12.6537 | 0.006146 | ** |
| Dirad | 1 | 2.6432e-05 | 2.6432e-05 | 21.0690 | 0.001309 | ** |
| Vigoria | 1 | 2.0203e-05 | 2.0203e-05 | 16.1043 | 0.003050 | ** |
| N_Gemme:Defogl | 1 | 6.0270e-06 | 6.0270e-06 | 4.8042 | 0.056082 | . |
| N_Gemme:Dirad | 1 | 2.6739e-06 | 2.6739e-06 | 2.1314 | 0.178318 | |
| Defogl:Dirad | 1 | 4.4190e-06 | 4.4190e-06 | 3.5224 | 0.093279 | . |
| N_Gemme:Vigoria | 1 | 2.1751e-06 | 2.1751e-06 | 1.7338 | 0.220470 | |
| Defogl:Vigoria | 1 | 2.6240e-07 | 2.6240e-07 | 0.2092 | 0.658257 | |
| Dirad:Vigoria | 1 | 6.7417e-06 | 6.7417e-06 | 5.3739 | 0.045623 | * |
| N_Gemme:Defogl:Dirad | 1 | 3.9700e-08 | 3.9700e-08 | 0.0317 | 0.862711 | |
| Residuals | 9 | 1.1291e-05 | 1.2545e-06 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: -0.665
IASMA_3: 0.626

BrixA

Analysis of Variance Table

Response: Do_2008M[, 13]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|

```
IASMA_1              1 0.03534 0.03534  0.5315 0.484526
IASMA_2              1 0.50024 0.50024  7.5239 0.022737 *
IASMA_3              1 0.42145 0.42145  6.3388 0.032893 *
N_Gemme              1 0.32657 0.32657  4.9117 0.053893 .
Defogl               1 0.77751 0.77751 11.6941 0.007632 **
Dirad                1 1.21514 1.21514 18.2763 0.002065 **
Vigoria              1 1.00274 1.00274 15.0816 0.003711 **
N_Gemme:Defogl       1 0.39010 0.39010  5.8673 0.038468 *
N_Gemme:Dirad        1 0.15024 0.15024  2.2597 0.167030
Defogl:Dirad         1 0.30829 0.30829  4.6369 0.059711 .
N_Gemme:Vigoria      1 0.09741 0.09741  1.4650 0.256960
Defogl:Vigoria       1 0.02515 0.02515  0.3782 0.553787
Dirad:Vigoria        1 0.29441 0.29441  4.4280 0.064667 .
N_Gemme:Defogl:Dirad 1 0.00022 0.00022  0.0033 0.955246
Residuals            9 0.59839 0.06649
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: n.s
IASMA_2: -0.675
IASMA_3: 0.643

PhA

Analysis of Variance Table

```
Response: Do_2008M[, 14]
                     Df   Sum Sq   Mean Sq F value Pr(>F)
IASMA_1               1 0.007577 0.0075767  1.2301 0.2962
IASMA_2               1 0.000605 0.0006051  0.0982 0.7611
IASMA_3               1 0.004627 0.0046272  0.7512 0.4086
N_Gemme               1 0.007756 0.0077558  1.2591 0.2909
Defogl                1 0.001370 0.0013698  0.2224 0.6485
Dirad                 1 0.016482 0.0164824  2.6759 0.1363
Vigoria               1 0.012898 0.0128976  2.0939 0.1818
N_Gemme:Defogl        1 0.016841 0.0168411  2.7341 0.1326
N_Gemme:Dirad         1 0.015975 0.0159748  2.5935 0.1418
Defogl:Dirad          1 0.001742 0.0017419  0.2828 0.6077
N_Gemme:Vigoria       1 0.002761 0.0027606  0.4482 0.5200
Defogl:Vigoria        1 0.002468 0.0024681  0.4007 0.5425
Dirad:Vigoria         1 0.003365 0.0033652  0.5463 0.4787
N_Gemme:Defogl:Dirad  1 0.001996 0.0019961  0.3241 0.5831
Residuals             9 0.055437 0.0061596
```

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

AcTitolA

Analysis of Variance Table

```
Response: Do_2008M[, 15]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1 0.02857 0.02857  0.4053 0.54023
IASMA_2               1 0.22074 0.22074  3.1313 0.11059
IASMA_3               1 0.44040 0.44040  6.2471 0.03389 *
N_Gemme               1 0.01458 0.01458  0.2069 0.66001
Defogl                1 0.28212 0.28212  4.0019 0.07650 .
```

```
Dirad                 1 0.05510 0.05510  0.7817 0.39964
Vigoria               1 0.72918 0.72918 10.3435 0.01055 *
N_Gemme:Defogl        1 0.21848 0.21848  3.0992 0.11218
N_Gemme:Dirad         1 0.00664 0.00664  0.0942 0.76591
Defogl:Dirad          1 0.03078 0.03078  0.4366 0.52532
N_Gemme:Vigoria       1 0.00147 0.00147  0.0209 0.88820
Defogl:Vigoria        1 0.00277 0.00277  0.0393 0.84732
Dirad:Vigoria         1 0.07993 0.07993  1.1339 0.31468
N_Gemme:Defogl:Dirad  1 0.06309 0.06309  0.8949 0.36884
Residuals             9 0.63447 0.07050
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: -0.64


AcTartA

Analysis of Variance Table

Response: Do_2008M[, 16]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1 0.24400 0.24400  3.5954 0.09044 .
IASMA_2               1 0.09851 0.09851  1.4516 0.25900
IASMA_3               1 0.19503 0.19503  2.8738 0.12427
N_Gemme               1 0.00319 0.00319  0.0470 0.83313
Defogl                1 0.09585 0.09585  1.4124 0.26508
Dirad                 1 0.00352 0.00352  0.0518 0.82505
Vigoria               1 0.51924 0.51924  7.6512 0.02189 *
N_Gemme:Defogl        1 0.07562 0.07562  1.1143 0.31866
N_Gemme:Dirad         1 0.01135 0.01135  0.1673 0.69210
Defogl:Dirad          1 0.00162 0.00162  0.0239 0.88063
N_Gemme:Vigoria       1 0.01005 0.01005  0.1481 0.70933
Defogl:Vigoria        1 0.00170 0.00170  0.0250 0.87780
Dirad:Vigoria         1 0.09589 0.09589  1.4130 0.26497
N_Gemme:Defogl:Dirad  1 0.01532 0.01532  0.2257 0.64604
Residuals             9 0.61077 0.06786
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


AcMalicoA

Analysis of Variance Table

Response: Do_2008M[, 17]
                     Df  Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.22685 0.226852  5.6428 0.04154 *
IASMA_2               1 0.19846 0.198463  4.9366 0.05340 .
IASMA_3               1 0.12020 0.120196  2.9898 0.11785
N_Gemme               1 0.00000 0.000002  0.0000 0.99508
Defogl                1 0.12915 0.129146  3.2124 0.10668
Dirad                 1 0.03445 0.034447  0.8568 0.37878
Vigoria               1 0.03558 0.035578  0.8850 0.37141
N_Gemme:Defogl        1 0.00590 0.005899  0.1467 0.71058
```

```
N_Gemme:Dirad         1 0.04389 0.043892  1.0918 0.32333
Defogl:Dirad          1 0.09016 0.090165  2.2428 0.16847
N_Gemme:Vigoria       1 0.09604 0.096042  2.3890 0.15660
Defogl:Vigoria        1 0.00097 0.000965  0.0240 0.88028
Dirad:Vigoria         1 0.00516 0.005160  0.1284 0.72841
N_Gemme:Defogl:Dirad  1 0.03121 0.031207  0.7762 0.40121
Residuals             9 0.36182 0.040202
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.621
IASMA_2: n.s
IASMA_3: n.s


KA

Analysis of Variance Table

Response: Do_2008M[, 18]
                     Df  Sum Sq  Mean Sq F value Pr(>F)
IASMA_1               1 0.04916 0.049157  1.2754 0.2880
IASMA_2               1 0.00294 0.002945  0.0764 0.7885
IASMA_3               1 0.00789 0.007886  0.2046 0.6617
N_Gemme               1 0.05579 0.055793  1.4476 0.2596
Defogl                1 0.00131 0.001310  0.0340 0.8578
Dirad                 1 0.03539 0.035390  0.9182 0.3630
Vigoria               1 0.02427 0.024267  0.6296 0.4479
N_Gemme:Defogl        1 0.05661 0.056608  1.4688 0.2564
N_Gemme:Dirad         1 0.10505 0.105049  2.7256 0.1331
Defogl:Dirad          1 0.02035 0.020348  0.5280 0.4859
N_Gemme:Vigoria       1 0.01887 0.018866  0.4895 0.5018
Defogl:Vigoria        1 0.00532 0.005317  0.1379 0.7189
Dirad:Vigoria         1 0.01621 0.016207  0.4205 0.5329
N_Gemme:Defogl:Dirad  1 0.00022 0.000223  0.0058 0.9411
Residuals             9 0.34687 0.038541

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


ApaA

Analysis of Variance Table

Response: Do_2008M[, 19]
                     Df  Sum Sq Mean Sq F value Pr(>F)
IASMA_1               1  258.77  258.77  1.0262 0.3375
IASMA_2               1   86.35   86.35  0.3425 0.5728
IASMA_3               1    0.45    0.45  0.0018 0.9671
N_Gemme               1   44.43   44.43  0.1762 0.6845
Defogl                1  888.07  888.07  3.5219 0.0933 .
Dirad                 1  206.76  206.76  0.8200 0.3888
Vigoria               1   28.26   28.26  0.1121 0.7455
N_Gemme:Defogl        1   26.85   26.85  0.1065 0.7517
N_Gemme:Dirad         1   92.29   92.29  0.3660 0.5601
Defogl:Dirad          1    1.15    1.15  0.0046 0.9475
N_Gemme:Vigoria       1   29.02   29.02  0.1151 0.7422
Defogl:Vigoria        1   17.24   17.24  0.0684 0.7996
Dirad:Vigoria         1   11.82   11.82  0.0469 0.8334
```

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| N_Gemme:Defogl:Dirad | 1 | 245.80 | 245.80 | 0.9748 | 0.3493 | |
| Residuals | 9 | 2269.37 | 252.15 | | | |

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

Antoctot1A

Analysis of Variance Table

Response: Do_2008M[, 20]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 26 | 26 | 0.0026 | 0.96009 | |
| IASMA_2 | 1 | 22441 | 22441 | 2.2543 | 0.16749 | |
| IASMA_3 | 1 | 16272 | 16272 | 1.6345 | 0.23306 | |
| N_Gemme | 1 | 1862 | 1862 | 0.1870 | 0.67559 | |
| Defogl | 1 | 491 | 491 | 0.0493 | 0.82920 | |
| Dirad | 1 | 69785 | 69785 | 7.0100 | 0.02658 | * |
| Vigoria | 1 | 46334 | 46334 | 4.6543 | 0.05932 | . |
| N_Gemme:Defogl | 1 | 2796 | 2796 | 0.2809 | 0.60896 | |
| N_Gemme:Dirad | 1 | 3251 | 3251 | 0.3265 | 0.58170 | |
| Defogl:Dirad | 1 | 79 | 79 | 0.0080 | 0.93082 | |
| N_Gemme:Vigoria | 1 | 27205 | 27205 | 2.7328 | 0.13270 | |
| Defogl:Vigoria | 1 | 7756 | 7756 | 0.7791 | 0.40038 | |
| Dirad:Vigoria | 1 | 8283 | 8283 | 0.8320 | 0.38547 | |
| N_Gemme:Defogl:Dirad | 1 | 2523 | 2523 | 0.2534 | 0.62678 | |
| Residuals | 9 | 89595 | 9955 | | | |

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

Poliftot1A

Analysis of Variance Table

Response: Do_2008M[, 21]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 16190 | 16190 | 0.2809 | 0.6089 | |
| IASMA_2 | 1 | 51807 | 51807 | 0.8988 | 0.3679 | |
| IASMA_3 | 1 | 10570 | 10570 | 0.1834 | 0.6785 | |
| N_Gemme | 1 | 35829 | 35829 | 0.6216 | 0.4507 | |
| Defogl | 1 | 7813 | 7813 | 0.1356 | 0.7213 | |
| Dirad | 1 | 282200 | 282200 | 4.8962 | 0.0542 | . |
| Vigoria | 1 | 33133 | 33133 | 0.5749 | 0.4677 | |
| N_Gemme:Defogl | 1 | 16826 | 16826 | 0.2919 | 0.6021 | |
| N_Gemme:Dirad | 1 | 9755 | 9755 | 0.1692 | 0.6904 | |
| Defogl:Dirad | 1 | 29307 | 29307 | 0.5085 | 0.4939 | |
| N_Gemme:Vigoria | 1 | 139037 | 139037 | 2.4123 | 0.1548 | |
| Defogl:Vigoria | 1 | 3032 | 3032 | 0.0526 | 0.8237 | |
| Dirad:Vigoria | 1 | 6560 | 6560 | 0.1138 | 0.7436 | |
| N_Gemme:Defogl:Dirad | 1 | 6203 | 6203 | 0.1076 | 0.7504 | |
| Residuals | 9 | 518734 | 57637 | | | |

---

```
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

Antoctot2A

```
Analysis of Variance Table

Response: Do_2008M[, 22]
                    Df Sum Sq Mean Sq F value  Pr(>F)  
IASMA_1              1     12      12  0.0015 0.96956  
IASMA_2              1  27796   27796  3.5612 0.09176 .
IASMA_3              1  20064   20064  2.5706 0.14333  
N_Gemme              1    561     561  0.0719 0.79465  
Defogl               1   6557    6557  0.8401 0.38326  
Dirad                1  47262   47262  6.0553 0.03611 *
Vigoria              1  18586   18586  2.3813 0.15719  
N_Gemme:Defogl       1   4940    4940  0.6329 0.44678  
N_Gemme:Dirad        1   1799    1799  0.2305 0.64264  
Defogl:Dirad         1     43      43  0.0055 0.94233  
N_Gemme:Vigoria      1  18098   18098  2.3187 0.16216  
Defogl:Vigoria       1   1468    1468  0.1881 0.67468  
Dirad:Vigoria        1   2588    2588  0.3315 0.57886  
N_Gemme:Defogl:Dirad 1   2990    2990  0.3831 0.55128  
Residuals            9  70245    7805                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

Poliftot2A

```
Analysis of Variance Table

Response: Do_2008M[, 23]
                    Df Sum Sq Mean Sq F value Pr(>F)
IASMA_1              1  22429   22429  0.3197 0.5856
IASMA_2              1  61489   61489  0.8765 0.3736
IASMA_3              1  37728   37728  0.5378 0.4820
N_Gemme              1  38411   38411  0.5475 0.4782
Defogl               1   2554    2554  0.0364 0.8529
Dirad                1 201781  201781  2.8763 0.1241
Vigoria              1     38      38  0.0005 0.9820
N_Gemme:Defogl       1  13956   13956  0.1989 0.6661
N_Gemme:Dirad        1   6108    6108  0.0871 0.7746
Defogl:Dirad         1  39101   39101  0.5574 0.4744
N_Gemme:Vigoria      1 121035  121035  1.7253 0.2215
Defogl:Vigoria       1  42092   42092  0.6000 0.4584
Dirad:Vigoria        1  55284   55284  0.7880 0.3978
N_Gemme:Defogl:Dirad 1   7372    7372  0.1051 0.7532
Residuals            9 631380   70153               

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

PvinacciaB

Analysis of Variance Table

Response: Do_2008M[, 24]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 10672 | 10672 | 1.7648 | 0.2167247 | |
| IASMA_2 | 1 | 33432 | 33432 | 5.5285 | 0.0432143 | * |
| IASMA_3 | 1 | 4370 | 4370 | 0.7227 | 0.4172972 | |
| N_Gemme | 1 | 96472 | 96472 | 15.9533 | 0.0031380 | ** |
| Defogl | 1 | 96723 | 96723 | 15.9947 | 0.0031135 | ** |
| Dirad | 1 | 210000 | 210000 | 34.7270 | 0.0002311 | *** |
| Vigoria | 1 | 1968 | 1968 | 0.3255 | 0.5822977 | |
| N_Gemme:Defogl | 1 | 172 | 172 | 0.0284 | 0.8698546 | |
| N_Gemme:Dirad | 1 | 1078 | 1078 | 0.1783 | 0.6827370 | |
| Defogl:Dirad | 1 | 18298 | 18298 | 3.0258 | 0.1159453 | |
| N_Gemme:Vigoria | 1 | 15681 | 15681 | 2.5932 | 0.1417837 | |
| Defogl:Vigoria | 1 | 26274 | 26274 | 4.3448 | 0.0667851 | . |
| Dirad:Vigoria | 1 | 3468 | 3468 | 0.5734 | 0.4682608 | |
| N_Gemme:Defogl:Dirad | 1 | 13 | 13 | 0.0021 | 0.9643600 | |
| Residuals | 9 | 54424 | 6047 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: 0.617
IASMA_3: n.s

DensMostoB

Analysis of Variance Table

Response: Do_2008M[, 25]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 8.8013e-06 | 8.8013e-06 | 4.9932 | 0.05231 | . |
| IASMA_2 | 1 | 5.1130e-07 | 5.1130e-07 | 0.2901 | 0.60323 | |
| IASMA_3 | 1 | 1.6300e-05 | 1.6300e-05 | 9.2475 | 0.01400 | * |
| N_Gemme | 1 | 1.4100e-08 | 1.4100e-08 | 0.0080 | 0.93065 | |
| Defogl | 1 | 3.8689e-06 | 3.8689e-06 | 2.1949 | 0.17261 | |
| Dirad | 1 | 2.5993e-06 | 2.5993e-06 | 1.4747 | 0.25551 | |
| Vigoria | 1 | 9.2833e-06 | 9.2833e-06 | 5.2666 | 0.04739 | * |
| N_Gemme:Defogl | 1 | 7.0264e-06 | 7.0264e-06 | 3.9862 | 0.07698 | . |
| N_Gemme:Dirad | 1 | 2.1440e-07 | 2.1440e-07 | 0.1217 | 0.73526 | |
| Defogl:Dirad | 1 | 6.9000e-08 | 6.9000e-08 | 0.0392 | 0.84751 | |
| N_Gemme:Vigoria | 1 | 5.3497e-06 | 5.3497e-06 | 3.0350 | 0.11546 | |
| Defogl:Vigoria | 1 | 7.8480e-06 | 7.8480e-06 | 4.4523 | 0.06406 | . |
| Dirad:Vigoria | 1 | 1.7760e-06 | 1.7760e-06 | 1.0075 | 0.34171 | |
| N_Gemme:Defogl:Dirad | 1 | 8.0690e-07 | 8.0690e-07 | 0.4578 | 0.51567 | |
| Residuals | 9 | 1.5864e-05 | 1.7627e-06 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: 0.712

BrixB

Analysis of Variance Table

Response: Do_2008M[, 26]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.34764 | 0.34764 | 3.8560 | 0.08116 | . |
| IASMA_2 | 1 | 0.06448 | 0.06448 | 0.7152 | 0.41964 | |
| IASMA_3 | 1 | 0.55307 | 0.55307 | 6.1346 | 0.03517 | * |
| N_Gemme | 1 | 0.02582 | 0.02582 | 0.2863 | 0.60554 | |
| Defogl | 1 | 0.26662 | 0.26662 | 2.9573 | 0.11961 | |
| Dirad | 1 | 0.16376 | 0.16376 | 1.8164 | 0.21069 | |
| Vigoria | 1 | 0.42421 | 0.42421 | 4.7052 | 0.05819 | . |
| N_Gemme:Defogl | 1 | 0.21388 | 0.21388 | 2.3723 | 0.15789 | |
| N_Gemme:Dirad | 1 | 0.00023 | 0.00023 | 0.0025 | 0.96107 | |
| Defogl:Dirad | 1 | 0.01799 | 0.01799 | 0.1996 | 0.66561 | |
| N_Gemme:Vigoria | 1 | 0.19869 | 0.19869 | 2.2038 | 0.17183 | |
| Defogl:Vigoria | 1 | 0.29138 | 0.29138 | 3.2319 | 0.10576 | |
| Dirad:Vigoria | 1 | 0.00671 | 0.00671 | 0.0744 | 0.79115 | |
| N_Gemme:Defogl:Dirad | 1 | 0.05917 | 0.05917 | 0.6564 | 0.43874 | |
| Residuals | 9 | 0.81140 | 0.09016 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: 0.637

PhB

Analysis of Variance Table

Response: Do_2008M[, 27]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.0001284 | 0.0001284 | 0.0383 | 0.84922 | |
| IASMA_2 | 1 | 0.0107116 | 0.0107116 | 3.1950 | 0.10750 | |
| IASMA_3 | 1 | 0.0002323 | 0.0002323 | 0.0693 | 0.79829 | |
| N_Gemme | 1 | 0.0023678 | 0.0023678 | 0.7062 | 0.42246 | |
| Defogl | 1 | 0.0017956 | 0.0017956 | 0.5356 | 0.48289 | |
| Dirad | 1 | 0.0014294 | 0.0014294 | 0.4264 | 0.53011 | |
| Vigoria | 1 | 0.0158830 | 0.0158830 | 4.7375 | 0.05749 | . |
| N_Gemme:Defogl | 1 | 0.0118436 | 0.0118436 | 3.5326 | 0.09288 | . |
| N_Gemme:Dirad | 1 | 0.0004465 | 0.0004465 | 0.1332 | 0.72359 | |
| Defogl:Dirad | 1 | 0.0007976 | 0.0007976 | 0.2379 | 0.63739 | |
| N_Gemme:Vigoria | 1 | 0.0161460 | 0.0161460 | 4.8159 | 0.05584 | . |
| Defogl:Vigoria | 1 | 0.0004208 | 0.0004208 | 0.1255 | 0.73128 | |
| Dirad:Vigoria | 1 | 0.0160888 | 0.0160888 | 4.7989 | 0.05619 | . |
| N_Gemme:Defogl:Dirad | 1 | 0.0044588 | 0.0044588 | 1.3299 | 0.27852 | |
| Residuals | 9 | 0.0301737 | 0.0033526 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

AcTitolB

Analysis of Variance Table

```
Response: Do_2008M[, 28]
                     Df  Sum Sq  Mean Sq F value Pr(>F)
IASMA_1               1 0.00635 0.006353  0.0998 0.7593
IASMA_2               1 0.09606 0.096060  1.5093 0.2504
IASMA_3               1 0.00112 0.001122  0.0176 0.8973
N_Gemme               1 0.03175 0.031747  0.4988 0.4979
Defogl                1 0.15972 0.159717  2.5095 0.1476
Dirad                 1 0.02515 0.025146  0.3951 0.5453
Vigoria               1 0.20063 0.200630  3.1523 0.1096
N_Gemme:Defogl        1 0.05556 0.055561  0.8730 0.3745
N_Gemme:Dirad         1 0.05116 0.051164  0.8039 0.3933
Defogl:Dirad          1 0.01244 0.012437  0.1954 0.6689
N_Gemme:Vigoria       1 0.00025 0.000252  0.0040 0.9512
Defogl:Vigoria        1 0.05650 0.056504  0.8878 0.3707
Dirad:Vigoria         1 0.01036 0.010364  0.1628 0.6960
N_Gemme:Defogl:Dirad  1 0.00847 0.008469  0.1331 0.7237
Residuals             9 0.57281 0.063645

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


AcTartB

Analysis of Variance Table

Response: Do_2008M[, 29]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.045662 0.045662  1.8311 0.20901
IASMA_2               1 0.001700 0.001700  0.0682 0.79989
IASMA_3               1 0.102977 0.102977  4.1294 0.07269 .
N_Gemme               1 0.004608 0.004608  0.1848 0.67740
Defogl                1 0.102943 0.102943  4.1281 0.07273 .
Dirad                 1 0.019030 0.019030  0.7631 0.40506
Vigoria               1 0.005055 0.005055  0.2027 0.66320
N_Gemme:Defogl        1 0.015161 0.015161  0.6080 0.45557
N_Gemme:Dirad         1 0.025630 0.025630  1.0278 0.33715
Defogl:Dirad          1 0.010325 0.010325  0.4140 0.53597
N_Gemme:Vigoria       1 0.001586 0.001586  0.0636 0.80655
Defogl:Vigoria        1 0.007290 0.007290  0.2924 0.60184
Dirad:Vigoria         1 0.095684 0.095684  3.8370 0.08180 .
N_Gemme:Defogl:Dirad  1 0.001613 0.001613  0.0647 0.80498
Residuals             9 0.224434 0.024937
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


AcMalicoB

Analysis of Variance Table

Response: Do_2008M[, 30]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1 0.20174 0.20174  2.9711 0.11886
IASMA_2               1 0.00207 0.00207  0.0306 0.86510
IASMA_3               1 0.00842 0.00842  0.1240 0.73282
```

```
N_Gemme              1 0.01359 0.01359  0.2001 0.66518
Defogl               1 0.25374 0.25374  3.7369 0.08525 .
Dirad                1 0.00047 0.00047  0.0069 0.93564
Vigoria              1 0.00187 0.00187  0.0275 0.87194
N_Gemme:Defogl       1 0.18602 0.18602  2.7396 0.13227
N_Gemme:Dirad        1 0.04563 0.04563  0.6720 0.43351
Defogl:Dirad         1 0.02606 0.02606  0.3838 0.55095
N_Gemme:Vigoria      1 0.12131 0.12131  1.7866 0.21414
Defogl:Vigoria       1 0.08002 0.08002  1.1784 0.30589
Dirad:Vigoria        1 0.70289 0.70289 10.3517 0.01053 *
N_Gemme:Defogl:Dirad 1 0.13538 0.13538  1.9938 0.19158
Residuals            9 0.61111 0.06790
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


KB

Analysis of Variance Table

Response: Do_2008M[, 31]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.010043 0.010043  0.4536 0.51755
IASMA_2               1 0.042231 0.042231  1.9074 0.20057
IASMA_3               1 0.002288 0.002288  0.1034 0.75518
N_Gemme               1 0.069744 0.069744  3.1502 0.10966
Defogl                1 0.019362 0.019362  0.8745 0.37411
Dirad                 1 0.013922 0.013922  0.6288 0.44819
Vigoria               1 0.080668 0.080668  3.6436 0.08863 .
N_Gemme:Defogl        1 0.082206 0.082206  3.7130 0.08610 .
N_Gemme:Dirad         1 0.004869 0.004869  0.2199 0.65027
Defogl:Dirad          1 0.008060 0.008060  0.3641 0.56116
N_Gemme:Vigoria       1 0.120480 0.120480  5.4418 0.04455 *
Defogl:Vigoria        1 0.000000 0.000000  0.0000 0.99801
Dirad:Vigoria         1 0.184026 0.184026  8.3119 0.01809 *
N_Gemme:Defogl:Dirad  1 0.072932 0.072932  3.2941 0.10292
Residuals             9 0.199259 0.022140
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


ApaB

Analysis of Variance Table

Response: Do_2008M[, 32]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1 1123.76 1123.76  5.8477 0.03872 *
IASMA_2               1 1040.97 1040.97  5.4169 0.04494 *
IASMA_3               1   56.51   56.51  0.2941 0.60078
N_Gemme               1   56.65   56.65  0.2948 0.60035
Defogl                1 1072.97 1072.97  5.5834 0.04240 *
Dirad                 1    9.39    9.39  0.0488 0.83001
```

```
Vigoria              1  854.96  854.96  4.4489 0.06415 .
N_Gemme:Defogl       1  456.98  456.98  2.3780 0.15745
N_Gemme:Dirad        1   13.46   13.46  0.0700 0.79726
Defogl:Dirad         1   35.64   35.64  0.1855 0.67686
N_Gemme:Vigoria      1  380.89  380.89  1.9820 0.19277
Defogl:Vigoria       1  174.60  174.60  0.9085 0.36540
Dirad:Vigoria        1 1119.22 1119.22  5.8241 0.03904 *
N_Gemme:Defogl:Dirad 1  199.81  199.81  1.0397 0.33451
Residuals            9 1729.54  192.17
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.628
IASMA_2: 0.613
IASMA_3: n.s


Antoctot1B

Analysis of Variance Table

Response: Do_2008M[, 33]
                     Df Sum Sq Mean Sq F value Pr(>F)
IASMA_1               1  16456 16455.9  2.9364 0.1208
IASMA_2               1    135   135.3  0.0241 0.8799
IASMA_3               1   3752  3752.0  0.6695 0.4344
N_Gemme               1   1154  1154.2  0.2059 0.6607
Defogl                1    174   174.2  0.0311 0.8640
Dirad                 1   2474  2474.4  0.4415 0.5230
Vigoria               1    706   705.5  0.1259 0.7309
N_Gemme:Defogl        1    613   613.2  0.1094 0.7484
N_Gemme:Dirad         1   1516  1515.9  0.2705 0.6156
Defogl:Dirad          1    207   207.0  0.0369 0.8519
N_Gemme:Vigoria       1   6914  6914.1  1.2337 0.2955
Defogl:Vigoria        1   1821  1820.6  0.3249 0.5826
Dirad:Vigoria         1   3881  3880.7  0.6925 0.4269
N_Gemme:Defogl:Dirad  1   6938  6938.4  1.2381 0.2947
Residuals             9  50437  5604.1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


Poliftot1B

Analysis of Variance Table

Response: Do_2008M[, 34]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1  48537   48537  1.2764 0.28777
IASMA_2               1  23820   23820  0.6264 0.44903
IASMA_3               1 298823  298823  7.8584 0.02060 *
N_Gemme               1  19098   19098  0.5022 0.49647
Defogl                1  29408   29408  0.7734 0.40205
Dirad                 1  39558   39558  1.0403 0.33439
Vigoria               1      9       9  0.0002 0.98789
N_Gemme:Defogl        1   5092    5092  0.1339 0.72288
N_Gemme:Dirad         1   1516    1516  0.0399 0.84619
Defogl:Dirad          1   3894    3894  0.1024 0.75627
N_Gemme:Vigoria       1   6564    6564  0.1726 0.68753
```

```
Defogl:Vigoria        1  48449   48449  1.2741 0.28819
Dirad:Vigoria         1  60166   60166  1.5822 0.24009
N_Gemme:Defogl:Dirad  1 165702  165702  4.3576 0.06645 .
Residuals             9 342233   38026
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: -0.683


Antoctot2B

Analysis of Variance Table

Response: Do_2008M[, 35]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1   5151  5150.7  0.7199 0.41818
IASMA_2               1  12112 12112.1  1.6928 0.22556
IASMA_3               1   2647  2646.9  0.3699 0.55808
N_Gemme               1    412   411.8  0.0576 0.81578
Defogl                1  29547 29547.0  4.1294 0.07269 .
Dirad                 1    275   275.2  0.0385 0.84888
Vigoria               1    477   476.8  0.0666 0.80211
N_Gemme:Defogl        1     70    69.7  0.0097 0.92355
N_Gemme:Dirad         1   6158  6158.2  0.8607 0.37776
Defogl:Dirad          1    164   163.6  0.0229 0.88314
N_Gemme:Vigoria       1   1464  1463.9  0.2046 0.66174
Defogl:Vigoria        1    966   966.0  0.1350 0.72179
Dirad:Vigoria         1  12655 12654.6  1.7686 0.21628
N_Gemme:Defogl:Dirad  1   4152  4152.1  0.5803 0.46569
Residuals             9  64397  7155.2
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


Poliftot2B

Analysis of Variance Table

Response: Do_2008M[, 36]
                     Df Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1  11653   11653  0.2294 0.64337
IASMA_2               1  99684   99684  1.9625 0.19476
IASMA_3               1 382211  382211  7.5249 0.02273 *
N_Gemme               1   3751    3751  0.0738 0.79195
Defogl                1   8633    8633  0.1700 0.68978
Dirad                 1  31210   31210  0.6144 0.45325
Vigoria               1   2624    2624  0.0517 0.82528
N_Gemme:Defogl        1    144     144  0.0028 0.95869
N_Gemme:Dirad         1  12577   12577  0.2476 0.63069
Defogl:Dirad          1   5870    5870  0.1156 0.74168
N_Gemme:Vigoria       1  47155   47155  0.9284 0.36046
Defogl:Vigoria        1  21465   21465  0.4226 0.53188
Dirad:Vigoria         1 131034  131034  2.5798 0.14270
N_Gemme:Defogl:Dirad  1 187077  187077  3.6831 0.08718 .
```

```
Residuals             9 457136   50793
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: -0.675
```

DONNA OLIMPIA 2009M IBIMET

PvinacciaA

Analysis of Variance Table

```
Response: Do_2009M[, 11]
                     Df  Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_1              1     553     553  0.0166 0.9002841    
IBIMET_2              1  112313  112313  3.3724 0.0994759 .  
IBIMET_3              1  285220  285220  8.5644 0.0168528 *  
N_Gemme               1  719333  719333 21.5996 0.0012063 ** 
Defogl                1  338452  338452 10.1628 0.0110436 *  
Dirad                 1 1274630 1274630 38.2736 0.0001615 ***
Vigoria               1  100789  100789  3.0264 0.1159139    
N_Gemme:Defogl        1   21957   21957  0.6593 0.4377555    
N_Gemme:Dirad         1   46319   46319  1.3908 0.2685017    
Defogl:Dirad          1   38729   38729  1.1629 0.3089153    
N_Gemme:Vigoria       1    1220    1220  0.0366 0.8524734    
Defogl:Vigoria        1       5       5  0.0002 0.9904372    
Dirad:Vigoria         1    8113    8113  0.2436 0.6334202    
N_Gemme:Defogl:Dirad  1   47193   47193  1.4171 0.2643352    
Residuals             9  299728   33303                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: 0.698
```

DensMostoA

Analysis of Variance Table

```
Response: Do_2009M[, 12]
                     Df     Sum Sq    Mean Sq F value   Pr(>F)   
IBIMET_1              1 1.6786e-06 1.6786e-06  1.0281 0.337077   
IBIMET_2              1 1.1795e-05 1.1795e-05  7.2249 0.024882 * 
IBIMET_3              1 2.9653e-06 2.9653e-06  1.8163 0.210695   
N_Gemme               1 1.7594e-05 1.7594e-05 10.7763 0.009488 **
Defogl                1 1.5082e-05 1.5082e-05  9.2380 0.014031 * 
Dirad                 1 1.1533e-05 1.1533e-05  7.0642 0.026138 * 
Vigoria               1 1.7218e-06 1.7218e-06  1.0546 0.331249   
N_Gemme:Defogl        1 3.1430e-07 3.1430e-07  0.1925 0.671194   
N_Gemme:Dirad         1 1.8500e-07 1.8500e-07  0.1133 0.744122   
Defogl:Dirad          1 8.7390e-07 8.7390e-07  0.5353 0.483017   
N_Gemme:Vigoria       1 4.9000e-09 4.9000e-09  0.0030 0.957385   
Defogl:Vigoria        1 3.3780e-07 3.3780e-07  0.2069 0.659966   
Dirad:Vigoria         1 8.4310e-07 8.4310e-07  0.5164 0.490600   
N_Gemme:Defogl:Dirad  1 1.6398e-06 1.6398e-06  1.0044 0.342432   
Residuals             9 1.4693e-05 1.6326e-06                    
```

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: -0.667
IBIMET_3: n.s


BrixA

Analysis of Variance Table

Response: Do_2009M[, 13]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1              1 0.02782 0.02782  0.3534 0.566832
IBIMET_2              1 0.50951 0.50951  6.4718 0.031505 *
IBIMET_3              1 0.13346 0.13346  1.6953 0.225244
N_Gemme               1 0.87274 0.87274 11.0855 0.008806 **
Defogl                1 0.75465 0.75465  9.5855 0.012804 *
Dirad                 1 0.60865 0.60865  7.7310 0.021384 *
Vigoria               1 0.15066 0.15066  1.9137 0.199905
N_Gemme:Defogl        1 0.01932 0.01932  0.2454 0.632174
N_Gemme:Dirad         1 0.00743 0.00743  0.0943 0.765730
Defogl:Dirad          1 0.05506 0.05506  0.6994 0.424645
N_Gemme:Vigoria       1 0.00022 0.00022  0.0028 0.958856
Defogl:Vigoria        1 0.01610 0.01610  0.2044 0.661859
Dirad:Vigoria         1 0.02562 0.02562  0.3254 0.582347
N_Gemme:Defogl:Dirad  1 0.05684 0.05684  0.7220 0.417507
Residuals             9 0.70855 0.07873
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: -0.647
IBIMET_3: n.s


PhA

Analysis of Variance Table

Response: Do_2009M[, 14]
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
IBIMET_1              1 0.072763 0.072763 81.0178 8.53e-06 ***
IBIMET_2              1 0.000059 0.000059  0.0662  0.80268
IBIMET_3              1 0.002681 0.002681  2.9850  0.11811
N_Gemme               1 0.007220 0.007220  8.0389  0.01955 *
Defogl                1 0.002176 0.002176  2.4229  0.15400
Dirad                 1 0.008323 0.008323  9.2678  0.01392 *
Vigoria               1 0.000216 0.000216  0.2401  0.63583
N_Gemme:Defogl        1 0.000579 0.000579  0.6450  0.44260
N_Gemme:Dirad         1 0.002296 0.002296  2.5567  0.14429
Defogl:Dirad          1 0.000497 0.000497  0.5529  0.47611
N_Gemme:Vigoria       1 0.004323 0.004323  4.8134  0.05589 .
Defogl:Vigoria        1 0.002121 0.002121  2.3621  0.15869
Dirad:Vigoria         1 0.001181 0.001181  1.3149  0.28108
N_Gemme:Defogl:Dirad  1 0.000615 0.000615  0.6845  0.42944
Residuals             9 0.008083 0.000898
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
IBIMET_1: 0.949
IBIMET_2: n.s
IBIMET_3: n.s


AcTitolA

Analysis of Variance Table

Response: Do_2009M[, 15]
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
IBIMET_1              1 0.100453 0.100453  6.5081 0.031139 *
IBIMET_2              1 0.025009 0.025009  1.6203 0.234948
IBIMET_3              1 0.003863 0.003863  0.2503 0.628901
N_Gemme               1 0.230452 0.230452 14.9303 0.003824 **
Defogl                1 0.084672 0.084672  5.4856 0.043866 *
Dirad                 1 0.200213 0.200213 12.9712 0.005734 **
Vigoria               1 0.000084 0.000084  0.0054 0.942822
N_Gemme:Defogl        1 0.038920 0.038920  2.5215 0.146766
N_Gemme:Dirad         1 0.041357 0.041357  2.6794 0.136080
Defogl:Dirad          1 0.013313 0.013313  0.8625 0.377276
N_Gemme:Vigoria       1 0.067607 0.067607  4.3801 0.065876 .
Defogl:Vigoria        1 0.022403 0.022403  1.4514 0.259022
Dirad:Vigoria         1 0.022259 0.022259  1.4421 0.260446
N_Gemme:Defogl:Dirad  1 0.007040 0.007040  0.4561 0.516415
Residuals             9 0.138917 0.015435
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.648
IBIMET_2: n.s
IBIMET_3: n.s


AcTartA

Analysis of Variance Table

Response: Do_2009M[, 16]
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
IBIMET_1              1 0.278126 0.278126 43.7441 9.77e-05 ***
IBIMET_2              1 0.093682 0.093682 14.7345 0.003975 **
IBIMET_3              1 0.006546 0.006546  1.0296 0.336762
N_Gemme               1 0.141792 0.141792 22.3012 0.001085 **
Defogl                1 0.005361 0.005361  0.8431 0.382456
Dirad                 1 0.097155 0.097155 15.2806 0.003570 **
Vigoria               1 0.001002 0.001002  0.1576 0.700670
N_Gemme:Defogl        1 0.005407 0.005407  0.8504 0.380491
N_Gemme:Dirad         1 0.073157 0.073157 11.5063 0.007973 **
Defogl:Dirad          1 0.000083 0.000083  0.0131 0.911517
N_Gemme:Vigoria       1 0.023364 0.023364  3.6747 0.087482 .
Defogl:Vigoria        1 0.015110 0.015110  2.3765 0.157567
Dirad:Vigoria         1 0.001638 0.001638  0.2577 0.623944
N_Gemme:Defogl:Dirad  1 0.038054 0.038054  5.9852 0.036971 *
Residuals             9 0.057222 0.006358
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.911
IBIMET_2: 0.788
IBIMET_3: n.s
```

AcMalicoA

```
Analysis of Variance Table

Response: Do_2009M[, 17]
                    Df  Sum Sq Mean Sq F value   Pr(>F)    
IBIMET_1             1 0.54806 0.54806 23.1817 0.000954 ***
IBIMET_2             1 0.10271 0.10271  4.3442 0.066800 .  
IBIMET_3             1 0.10714 0.10714  4.5320 0.062138 .  
N_Gemme              1 0.00000 0.00000  0.0000 0.996432    
Defogl               1 0.05443 0.05443  2.3024 0.163487    
Dirad                1 0.00500 0.00500  0.2117 0.656375    
Vigoria              1 0.10786 0.10786  4.5622 0.061425 .  
N_Gemme:Defogl       1 0.01418 0.01418  0.5999 0.458471    
N_Gemme:Dirad        1 0.08196 0.08196  3.4668 0.095520 .  
Defogl:Dirad         1 0.01673 0.01673  0.7076 0.422020    
N_Gemme:Vigoria      1 0.06033 0.06033  2.5519 0.144626    
Defogl:Vigoria       1 0.01706 0.01706  0.7218 0.417580    
Dirad:Vigoria        1 0.00039 0.00039  0.0163 0.901193    
N_Gemme:Defogl:Dirad 1 0.08672 0.08672  3.6683 0.087718 .  
Residuals            9 0.21278 0.02364                     
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.849
IBIMET_2: n.s
IBIMET_3: n.s
```

KA

```
Analysis of Variance Table

Response: Do_2009M[, 18]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_1             1 0.46924 0.46924 79.3112 9.306e-06 ***
IBIMET_2             1 0.02164 0.02164  3.6578   0.08810 .  
IBIMET_3             1 0.05243 0.05243  8.8616   0.01553 *  
N_Gemme              1 0.02399 0.02399  4.0547   0.07489 .  
Defogl               1 0.00213 0.00213  0.3594   0.56364    
Dirad                1 0.03988 0.03988  6.7405   0.02892 *  
Vigoria              1 0.03084 0.03084  5.2126   0.04832 *  
N_Gemme:Defogl       1 0.00045 0.00045  0.0758   0.78928    
N_Gemme:Dirad        1 0.03753 0.03753  6.3434   0.03284 *  
Defogl:Dirad         1 0.00054 0.00054  0.0920   0.76849    
N_Gemme:Vigoria      1 0.00014 0.00014  0.0229   0.88307    
Defogl:Vigoria       1 0.00004 0.00004  0.0062   0.93909    
Dirad:Vigoria        1 0.00355 0.00355  0.6000   0.45845    
N_Gemme:Defogl:Dirad 1 0.00178 0.00178  0.3008   0.59670    
Residuals            9 0.05325 0.00592                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.948
IBIMET_2: n.s
IBIMET_3: 0.704
```

ApaA

```
Analysis of Variance Table

Response: Do_2009M[, 19]
                    Df  Sum Sq Mean Sq F value    Pr(>F)    
IBIMET_1             1  170.16  170.16  2.0280 0.1881534    
IBIMET_2             1 1806.28 1806.28 21.5282 0.0012195 ** 
IBIMET_3             1    0.24    0.24  0.0029 0.9583130    
N_Gemme              1  115.13  115.13  1.3722 0.2715097    
Defogl               1 2518.90 2518.90 30.0216 0.0003906 ***
Dirad                1  133.71  133.71  1.5936 0.2385350    
Vigoria              1  129.62  129.62  1.5449 0.2452951    
N_Gemme:Defogl       1   35.71   35.71  0.4256 0.5304848    
N_Gemme:Dirad        1  416.98  416.98  4.9697 0.0527579 .  
Defogl:Dirad         1   78.36   78.36  0.9340 0.3590858    
N_Gemme:Vigoria      1   17.06   17.06  0.2033 0.6627047    
Defogl:Vigoria       1    3.80    3.80  0.0453 0.8362752    
Dirad:Vigoria        1  269.52  269.52  3.2123 0.1066850    
N_Gemme:Defogl:Dirad 1   22.15   22.15  0.2640 0.6197872    
Residuals            9  755.13   83.90                      
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: 0.84
IBIMET_3: n.s
```

Antoctot1A

```
Analysis of Variance Table

Response: Do_2009M[, 20]
                    Df Sum Sq Mean Sq F value   Pr(>F)   
IBIMET_1             1      3       3  0.0012 0.973610   
IBIMET_2             1  55747   55747 20.1260 0.001519 **
IBIMET_3             1   5349    5349  1.9311 0.198051   
N_Gemme              1   9793    9793  3.5355 0.092761 . 
Defogl               1  12101   12101  4.3688 0.066166 . 
Dirad                1  14006   14006  5.0566 0.051113 . 
Vigoria              1      5       5  0.0019 0.966220   
N_Gemme:Defogl       1   1031    1031  0.3722 0.556882   
N_Gemme:Dirad        1   4949    4949  1.7869 0.214114   
Defogl:Dirad         1    780     780  0.2817 0.608410   
N_Gemme:Vigoria      1    504     504  0.1820 0.679682   
Defogl:Vigoria       1   5890    5890  2.1264 0.178771   
Dirad:Vigoria        1   2452    2452  0.8852 0.371353   
N_Gemme:Defogl:Dirad 1   3874    3874  1.3985 0.267270   
Residuals            9  24929    2770                    
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: 0.831
IBIMET_3: n.s
```

Poliftot1A

```
Analysis of Variance Table
```

```
Response: Do_2009M[, 21]
                    Df  Sum Sq Mean Sq F value  Pr(>F)  
IBIMET_1             1  7762.3  7762.3  3.0759 0.11336  
IBIMET_2             1 16818.5 16818.5  6.6646 0.02962 *
IBIMET_3             1     4.2     4.2  0.0017 0.96846  
N_Gemme              1 10893.9 10893.9  4.3169 0.06752 .
Defogl               1 12467.4 12467.4  4.9404 0.05333 .
Dirad                1 24807.0 24807.0  9.8301 0.01202 *
Vigoria              1   210.5   210.5  0.0834 0.77928  
N_Gemme:Defogl       1   805.1   805.1  0.3190 0.58599  
N_Gemme:Dirad        1   514.9   514.9  0.2040 0.66218  
Defogl:Dirad         1    88.3    88.3  0.0350 0.85573  
N_Gemme:Vigoria      1   200.1   200.1  0.0793 0.78462  
Defogl:Vigoria       1  3817.1  3817.1  1.5126 0.24992  
Dirad:Vigoria        1    48.2    48.2  0.0191 0.89312  
N_Gemme:Defogl:Dirad 1   867.7   867.7  0.3438 0.57204  
Residuals            9 22712.1  2523.6                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: 0.652
IBIMET_3: n.s
```

Antoctot2A

Analysis of Variance Table

```
Response: Do_2009M[, 22]
                    Df Sum Sq Mean Sq F value  Pr(>F)   
IBIMET_1             1      0       0  0.0000 0.99951   
IBIMET_2             1 121739  121739 12.6875 0.00610 **
IBIMET_3             1  35556   35556  3.7057 0.08636 . 
N_Gemme              1   1409    1409  0.1468 0.71046   
Defogl               1   6299    6299  0.6565 0.43871   
Dirad                1   3853    3853  0.4015 0.54207   
Vigoria              1   1910    1910  0.1991 0.66601   
N_Gemme:Defogl       1   5886    5886  0.6134 0.45362   
N_Gemme:Dirad        1  21831   21831  2.2752 0.16573   
Defogl:Dirad         1    542     542  0.0565 0.81745   
N_Gemme:Vigoria      1   5084    5084  0.5298 0.48519   
Defogl:Vigoria       1  10634   10634  1.1083 0.31990   
Dirad:Vigoria        1   8906    8906  0.9282 0.36051   
N_Gemme:Defogl:Dirad 1   1004    1004  0.1046 0.75376   
Residuals            9  86356    9595                   
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: 0.765
IBIMET_3: n.s
```

Poliftot2A

Analysis of Variance Table

```
Response: Do_2009M[, 23]
                    Df Sum Sq Mean Sq F value  Pr(>F)  
IBIMET_1             1  26503 26502.9  4.8936 0.05426 .
```

```
IBIMET_2             1  15139 15138.9  2.7953 0.12887
IBIMET_3             1   4999  4999.2  0.9231 0.36177
N_Gemme              1     70    70.5  0.0130 0.91168
Defogl               1   1731  1730.5  0.3195 0.58571
Dirad                1   5258  5258.3  0.9709 0.35020
Vigoria              1    274   274.3  0.0506 0.82698
N_Gemme:Defogl       1   5199  5199.2  0.9600 0.35279
N_Gemme:Dirad        1   4412  4412.2  0.8147 0.39026
Defogl:Dirad         1    689   689.1  0.1272 0.72954
N_Gemme:Vigoria      1   3554  3554.0  0.6562 0.43879
Defogl:Vigoria       1   4064  4064.4  0.7505 0.40883
Dirad:Vigoria        1      1     0.8  0.0002 0.99047
N_Gemme:Defogl:Dirad 1   3812  3812.4  0.7039 0.42319
Residuals            9  48743  5415.9
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: n.s
```

PvinacciaB

Analysis of Variance Table

```
Response: Do_2009M[, 24]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1              1  189332  189332  2.9798 0.1183867
IBIMET_2              1    2430    2430  0.0382 0.8492874
IBIMET_3              1  787936  787936 12.4010 0.0065001 **
N_Gemme               1 1175103 1175103 18.4944 0.0019891 **
Defogl                1  471415  471415  7.4194 0.0234592 *
Dirad                 1 1644555 1644555 25.8829 0.0006561 ***
Vigoria               1   21848   21848  0.3439 0.5720257
N_Gemme:Defogl        1   76774   76774  1.2083 0.3002004
N_Gemme:Dirad         1  316014  316014  4.9736 0.0526832 .
Defogl:Dirad          1   26326   26326  0.4143 0.5358351
N_Gemme:Vigoria       1   54431   54431  0.8567 0.3788233
Defogl:Vigoria        1   17846   17846  0.2809 0.6089590
Dirad:Vigoria         1     971     971  0.0153 0.9043192
N_Gemme:Defogl:Dirad  1   90948   90948  1.4314 0.2621028
Residuals             9  571844   63538
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: 0.761
```

DensMostoB

Analysis of Variance Table

```
Response: Do_2009M[, 25]
                     Df     Sum Sq    Mean Sq F value Pr(>F)
IBIMET_1              1 2.4303e-05 2.4303e-05  2.7781 0.1299
IBIMET_2              1 2.7070e-06 2.7068e-06  0.3094 0.5916
IBIMET_3              1 4.5080e-06 4.5084e-06  0.5154 0.4910
N_Gemme               1 1.0550e-06 1.0548e-06  0.1206 0.7364
```

| | | | | | |
|---|---|---|---|---|---|
| Defogl | 1 | 8.1000e-08 | 8.1100e-08 | 0.0093 | 0.9254 |
| Dirad | 1 | 1.6790e-06 | 1.6793e-06 | 0.1920 | 0.6716 |
| Vigoria | 1 | 8.4360e-06 | 8.4362e-06 | 0.9644 | 0.3518 |
| N_Gemme:Defogl | 1 | 3.9560e-06 | 3.9559e-06 | 0.4522 | 0.5182 |
| N_Gemme:Dirad | 1 | 7.3080e-06 | 7.3084e-06 | 0.8354 | 0.3845 |
| Defogl:Dirad | 1 | 1.4150e-06 | 1.4154e-06 | 0.1618 | 0.6969 |
| N_Gemme:Vigoria | 1 | 5.7900e-07 | 5.7930e-07 | 0.0662 | 0.8027 |
| Defogl:Vigoria | 1 | 9.9100e-07 | 9.9100e-07 | 0.1133 | 0.7441 |
| Dirad:Vigoria | 1 | 7.4100e-06 | 7.4104e-06 | 0.8471 | 0.3814 |
| N_Gemme:Defogl:Dirad | 1 | 1.1890e-06 | 1.1888e-06 | 0.1359 | 0.7209 |
| Residuals | 9 | 7.8732e-05 | 8.7480e-06 | | |

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: n.s

BrixB

Analysis of Variance Table

Response: Do_2009M[, 26]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| IBIMET_1 | 1 | 1.2499 | 1.24986 | 2.8298 | 0.1268 |
| IBIMET_2 | 1 | 0.1301 | 0.13013 | 0.2946 | 0.6004 |
| IBIMET_3 | 1 | 0.2454 | 0.24544 | 0.5557 | 0.4750 |
| N_Gemme | 1 | 0.0736 | 0.07364 | 0.1667 | 0.6926 |
| Defogl | 1 | 0.0003 | 0.00031 | 0.0007 | 0.9795 |
| Dirad | 1 | 0.0652 | 0.06524 | 0.1477 | 0.7096 |
| Vigoria | 1 | 0.3665 | 0.36653 | 0.8299 | 0.3861 |
| N_Gemme:Defogl | 1 | 0.2089 | 0.20891 | 0.4730 | 0.5089 |
| N_Gemme:Dirad | 1 | 0.3486 | 0.34863 | 0.7893 | 0.3974 |
| Defogl:Dirad | 1 | 0.1000 | 0.10000 | 0.2264 | 0.6455 |
| N_Gemme:Vigoria | 1 | 0.0420 | 0.04202 | 0.0951 | 0.7648 |
| Defogl:Vigoria | 1 | 0.0338 | 0.03377 | 0.0765 | 0.7884 |
| Dirad:Vigoria | 1 | 0.3519 | 0.35186 | 0.7967 | 0.3953 |
| N_Gemme:Defogl:Dirad | 1 | 0.0901 | 0.09008 | 0.2040 | 0.6622 |
| Residuals | 9 | 3.9751 | 0.44167 | | |

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: n.s

PhB

Analysis of Variance Table

Response: Do_2009M[, 27]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 0.090220 | 0.090220 | 23.3689 | 0.0009285 | *** |
| IBIMET_2 | 1 | 0.005195 | 0.005195 | 1.3456 | 0.2758890 | |
| IBIMET_3 | 1 | 0.000005 | 0.000005 | 0.0014 | 0.9714644 | |
| N_Gemme | 1 | 0.010807 | 0.010807 | 2.7992 | 0.1286417 | |
| Defogl | 1 | 0.002026 | 0.002026 | 0.5247 | 0.4872398 | |
| Dirad | 1 | 0.005164 | 0.005164 | 1.3375 | 0.2772499 | |
| Vigoria | 1 | 0.001109 | 0.001109 | 0.2873 | 0.6049627 | |
| N_Gemme:Defogl | 1 | 0.000628 | 0.000628 | 0.1627 | 0.6960836 | |
| N_Gemme:Dirad | 1 | 0.004461 | 0.004461 | 1.1555 | 0.3103684 | |
| Defogl:Dirad | 1 | 0.002457 | 0.002457 | 0.6365 | 0.4455368 | |
| N_Gemme:Vigoria | 1 | 0.000007 | 0.000007 | 0.0019 | 0.9658450 | |

```
Defogl:Vigoria        1 0.000357 0.000357  0.0926 0.7678562
Dirad:Vigoria         1 0.003952 0.003952  1.0236 0.3380875
N_Gemme:Defogl:Dirad  1 0.004410 0.004410  1.1424 0.3129756
Residuals             9 0.034746 0.003861
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: 0.85
IBIMET_2: n.s
IBIMET_3: n.s
```

AcTitolB

Analysis of Variance Table

```
Response: Do_2009M[, 28]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1              1 0.37572 0.37572 16.6103 0.0027763 **
IBIMET_2              1 0.60121 0.60121 26.5794 0.0005987 ***
IBIMET_3              1 0.04717 0.04717  2.0854 0.1826031
N_Gemme               1 0.07087 0.07087  3.1329 0.1105042
Defogl                1 0.09915 0.09915  4.3832 0.0657965 .
Dirad                 1 0.17859 0.17859  7.8955 0.0203806 *
Vigoria               1 0.00503 0.00503  0.2224 0.6484323
N_Gemme:Defogl        1 0.03424 0.03424  1.5137 0.2497595
N_Gemme:Dirad         1 0.00730 0.00730  0.3226 0.5839487
Defogl:Dirad          1 0.00199 0.00199  0.0878 0.7737680
N_Gemme:Vigoria       1 0.00140 0.00140  0.0621 0.8088529
Defogl:Vigoria        1 0.00016 0.00016  0.0069 0.9356701
Dirad:Vigoria         1 0.00070 0.00070  0.0307 0.8647198
N_Gemme:Defogl:Dirad  1 0.03624 0.03624  1.6023 0.2373567
Residuals             9 0.20358 0.02262
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: -0.805
IBIMET_2: -0.864
IBIMET_3: n.s
```

AcTartB

Analysis of Variance Table

```
Response: Do_2009M[, 29]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1              1 0.65707 0.65707 16.1538 0.003022 **
IBIMET_2              1 0.58055 0.58055 14.2725 0.004363 **
IBIMET_3              1 0.00004 0.00004  0.0010 0.975063
N_Gemme               1 0.02756 0.02756  0.6776 0.431692
Defogl                1 0.01295 0.01295  0.3185 0.586317
Dirad                 1 0.08047 0.08047  1.9782 0.193156
Vigoria               1 0.01930 0.01930  0.4745 0.508272
N_Gemme:Defogl        1 0.00842 0.00842  0.2070 0.659886
N_Gemme:Dirad         1 0.00228 0.00228  0.0561 0.818028
Defogl:Dirad          1 0.04207 0.04207  1.0343 0.335711
N_Gemme:Vigoria       1 0.00236 0.00236  0.0581 0.814933
Defogl:Vigoria        1 0.02479 0.02479  0.6096 0.454999
Dirad:Vigoria         1 0.04160 0.04160  1.0228 0.338265
N_Gemme:Defogl:Dirad  1 0.00113 0.00113  0.0279 0.871136
```

```
Residuals             9 0.36608 0.04068
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: -0.801
IBIMET_2: -0.783
IBIMET_3: n.s

AcMalicoB

```
Analysis of Variance Table

Response: Do_2009M[, 30]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1              1 0.06084 0.06084  1.1079 0.319973
IBIMET_2              1 0.58103 0.58103 10.5809 0.009952 **
IBIMET_3              1 0.07510 0.07510  1.3677 0.272252
N_Gemme               1 0.01112 0.01112  0.2025 0.663364
Defogl                1 0.01062 0.01062  0.1934 0.670468
Dirad                 1 0.01287 0.01287  0.2344 0.639852
Vigoria               1 0.11871 0.11871  2.1617 0.175560
N_Gemme:Defogl        1 0.10224 0.10224  1.8618 0.205555
N_Gemme:Dirad         1 0.04707 0.04707  0.8572 0.378686
Defogl:Dirad          1 0.06592 0.06592  1.2005 0.301676
N_Gemme:Vigoria       1 0.01439 0.01439  0.2621 0.621006
Defogl:Vigoria        1 0.00148 0.00148  0.0269 0.873350
Dirad:Vigoria         1 0.03423 0.03423  0.6234 0.450099
N_Gemme:Defogl:Dirad  1 0.03039 0.03039  0.5534 0.475902
Residuals             9 0.49421 0.05491
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IBIMET_1: n.s
IBIMET_2: -0.735
IBIMET_3: n.s

KB

```
Analysis of Variance Table

Response: Do_2009M[, 31]
                     Df  Sum Sq Mean Sq F value    Pr(>F)
IBIMET_1              1 0.62255 0.62255 60.5459 2.761e-05 ***
IBIMET_2              1 0.01720 0.01720  1.6729   0.22807
IBIMET_3              1 0.01856 0.01856  1.8048   0.21202
N_Gemme               1 0.01339 0.01339  1.3024   0.28324
Defogl                1 0.00375 0.00375  0.3644   0.56096
Dirad                 1 0.03199 0.03199  3.1115   0.11157
Vigoria               1 0.00222 0.00222  0.2155   0.65351
N_Gemme:Defogl        1 0.00473 0.00473  0.4602   0.51457
N_Gemme:Dirad         1 0.03067 0.03067  2.9823   0.11825
Defogl:Dirad          1 0.03837 0.03837  3.7321   0.08542 .
N_Gemme:Vigoria       1 0.00904 0.00904  0.8794   0.37284
Defogl:Vigoria        1 0.00007 0.00007  0.0066   0.93724
Dirad:Vigoria         1 0.01572 0.01572  1.5293   0.24752
N_Gemme:Defogl:Dirad  1 0.00166 0.00166  0.1617   0.69697
Residuals             9 0.09254 0.01028
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
IBIMET_1: 0.933
IBIMET_2: n.s
IBIMET_3: n.s


ApaB

Analysis of Variance Table

Response: Do_2009M[, 32]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IBIMET_1              1   86.97   86.97  0.5179 0.49001
IBIMET_2              1  126.84  126.84  0.7553 0.40738
IBIMET_3              1  122.55  122.55  0.7297 0.41513
N_Gemme               1  445.35  445.35  2.6519 0.13787
Defogl                1 1556.87 1556.87  9.2706 0.01391 *
Dirad                 1  200.13  200.13  1.1917 0.30334
Vigoria               1  114.97  114.97  0.6846 0.42940
N_Gemme:Defogl        1  526.37  526.37  3.1344 0.11044
N_Gemme:Dirad         1  763.44  763.44  4.5460 0.06181 .
Defogl:Dirad          1   33.05   33.05  0.1968 0.66777
N_Gemme:Vigoria       1   19.67   19.67  0.1171 0.74004
Defogl:Vigoria        1   35.52   35.52  0.2115 0.65650
Dirad:Vigoria         1  246.79  246.79  1.4696 0.25628
N_Gemme:Defogl:Dirad  1  166.76  166.76  0.9930 0.34505
Residuals             9 1511.43  167.94
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: n.s


Antoctot1B

Analysis of Variance Table

Response: Do_2009M[, 33]
                     Df Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1              1    420     420  0.2587 0.623229
IBIMET_2              1  37516   37516 23.1235 0.000962 ***
IBIMET_3              1    427     427  0.2633 0.620210
N_Gemme               1    669     669  0.4125 0.536720
Defogl                1  18996   18996 11.7084 0.007607 **
Dirad                 1   9177    9177  5.6564 0.041342 *
Vigoria               1  21520   21520 13.2643 0.005384 **
N_Gemme:Defogl        1   2642    2642  1.6281 0.233905
N_Gemme:Dirad         1   8331    8331  5.1349 0.049685 *
Defogl:Dirad          1   1001    1001  0.6168 0.452432
N_Gemme:Vigoria       1   5216    5216  3.2148 0.106567
Defogl:Vigoria        1   1475    1475  0.9089 0.365315
Dirad:Vigoria         1    579     579  0.3569 0.564960
N_Gemme:Defogl:Dirad  1   4880    4880  3.0081 0.116875
Residuals             9  14602    1622
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: 0.848
```

```
IBIMET_3: n.s


Poliftot1B

Analysis of Variance Table

Response: Do_2009M[, 34]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IBIMET_1              1  2167.8  2167.8  2.0419 0.18679
IBIMET_2              1  3998.5  3998.5  3.7662 0.08422 .
IBIMET_3              1   938.0   938.0  0.8835 0.37178
N_Gemme               1  3411.2  3411.2  3.2131 0.10665
Defogl                1 20371.4 20371.4 19.1883 0.00177 **
Dirad                 1  6607.1  6607.1  6.2234 0.03416 *
Vigoria               1  1224.0  1224.0  1.1529 0.31089
N_Gemme:Defogl        1    22.2    22.2  0.0209 0.88833
N_Gemme:Dirad         1  7570.1  7570.1  7.1304 0.02561 *
Defogl:Dirad          1  2160.3  2160.3  2.0349 0.18748
N_Gemme:Vigoria       1  2405.7  2405.7  2.2660 0.16650
Defogl:Vigoria        1  1095.9  1095.9  1.0322 0.33617
Dirad:Vigoria         1   755.2   755.2  0.7113 0.42085
N_Gemme:Defogl:Dirad  1  1006.3  1006.3  0.9478 0.35571
Residuals             9  9554.9  1061.7
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: n.s


Antoctot2B

Analysis of Variance Table

Response: Do_2009M[, 35]
                     Df Sum Sq Mean Sq F value   Pr(>F)
IBIMET_1              1    373     373  0.0474 0.832449
IBIMET_2              1 157407  157407 20.0209 0.001545 **
IBIMET_3              1  27788   27788  3.5344 0.092806 .
N_Gemme               1  19119   19119  2.4317 0.153333
Defogl                1  11240   11240  1.4297 0.262368
Dirad                 1   7029    7029  0.8941 0.369067
Vigoria               1  62638   62638  7.9670 0.019963 *
N_Gemme:Defogl        1  29408   29408  3.7405 0.085120 .
N_Gemme:Dirad         1  71954   71954  9.1520 0.014357 *
Defogl:Dirad          1   4856    4856  0.6177 0.452109
N_Gemme:Vigoria       1   6914    6914  0.8795 0.372834
Defogl:Vigoria        1   4749    4749  0.6041 0.456972
Dirad:Vigoria         1   8826    8826  1.1226 0.316961
N_Gemme:Defogl:Dirad  1   1495    1495  0.1902 0.673053
Residuals             9  70759    7862
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: 0.831
IBIMET_3: n.s
```

Poliftot2B

Analysis of Variance Table

Response: Do_2009M[, 36]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IBIMET_1 | 1 | 32047 | 32047 | 3.4157 | 0.09764 | . |
| IBIMET_2 | 1 | 30395 | 30395 | 3.2396 | 0.10541 | |
| IBIMET_3 | 1 | 55568 | 55568 | 5.9227 | 0.03776 | * |
| N_Gemme | 1 | 2373 | 2373 | 0.2529 | 0.62713 | |
| Defogl | 1 | 2294 | 2294 | 0.2445 | 0.63279 | |
| Dirad | 1 | 5 | 5 | 0.0005 | 0.98193 | |
| Vigoria | 1 | 1008 | 1008 | 0.1075 | 0.75054 | |
| N_Gemme:Defogl | 1 | 11796 | 11796 | 1.2573 | 0.29119 | |
| N_Gemme:Dirad | 1 | 75785 | 75785 | 8.0775 | 0.01934 | * |
| Defogl:Dirad | 1 | 7699 | 7699 | 0.8206 | 0.38862 | |
| N_Gemme:Vigoria | 1 | 7 | 7 | 0.0007 | 0.97890 | |
| Defogl:Vigoria | 1 | 2227 | 2227 | 0.2374 | 0.63774 | |
| Dirad:Vigoria | 1 | 82 | 82 | 0.0087 | 0.92754 | |
| N_Gemme:Defogl:Dirad | 1 | 3963 | 3963 | 0.4224 | 0.53198 | |
| Residuals | 9 | 84441 | 9382 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IBIMET_1: n.s
IBIMET_2: n.s
IBIMET_3: -0.63

DONNA OLIMPIA 2009M DIPROVE

PvinacciaA

Analysis of Variance Table

Response: Do_2009M[, 11]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 165755 | 165755 | 5.4566 | 0.0443148 | * |
| DIPROVE_2 | 1 | 1273 | 1273 | 0.0419 | 0.8423432 | |
| DIPROVE_3 | 1 | 6271 | 6271 | 0.2064 | 0.6603298 | |
| N_Gemme | 1 | 942703 | 942703 | 31.0333 | 0.0003470 | *** |
| Defogl | 1 | 381126 | 381126 | 12.5465 | 0.0062933 | ** |
| Dirad | 1 | 1273547 | 1273547 | 41.9245 | 0.0001148 | *** |
| Vigoria | 1 | 44772 | 44772 | 1.4739 | 0.2556320 | |
| N_Gemme:Defogl | 1 | 13072 | 13072 | 0.4303 | 0.5282349 | |
| N_Gemme:Dirad | 1 | 85511 | 85511 | 2.8150 | 0.1276985 | |
| Defogl:Dirad | 1 | 44196 | 44196 | 1.4549 | 0.2584935 | |
| N_Gemme:Vigoria | 1 | 3958 | 3958 | 0.1303 | 0.7264601 | |
| Defogl:Vigoria | 1 | 5453 | 5453 | 0.1795 | 0.6817356 | |
| Dirad:Vigoria | 1 | 20959 | 20959 | 0.6900 | 0.4276613 | |
| N_Gemme:Defogl:Dirad | 1 | 32563 | 32563 | 1.0720 | 0.3275224 | |
| Residuals | 9 | 273394 | 30377 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.614
DIPROVE_2: n.s
DIPROVE_3: n.s

DensMostoA

Analysis of Variance Table

Response: Do_2009M[, 12]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 2.5096e-05 | 2.5096e-05 | 16.4429 | 0.002863 | ** |
| DIPROVE_2 | 1 | 2.2000e-09 | 2.2000e-09 | 0.0014 | 0.970512 | |
| DIPROVE_3 | 1 | 2.7050e-07 | 2.7050e-07 | 0.1772 | 0.683653 | |
| N_Gemme | 1 | 2.3059e-05 | 2.3059e-05 | 15.1086 | 0.003692 | ** |
| Defogl | 1 | 3.1764e-06 | 3.1764e-06 | 2.0812 | 0.183007 | |
| Dirad | 1 | 1.0188e-05 | 1.0188e-05 | 6.6754 | 0.029518 | * |
| Vigoria | 1 | 1.6200e-08 | 1.6200e-08 | 0.0106 | 0.920083 | |
| N_Gemme:Defogl | 1 | 8.9500e-08 | 8.9500e-08 | 0.0586 | 0.814084 | |
| N_Gemme:Dirad | 1 | 1.1480e-07 | 1.1480e-07 | 0.0752 | 0.790103 | |
| Defogl:Dirad | 1 | 2.7828e-06 | 2.7828e-06 | 1.8233 | 0.209892 | |
| N_Gemme:Vigoria | 1 | 1.6300e-08 | 1.6300e-08 | 0.0107 | 0.919931 | |
| Defogl:Vigoria | 1 | 2.8810e-07 | 2.8810e-07 | 0.1888 | 0.674170 | |
| Dirad:Vigoria | 1 | 1.7447e-06 | 1.7447e-06 | 1.1432 | 0.312819 | |
| N_Gemme:Defogl:Dirad | 1 | 6.8120e-07 | 6.8120e-07 | 0.4463 | 0.520843 | |
| Residuals | 9 | 1.3736e-05 | 1.5262e-06 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.804
DIPROVE_2: n.s
DIPROVE_3: n.s

BrixA

Analysis of Variance Table

Response: Do_2009M[, 13]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 1.09200 | 1.09200 | 14.5393 | 0.004134 | ** |
| DIPROVE_2 | 1 | 0.00329 | 0.00329 | 0.0439 | 0.838759 | |
| DIPROVE_3 | 1 | 0.04633 | 0.04633 | 0.6168 | 0.452419 | |
| N_Gemme | 1 | 1.14795 | 1.14795 | 15.2841 | 0.003568 | ** |
| Defogl | 1 | 0.16531 | 0.16531 | 2.2010 | 0.172071 | |
| Dirad | 1 | 0.52947 | 0.52947 | 7.0495 | 0.026256 | * |
| Vigoria | 1 | 0.00001 | 0.00001 | 0.0002 | 0.989950 | |
| N_Gemme:Defogl | 1 | 0.00741 | 0.00741 | 0.0987 | 0.760571 | |
| N_Gemme:Dirad | 1 | 0.00086 | 0.00086 | 0.0114 | 0.917319 | |
| Defogl:Dirad | 1 | 0.16307 | 0.16307 | 2.1711 | 0.174717 | |
| N_Gemme:Vigoria | 1 | 0.00214 | 0.00214 | 0.0285 | 0.869562 | |
| Defogl:Vigoria | 1 | 0.02672 | 0.02672 | 0.3558 | 0.565563 | |
| Dirad:Vigoria | 1 | 0.06897 | 0.06897 | 0.9183 | 0.362954 | |
| N_Gemme:Defogl:Dirad | 1 | 0.01713 | 0.01713 | 0.2281 | 0.644330 | |
| Residuals | 9 | 0.67596 | 0.07511 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.786
DIPROVE_2: n.s
DIPROVE_3: n.s

PhA

Analysis of Variance Table

Response: Do_2009M[, 14]

```
                     Df    Sum Sq   Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.0184756 0.0184756 15.0835 0.003710 **
DIPROVE_2             1 0.0123087 0.0123087 10.0489 0.011366 *
DIPROVE_3             1 0.0198090 0.0198090 16.1722 0.003011 **
N_Gemme               1 0.0122256 0.0122256  9.9810 0.011564 *
Defogl                1 0.0000472 0.0000472  0.0386 0.848664
Dirad                 1 0.0082523 0.0082523  6.7373 0.028945 *
Vigoria               1 0.0172334 0.0172334 14.0695 0.004548 **
N_Gemme:Defogl        1 0.0006124 0.0006124  0.5000 0.497399
N_Gemme:Dirad         1 0.0006984 0.0006984  0.5702 0.469484
Defogl:Dirad          1 0.0010958 0.0010958  0.8946 0.368939
N_Gemme:Vigoria       1 0.0011102 0.0011102  0.9064 0.365950
Defogl:Vigoria        1 0.0023809 0.0023809  1.9438 0.196719
Dirad:Vigoria         1 0.0061518 0.0061518  5.0223 0.051754 .
N_Gemme:Defogl:Dirad  1 0.0017081 0.0017081  1.3945 0.267917
Residuals             9 0.0110239 0.0012249
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.791
DIPROVE_2: -0.726
DIPROVE_3: -0.802
```

AcTitolA

Analysis of Variance Table

```
Response: Do_2009M[, 15]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.01044 0.01044  0.7148 0.419750
DIPROVE_2             1 0.32831 0.32831 22.4752 0.001058 **
DIPROVE_3             1 0.00013 0.00013  0.0087 0.927617
N_Gemme               1 0.12425 0.12425  8.5060 0.017129 *
Defogl                1 0.05078 0.05078  3.4762 0.095136 .
Dirad                 1 0.19167 0.19167 13.1213 0.005552 **
Vigoria               1 0.06154 0.06154  4.2131 0.070319 .
N_Gemme:Defogl        1 0.06438 0.06438  4.4074 0.065184 .
N_Gemme:Dirad         1 0.00758 0.00758  0.5186 0.489730
Defogl:Dirad          1 0.00171 0.00171  0.1171 0.740030
N_Gemme:Vigoria       1 0.01369 0.01369  0.9370 0.358337
Defogl:Vigoria        1 0.00008 0.00008  0.0057 0.941386
Dirad:Vigoria         1 0.00278 0.00278  0.1905 0.672787
N_Gemme:Defogl:Dirad  1 0.00776 0.00776  0.5310 0.484701
Residuals             9 0.13147 0.01461
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: 0.845
DIPROVE_3: n.s
```

AcTartA

Analysis of Variance Table

```
Response: Do_2009M[, 16]
                     Df   Sum Sq  Mean Sq F value    Pr(>F)
DIPROVE_1             1 0.184213 0.184213 42.8365 0.0001058 ***
DIPROVE_2             1 0.238934 0.238934 55.5613 3.876e-05 ***
```

```
DIPROVE_3             1 0.035932 0.035932  8.3557 0.0178664 *
N_Gemme               1 0.115262 0.115262 26.8028 0.0005816 ***
Defogl                1 0.029415 0.029415  6.8400 0.0280241 *
Dirad                 1 0.090849 0.090849 21.1259 0.0012974 **
Vigoria               1 0.034291 0.034291  7.9740 0.0199223 *
N_Gemme:Defogl        1 0.000218 0.000218  0.0507 0.8269532
N_Gemme:Dirad         1 0.005531 0.005531  1.2862 0.2860595
Defogl:Dirad          1 0.006357 0.006357  1.4782 0.2549783
N_Gemme:Vigoria       1 0.005452 0.005452  1.2677 0.2893257
Defogl:Vigoria        1 0.000108 0.000108  0.0252 0.8774356
Dirad:Vigoria         1 0.009423 0.009423  2.1912 0.1729315
N_Gemme:Defogl:Dirad  1 0.043011 0.043011 10.0018 0.0115028 *
Residuals             9 0.038703 0.004300
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.909
DIPROVE_2: 0.928
DIPROVE_3: 0.694

AcMalicoA

Analysis of Variance Table

```
Response: Do_2009M[, 17]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.59046 0.59046 14.1991 0.004429 **
DIPROVE_2             1 0.00058 0.00058  0.0138 0.908920
DIPROVE_3             1 0.03640 0.03640  0.8753 0.373920
N_Gemme               1 0.03661 0.03661  0.8803 0.372606
Defogl                1 0.00482 0.00482  0.1160 0.741237
Dirad                 1 0.00605 0.00605  0.1456 0.711641
Vigoria               1 0.10917 0.10917  2.6252 0.139633
N_Gemme:Defogl        1 0.03102 0.03102  0.7461 0.410153
N_Gemme:Dirad         1 0.02129 0.02129  0.5119 0.492462
Defogl:Dirad          1 0.05054 0.05054  1.2154 0.298865
N_Gemme:Vigoria       1 0.00915 0.00915  0.2201 0.650112
Defogl:Vigoria        1 0.01980 0.01980  0.4761 0.507602
Dirad:Vigoria         1 0.00693 0.00693  0.1666 0.692715
N_Gemme:Defogl:Dirad  1 0.11829 0.11829  2.8445 0.125962
Residuals             9 0.37426 0.04158
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: 0.782
DIPROVE_2: n.s
DIPROVE_3: n.s

KA

Analysis of Variance Table

```
Response: Do_2009M[, 18]
                     Df   Sum Sq  Mean Sq F value   Pr(>F)
DIPROVE_1             1 0.216857 0.216857 16.7540 0.002704 **
DIPROVE_2             1 0.058548 0.058548  4.5233 0.062344 .
DIPROVE_3             1 0.038798 0.038798  2.9975 0.117440
N_Gemme               1 0.065393 0.065393  5.0522 0.051195 .
Defogl                1 0.007906 0.007906  0.6108 0.454548
```

```
Dirad                 1 0.047438 0.047438  3.6650 0.087838 .
Vigoria               1 0.132543 0.132543 10.2401 0.010831 *
N_Gemme:Defogl        1 0.000473 0.000473  0.0366 0.852603
N_Gemme:Dirad         1 0.017974 0.017974  1.3886 0.268856
Defogl:Dirad          1 0.006331 0.006331  0.4892 0.501976
N_Gemme:Vigoria       1 0.000008 0.000008  0.0006 0.980972
Defogl:Vigoria        1 0.027117 0.027117  2.0950 0.181702
Dirad:Vigoria         1 0.000156 0.000156  0.0121 0.914927
N_Gemme:Defogl:Dirad  1 0.001388 0.001388  0.1073 0.750786
Residuals             9 0.116492 0.012944
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: 0.807
DIPROVE_2: n.s
DIPROVE_3: n.s

ApaA

```
Analysis of Variance Table

Response: Do_2009M[, 19]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1   20.54   20.54  0.2865 0.605466
DIPROVE_2             1 1600.35 1600.35 22.3232 0.001082 **
DIPROVE_3             1  725.25  725.25 10.1166 0.011173 *
N_Gemme               1   21.07   21.07  0.2939 0.600925
Defogl                1 1420.93 1420.93 19.8206 0.001595 **
Dirad                 1  258.26  258.26  3.6025 0.090173 .
Vigoria               1   90.24   90.24  1.2588 0.290922
N_Gemme:Defogl        1   44.46   44.46  0.6202 0.451219
N_Gemme:Dirad         1    0.00    0.00  0.0000 0.999222
Defogl:Dirad          1  663.27  663.27  9.2519 0.013979 *
N_Gemme:Vigoria       1   36.43   36.43  0.5082 0.493985
Defogl:Vigoria        1  220.58  220.58  3.0769 0.113310
Dirad:Vigoria         1  577.29  577.29  8.0527 0.019475 *
N_Gemme:Defogl:Dirad  1  148.85  148.85  2.0764 0.183467
Residuals             9  645.21   71.69
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: 0.844
DIPROVE_3: -0.727

Antoctot1A

```
Analysis of Variance Table

Response: Do_2009M[, 20]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1  51362   51362 15.2567 0.003587 **
DIPROVE_2             1    666     666  0.1978 0.667032
DIPROVE_3             1   6895    6895  2.0481 0.186187
N_Gemme               1   7120    7120  2.1148 0.179847
Defogl                1   7288    7288  2.1650 0.175269
Dirad                 1   6980    6980  2.0733 0.183755
Vigoria               1  17590   17590  5.2249 0.048103 *
N_Gemme:Defogl        1      1       1  0.0002 0.989896
```

```
N_Gemme:Dirad         1   1229    1229  0.3651 0.560599
Defogl:Dirad          1   1695    1695  0.5036 0.495887
N_Gemme:Vigoria       1   1846    1846  0.5482 0.477918
Defogl:Vigoria        1     62      62  0.0185 0.894857
Dirad:Vigoria         1      1       1  0.0003 0.985565
N_Gemme:Defogl:Dirad  1   8381    8381  2.4896 0.149059
Residuals             9  30299    3367
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.793
DIPROVE_2: n.s
DIPROVE_3: n.s

Poliftot1A

Analysis of Variance Table

```
Response: Do_2009M[, 21]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1  32317   32317 12.8274 0.005917 **
DIPROVE_2             1    619     619  0.2455 0.632121
DIPROVE_3             1     41      41  0.0162 0.901378
N_Gemme               1   8840    8840  3.5087 0.093826 .
Defogl                1   7710    7710  3.0603 0.114158
Dirad                 1  20400   20400  8.0970 0.019229 *
Vigoria               1   1404    1404  0.5572 0.474455
N_Gemme:Defogl        1    121     121  0.0481 0.831214
N_Gemme:Dirad         1   2323    2323  0.9220 0.362043
Defogl:Dirad          1    587     587  0.2332 0.640712
N_Gemme:Vigoria       1     66      66  0.0264 0.874622
Defogl:Vigoria        1   3295    3295  1.3080 0.282270
Dirad:Vigoria         1     60      60  0.0238 0.880792
N_Gemme:Defogl:Dirad  1   1559    1559  0.6189 0.451685
Residuals             9  22675    2519
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.767
DIPROVE_2: n.s
DIPROVE_3: n.s

Antoctot2A

Analysis of Variance Table

```
Response: Do_2009M[, 22]
                     Df Sum Sq Mean Sq F value  Pr(>F)
DIPROVE_1             1 112735  112735 10.4761 0.01021 *
DIPROVE_2             1   2847    2847  0.2645 0.61941
DIPROVE_3             1  23365   23365  2.1712 0.17471
N_Gemme               1      4       4  0.0003 0.98582
Defogl                1     72      72  0.0067 0.93645
Dirad                 1    241     241  0.0224 0.88433
Vigoria               1  40485   40485  3.7621 0.08436 .
N_Gemme:Defogl        1    985     985  0.0916 0.76906
N_Gemme:Dirad         1   4493    4493  0.4175 0.53430
Defogl:Dirad          1  10861   10861  1.0093 0.34131
N_Gemme:Vigoria       1   3763    3763  0.3497 0.56883
```

| | | | | | | |
|---|---|---|---|---|---|---|
| Defogl:Vigoria | 1 | 4625 | 4625 | 0.4298 | 0.52850 | |
| Dirad:Vigoria | 1 | 394 | 394 | 0.0366 | 0.85252 | |
| N_Gemme:Defogl:Dirad | 1 | 9288 | 9288 | 0.8631 | 0.37712 | |
| Residuals | 9 | 96850 | 10761 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.733
DIPROVE_2: n.s
DIPROVE_3: n.s

Poliftot2A

Analysis of Variance Table

Response: Do_2009M[, 23]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 46399 | 46399 | 8.8181 | 0.01571 | * |
| DIPROVE_2 | 1 | 3643 | 3643 | 0.6923 | 0.42690 | |
| DIPROVE_3 | 1 | 22 | 22 | 0.0042 | 0.94958 | |
| N_Gemme | 1 | 583 | 583 | 0.1108 | 0.74684 | |
| Defogl | 1 | 641 | 641 | 0.1217 | 0.73518 | |
| Dirad | 1 | 4310 | 4310 | 0.8192 | 0.38900 | |
| Vigoria | 1 | 66 | 66 | 0.0126 | 0.91325 | |
| N_Gemme:Defogl | 1 | 3394 | 3394 | 0.6450 | 0.44259 | |
| N_Gemme:Dirad | 1 | 6874 | 6874 | 1.3065 | 0.28253 | |
| Defogl:Dirad | 1 | 7189 | 7189 | 1.3662 | 0.27249 | |
| N_Gemme:Vigoria | 1 | 95 | 95 | 0.0181 | 0.89588 | |
| Defogl:Vigoria | 1 | 2266 | 2266 | 0.4306 | 0.52813 | |
| Dirad:Vigoria | 1 | 531 | 531 | 0.1010 | 0.75791 | |
| N_Gemme:Defogl:Dirad | 1 | 1080 | 1080 | 0.2052 | 0.66126 | |
| Residuals | 9 | 47356 | 5262 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.703
DIPROVE_2: n.s
DIPROVE_3: n.s

PvinacciaB

Analysis of Variance Table

Response: Do_2009M[, 24]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 50054 | 50054 | 0.9019 | 0.3670726 | |
| DIPROVE_2 | 1 | 227365 | 227365 | 4.0969 | 0.0736363 | . |
| DIPROVE_3 | 1 | 96 | 96 | 0.0017 | 0.9677729 | |
| N_Gemme | 1 | 1449531 | 1449531 | 26.1189 | 0.0006359 | *** |
| Defogl | 1 | 237830 | 237830 | 4.2854 | 0.0683499 | . |
| Dirad | 1 | 2120556 | 2120556 | 38.2100 | 0.0001625 | *** |
| Vigoria | 1 | 33751 | 33751 | 0.6082 | 0.4554984 | |
| N_Gemme:Defogl | 1 | 8140 | 8140 | 0.1467 | 0.7106303 | |
| N_Gemme:Dirad | 1 | 664991 | 664991 | 11.9824 | 0.0071432 | ** |
| Defogl:Dirad | 1 | 62304 | 62304 | 1.1226 | 0.3169556 | |
| N_Gemme:Vigoria | 1 | 9258 | 9258 | 0.1668 | 0.6925073 | |
| Defogl:Vigoria | 1 | 159 | 159 | 0.0029 | 0.9584790 | |
| Dirad:Vigoria | 1 | 4851 | 4851 | 0.0874 | 0.7741967 | |
| N_Gemme:Defogl:Dirad | 1 | 79409 | 79409 | 1.4309 | 0.2621853 | |

```
Residuals             9  499476   55497
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


DensMostoB

Analysis of Variance Table

Response: Do_2009M[, 25]
                     Df     Sum Sq    Mean Sq F value Pr(>F)
DIPROVE_1             1 1.6400e-06 1.6402e-06  0.2442 0.6330
DIPROVE_2             1 3.0820e-06 3.0820e-06  0.4589 0.5152
DIPROVE_3             1 6.2400e-07 6.2370e-07  0.0929 0.7675
N_Gemme               1 4.7730e-06 4.7735e-06  0.7108 0.4210
Defogl                1 1.8000e-08 1.8200e-08  0.0027 0.9597
Dirad                 1 3.1760e-06 3.1756e-06  0.4729 0.5090
Vigoria               1 2.0292e-05 2.0292e-05  3.0218 0.1162
N_Gemme:Defogl        1 1.0277e-05 1.0277e-05  1.5304 0.2474
N_Gemme:Dirad         1 1.4202e-05 1.4201e-05  2.1148 0.1799
Defogl:Dirad          1 3.3200e-06 3.3202e-06  0.4944 0.4997
N_Gemme:Vigoria       1 2.8480e-06 2.8481e-06  0.4241 0.5312
Defogl:Vigoria        1 1.8253e-05 1.8253e-05  2.7181 0.1336
Dirad:Vigoria         1 1.1800e-07 1.1850e-07  0.0176 0.8973
N_Gemme:Defogl:Dirad  1 1.2880e-06 1.2879e-06  0.1918 0.6718
Residuals             9 6.0439e-05 6.7154e-06

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s


BrixB

Analysis of Variance Table

Response: Do_2009M[, 26]
                     Df  Sum Sq Mean Sq F value Pr(>F)
DIPROVE_1             1 0.10836 0.10836  0.3125 0.5898
DIPROVE_2             1 0.15094 0.15094  0.4352 0.5260
DIPROVE_3             1 0.01340 0.01340  0.0386 0.8485
N_Gemme               1 0.29283 0.29283  0.8444 0.3821
Defogl                1 0.00032 0.00032  0.0009 0.9764
Dirad                 1 0.12859 0.12859  0.3708 0.5576
Vigoria               1 0.95411 0.95411  2.7512 0.1316
N_Gemme:Defogl        1 0.51387 0.51387  1.4818 0.2545
N_Gemme:Dirad         1 0.68465 0.68465  1.9742 0.1936
Defogl:Dirad          1 0.20009 0.20009  0.5770 0.4669
N_Gemme:Vigoria       1 0.16619 0.16619  0.4792 0.5062
Defogl:Vigoria        1 0.84771 0.84771  2.4444 0.1524
Dirad:Vigoria         1 0.00481 0.00481  0.0139 0.9088
N_Gemme:Defogl:Dirad  1 0.09444 0.09444  0.2723 0.6144
Residuals             9 3.12119 0.34680

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

PhB

```
Analysis of Variance Table

Response: Do_2009M[, 27]
                    Df   Sum Sq  Mean Sq F value   Pr(>F)
DIPROVE_1            1 0.005656 0.005656  1.5933 0.238584
DIPROVE_2            1 0.024348 0.024348  6.8589 0.027859 *
DIPROVE_3            1 0.006205 0.006205  1.7481 0.218730
N_Gemme              1 0.013487 0.013487  3.7993 0.083075 .
Defogl               1 0.004418 0.004418  1.2445 0.293509
Dirad                1 0.003445 0.003445  0.9704 0.350313
Vigoria              1 0.047267 0.047267 13.3154 0.005326 **
N_Gemme:Defogl       1 0.000773 0.000773  0.2176 0.651938
N_Gemme:Dirad        1 0.000192 0.000192  0.0540 0.821522
Defogl:Dirad         1 0.002062 0.002062  0.5810 0.465433
N_Gemme:Vigoria      1 0.001647 0.001647  0.4640 0.512921
Defogl:Vigoria       1 0.017055 0.017055  4.8046 0.056073 .
Dirad:Vigoria        1 0.000197 0.000197  0.0554 0.819206
N_Gemme:Defogl:Dirad 1 0.006847 0.006847  1.9290 0.198274
Residuals            9 0.031948 0.003550
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: -0.658
DIPROVE_3: n.s
```

AcTitolB

```
Analysis of Variance Table

Response: Do_2009M[, 28]
                    Df  Sum Sq Mean Sq F value    Pr(>F)
DIPROVE_1            1 0.07138 0.07138  4.8582 0.0549682 .
DIPROVE_2            1 0.02832 0.02832  1.9276 0.1984159
DIPROVE_3            1 0.15698 0.15698 10.6851 0.0097013 **
N_Gemme              1 0.09381 0.09381  6.3852 0.0324001 *
Defogl               1 0.23860 0.23860 16.2404 0.0029732 **
Dirad                1 0.05929 0.05929  4.0356 0.0754657 .
Vigoria              1 0.41561 0.41561 28.2891 0.0004818 ***
N_Gemme:Defogl       1 0.00080 0.00080  0.0543 0.8210093
N_Gemme:Dirad        1 0.03125 0.03125  2.1268 0.1787389
Defogl:Dirad         1 0.00980 0.00980  0.6671 0.4351528
N_Gemme:Vigoria      1 0.02090 0.02090  1.4227 0.2634527
Defogl:Vigoria       1 0.23200 0.23200 15.7911 0.0032360 **
Dirad:Vigoria        1 0.08941 0.08941  6.0856 0.0357520 *
N_Gemme:Defogl:Dirad 1 0.08298 0.08298  5.6478 0.0414644 *
Residuals            9 0.13222 0.01469
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: 0.737
```

AcTartB

```
Analysis of Variance Table

Response: Do_2009M[, 29]
                    Df  Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1            1 0.00277 0.00277  0.0506 0.82697  
DIPROVE_2            1 0.00509 0.00509  0.0930 0.76739  
DIPROVE_3            1 0.26009 0.26009  4.7539 0.05714 .
N_Gemme              1 0.13877 0.13877  2.5365 0.14571  
Defogl               1 0.05609 0.05609  1.0252 0.33773  
Dirad                1 0.01319 0.01319  0.2410 0.63523  
Vigoria              1 0.28693 0.28693  5.2444 0.04777 *
N_Gemme:Defogl       1 0.00021 0.00021  0.0039 0.95152  
N_Gemme:Dirad        1 0.00176 0.00176  0.0321 0.86176  
Defogl:Dirad         1 0.00440 0.00440  0.0805 0.78303  
N_Gemme:Vigoria      1 0.00183 0.00183  0.0334 0.85908  
Defogl:Vigoria       1 0.34313 0.34313  6.2716 0.03362 *
Dirad:Vigoria        1 0.24932 0.24932  4.5569 0.06155 .
N_Gemme:Defogl:Dirad 1 0.01072 0.01072  0.1959 0.66850  
Residuals            9 0.49240 0.05471                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s
```

AcMalicoB

```
Analysis of Variance Table

Response: Do_2009M[, 30]
                    Df  Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1            1 0.41811 0.41811  7.6719 0.02176 *
DIPROVE_2            1 0.20405 0.20405  3.7442 0.08499 .
DIPROVE_3            1 0.14504 0.14504  2.6613 0.13725  
N_Gemme              1 0.00726 0.00726  0.1333 0.72347  
Defogl               1 0.03937 0.03937  0.7225 0.41737  
Dirad                1 0.00197 0.00197  0.0361 0.85361  
Vigoria              1 0.00097 0.00097  0.0178 0.89686  
N_Gemme:Defogl       1 0.02334 0.02334  0.4283 0.52918  
N_Gemme:Dirad        1 0.06640 0.06640  1.2184 0.29832  
Defogl:Dirad         1 0.00006 0.00006  0.0011 0.97407  
N_Gemme:Vigoria      1 0.04511 0.04511  0.8277 0.38666  
Defogl:Vigoria       1 0.03105 0.03105  0.5698 0.46963  
Dirad:Vigoria        1 0.10762 0.10762  1.9748 0.19351  
N_Gemme:Defogl:Dirad 1 0.07937 0.07937  1.4564 0.25827  
Residuals            9 0.49049 0.05450                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: 0.678
DIPROVE_2: n.s
DIPROVE_3: n.s
```

KB

```
Analysis of Variance Table
```

Response: Do_2009M[, 31]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 0.083337 | 0.083337 | 4.5534 | 0.06163 | . |
| DIPROVE_2 | 1 | 0.127113 | 0.127113 | 6.9452 | 0.02712 | * |
| DIPROVE_3 | 1 | 0.094612 | 0.094612 | 5.1694 | 0.04907 | * |
| N_Gemme | 1 | 0.041947 | 0.041947 | 2.2919 | 0.16435 | |
| Defogl | 1 | 0.030006 | 0.030006 | 1.6395 | 0.23241 | |
| Dirad | 1 | 0.028150 | 0.028150 | 1.5381 | 0.24626 | |
| Vigoria | 1 | 0.156415 | 0.156415 | 8.5462 | 0.01694 | * |
| N_Gemme:Defogl | 1 | 0.003747 | 0.003747 | 0.2047 | 0.66164 | |
| N_Gemme:Dirad | 1 | 0.012589 | 0.012589 | 0.6878 | 0.42835 | |
| Defogl:Dirad | 1 | 0.037811 | 0.037811 | 2.0659 | 0.18447 | |
| N_Gemme:Vigoria | 1 | 0.001342 | 0.001342 | 0.0733 | 0.79266 | |
| Defogl:Vigoria | 1 | 0.115180 | 0.115180 | 6.2932 | 0.03339 | * |
| Dirad:Vigoria | 1 | 0.000859 | 0.000859 | 0.0470 | 0.83328 | |
| N_Gemme:Defogl:Dirad | 1 | 0.004634 | 0.004634 | 0.2532 | 0.62691 | |
| Residuals | 9 | 0.164721 | 0.018302 | | | |

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: -0.66
DIPROVE_3: -0.604

ApaB

Analysis of Variance Table

Response: Do_2009M[, 32]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 22.65 | 22.65 | 0.1653 | 0.69378 | |
| DIPROVE_2 | 1 | 1033.64 | 1033.64 | 7.5446 | 0.02260 | * |
| DIPROVE_3 | 1 | 459.64 | 459.64 | 3.3550 | 0.10023 | |
| N_Gemme | 1 | 82.87 | 82.87 | 0.6049 | 0.45667 | |
| Defogl | 1 | 1403.89 | 1403.89 | 10.2471 | 0.01081 | * |
| Dirad | 1 | 111.92 | 111.92 | 0.8169 | 0.38964 | |
| Vigoria | 1 | 33.55 | 33.55 | 0.2449 | 0.63255 | |
| N_Gemme:Defogl | 1 | 245.76 | 245.76 | 1.7938 | 0.21330 | |
| N_Gemme:Dirad | 1 | 608.24 | 608.24 | 4.4396 | 0.06438 | . |
| Defogl:Dirad | 1 | 270.75 | 270.75 | 1.9762 | 0.19336 | |
| N_Gemme:Vigoria | 1 | 6.55 | 6.55 | 0.0478 | 0.83177 | |
| Defogl:Vigoria | 1 | 20.64 | 20.64 | 0.1507 | 0.70690 | |
| Dirad:Vigoria | 1 | 152.86 | 152.86 | 1.1157 | 0.31837 | |
| N_Gemme:Defogl:Dirad | 1 | 270.73 | 270.73 | 1.9761 | 0.19337 | |
| Residuals | 9 | 1233.03 | 137.00 | | | |

---

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: n.s
DIPROVE_2: 0.675
DIPROVE_3: n.s

Antoctot1B

Analysis of Variance Table

Response: Do_2009M[, 33]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| DIPROVE_1 | 1 | 43686 | 43686 | 26.5631 | 0.000600 | *** |

```
DIPROVE_2            1    242     242  0.1471 0.710191
DIPROVE_3            1  22061   22061 13.4141 0.005215 **
N_Gemme              1    507     507  0.3083 0.592268
Defogl               1   7764    7764  4.7206 0.057859 .
Dirad                1   9693    9693  5.8935 0.038129 *
Vigoria              1     12      12  0.0074 0.933399
N_Gemme:Defogl       1   1934    1934  1.1760 0.306367
N_Gemme:Dirad        1    846     846  0.5141 0.491538
Defogl:Dirad         1   1278    1278  0.7770 0.400977
N_Gemme:Vigoria      1    237     237  0.1442 0.712914
Defogl:Vigoria       1   4613    4613  2.8049 0.128297
Dirad:Vigoria        1   8739    8739  5.3139 0.046601 *
N_Gemme:Defogl:Dirad 1  11037   11037  6.7110 0.029187 *
Residuals            9  14802    1645
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.864
DIPROVE_2: n.s
DIPROVE_3: -0.774
```

Poliftot1B

Analysis of Variance Table

```
Response: Do_2009M[, 34]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 23901.4 23901.4 14.8098 0.003916 **
DIPROVE_2             1  2201.3  2201.3  1.3640 0.272853
DIPROVE_3             1   156.7   156.7  0.0971 0.762421
N_Gemme               1  1510.4  1510.4  0.9359 0.358620
Defogl                1  5079.1  5079.1  3.1471 0.109808
Dirad                 1  9653.5  9653.5  5.9815 0.037016 *
Vigoria               1   147.3   147.3  0.0912 0.769460
N_Gemme:Defogl        1   180.7   180.7  0.1120 0.745570
N_Gemme:Dirad         1  3234.3  3234.3  2.0040 0.190543
Defogl:Dirad          1  1014.2  1014.2  0.6284 0.448328
N_Gemme:Vigoria       1   116.4   116.4  0.0721 0.794361
Defogl:Vigoria        1     3.0     3.0  0.0019 0.966461
Dirad:Vigoria         1     0.9     0.9  0.0006 0.981218
N_Gemme:Defogl:Dirad  1  1564.1  1564.1  0.9692 0.350612
Residuals             9 14525.0  1613.9
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

DIPROVE_1: -0.789
DIPROVE_2: n.s
DIPROVE_3: n.s
```

Antoctot2B

Analysis of Variance Table

```
Response: Do_2009M[, 35]
                     Df Sum Sq Mean Sq F value   Pr(>F)
DIPROVE_1             1 148522  148522 13.8473 0.004762 **
DIPROVE_2             1  19071   19071  1.7781 0.215151
DIPROVE_3             1  79793   79793  7.4394 0.023319 *
N_Gemme               1  24281   24281  2.2638 0.166689
```

```
Defogl               1   2561    2561  0.2388 0.636774  
Dirad                1   1423    1423  0.1327 0.724061  
Vigoria              1   1356    1356  0.1264 0.730338  
N_Gemme:Defogl       1  12712   12712  1.1852 0.304597  
N_Gemme:Dirad        1    278     278  0.0259 0.875686  
Defogl:Dirad         1  10643   10643  0.9923 0.345219  
N_Gemme:Vigoria      1   4076    4076  0.3801 0.552848  
Defogl:Vigoria       1  11318   11318  1.0552 0.331122  
Dirad:Vigoria        1  56226   56226  5.2421 0.047809 *
N_Gemme:Defogl:Dirad 1  15766   15766  1.4699 0.256223  
Residuals            9  96532   10726                   
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: -0.779
DIPROVE_2: n.s
DIPROVE_3: -0.673

Poliftot2B

Analysis of Variance Table

```
Response: Do_2009M[, 36]
                     Df Sum Sq Mean Sq F value  Pr(>F)  
DIPROVE_1             1  76343   76343  4.0614 0.07469 .
DIPROVE_2             1  24346   24346  1.2952 0.28448  
DIPROVE_3             1    369     369  0.0196 0.89166  
N_Gemme               1  13095   13095  0.6967 0.42551  
Defogl                1    540     540  0.0287 0.86919  
Dirad                 1   1658    1658  0.0882 0.77322  
Vigoria               1   1049    1049  0.0558 0.81851  
N_Gemme:Defogl        1   3704    3704  0.1971 0.66759  
N_Gemme:Dirad         1     59      59  0.0031 0.95654  
Defogl:Dirad          1      5       5  0.0002 0.98789  
N_Gemme:Vigoria       1  12862   12862  0.6842 0.42952  
Defogl:Vigoria        1    441     441  0.0235 0.88167  
Dirad:Vigoria         1   5586    5586  0.2972 0.59891  
N_Gemme:Defogl:Dirad  1    457     457  0.0243 0.87956  
Residuals             9 169177   18797                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

DIPROVE_1: n.s
DIPROVE_2: n.s
DIPROVE_3: n.s

DONNA OLIMPIA 2009M IASMA

PvinacciaA

Analysis of Variance Table

```
Response: Do_2009M[, 11]
                     Df  Sum Sq Mean Sq F value    Pr(>F)    
IASMA_1               1  682317  682317 27.3921 0.0005392 ***
IASMA_2               1   81056   81056  3.2541 0.1047421    
IASMA_3               1  304925  304925 12.2414 0.0067365 ** 
N_Gemme               1  512144  512144 20.5604 0.0014173 ** 
Defogl                1  142463  142463  5.7193 0.0404577 *  
Dirad                 1 1059407 1059407 42.5306 0.0001087 ***
```

```
Vigoria               1   75524   75524  3.0319 0.1156239
N_Gemme:Defogl        1   10596   10596  0.4254 0.5305729
N_Gemme:Dirad         1  136675  136675  5.4869 0.0438463 *
Defogl:Dirad          1   18541   18541  0.7443 0.4106792
N_Gemme:Vigoria       1    4787    4787  0.1922 0.6714488
Defogl:Vigoria        1   22054   22054  0.8854 0.3713007
Dirad:Vigoria         1       0       0  0.0000 0.9987892
N_Gemme:Defogl:Dirad  1   19882   19882  0.7982 0.3948961
Residuals             9  224183   24909
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.868
IASMA_2: n.s
IASMA_3: -0.759


DensMostoA

Analysis of Variance Table

Response: Do_2009M[, 12]
                     Df     Sum Sq    Mean Sq F value   Pr(>F)
IASMA_1               1 9.9664e-06 9.9664e-06  6.1197 0.035349 *
IASMA_2               1 6.8963e-06 6.8963e-06  4.2346 0.069727 .
IASMA_3               1 2.7980e-07 2.7980e-07  0.1718 0.688207
N_Gemme               1 1.1270e-05 1.1270e-05  6.9204 0.027329 *
Defogl                1 2.6383e-05 2.6383e-05 16.2003 0.002996 **
Dirad                 1 6.7731e-06 6.7731e-06  4.1589 0.071841 .
Vigoria               1 1.7920e-07 1.7920e-07  0.1100 0.747720
N_Gemme:Defogl        1 3.9000e-08 3.9000e-08  0.0239 0.880438
N_Gemme:Dirad         1 7.3360e-07 7.3360e-07  0.4505 0.518973
Defogl:Dirad          1 1.4800e-08 1.4800e-08  0.0091 0.926220
N_Gemme:Vigoria       1 1.4247e-06 1.4247e-06  0.8748 0.374045
Defogl:Vigoria        1 1.3607e-06 1.3607e-06  0.8355 0.384512
Dirad:Vigoria         1 3.2220e-07 3.2220e-07  0.1978 0.666986
N_Gemme:Defogl:Dirad  1 9.6100e-07 9.6100e-07  0.5901 0.462054
Residuals             9 1.4657e-05 1.6286e-06
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.636
IASMA_2: n.s
IASMA_3: n.s


BrixA

Analysis of Variance Table

Response: Do_2009M[, 13]
                     Df  Sum Sq Mean Sq F value   Pr(>F)
IASMA_1               1 0.53747 0.53747  6.4644 0.031580 *
IASMA_2               1 0.29988 0.29988  3.6068 0.090009 .
IASMA_3               1 0.00084 0.00084  0.0101 0.922324
N_Gemme               1 0.56824 0.56824  6.8345 0.028073 *
Defogl                1 1.16424 1.16424 14.0028 0.004611 **
Dirad                 1 0.33677 0.33677  4.0505 0.075016 .
Vigoria               1 0.02439 0.02439  0.2933 0.601256
N_Gemme:Defogl        1 0.00610 0.00610  0.0734 0.792543
N_Gemme:Dirad         1 0.02798 0.02798  0.3365 0.576062
```

```
Defogl:Dirad          1 0.00038 0.00038  0.0045 0.947888
N_Gemme:Vigoria       1 0.08727 0.08727  1.0497 0.332335
Defogl:Vigoria        1 0.06626 0.06626  0.7970 0.395243
Dirad:Vigoria         1 0.04404 0.04404  0.5297 0.485254
N_Gemme:Defogl:Dirad  1 0.03449 0.03449  0.4149 0.535582
Residuals             9 0.74829 0.08314
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: -0.647
IASMA_2: n.s
IASMA_3: n.s

PhA

Analysis of Variance Table

```
Response: Do_2009M[, 14]
                     Df   Sum Sq   Mean Sq F value  Pr(>F)
IASMA_1               1 0.005903 0.0059032  1.2562 0.29139
IASMA_2               1 0.001458 0.0014584  0.3103 0.59105
IASMA_3               1 0.002068 0.0020681  0.4401 0.52371
N_Gemme               1 0.006843 0.0068426  1.4561 0.25831
Defogl                1 0.021127 0.0211265  4.4957 0.06301 .
Dirad                 1 0.008008 0.0080081  1.7041 0.22414
Vigoria               1 0.003975 0.0039748  0.8458 0.38173
N_Gemme:Defogl        1 0.000442 0.0004419  0.0940 0.76608
N_Gemme:Dirad         1 0.000549 0.0005486  0.1167 0.74044
Defogl:Dirad          1 0.000048 0.0000483  0.0103 0.92148
N_Gemme:Vigoria       1 0.010315 0.0103146  2.1949 0.17261
Defogl:Vigoria        1 0.006539 0.0065388  1.3914 0.26840
Dirad:Vigoria         1 0.003343 0.0033426  0.7113 0.42086
N_Gemme:Defogl:Dirad  1 0.000223 0.0002229  0.0474 0.83244
Residuals             9 0.042294 0.0046993
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

AcTitolA

Analysis of Variance Table

```
Response: Do_2009M[, 15]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.138132 0.138132  6.0600 0.03606 *
IASMA_2               1 0.061137 0.061137  2.6822 0.13590
IASMA_3               1 0.164432 0.164432  7.2139 0.02497 *
N_Gemme               1 0.088206 0.088206  3.8697 0.08071 .
Defogl                1 0.004176 0.004176  0.1832 0.67869
Dirad                 1 0.139957 0.139957  6.1401 0.03511 *
Vigoria               1 0.017490 0.017490  0.7673 0.40382
N_Gemme:Defogl        1 0.046794 0.046794  2.0529 0.18572
N_Gemme:Dirad         1 0.016503 0.016503  0.7240 0.41690
Defogl:Dirad          1 0.053875 0.053875  2.3636 0.15858
N_Gemme:Vigoria       1 0.003631 0.003631  0.1593 0.69912
Defogl:Vigoria        1 0.032620 0.032620  1.4311 0.26215
```

```
Dirad:Vigoria         1 0.010627 0.010627  0.4662 0.51192
N_Gemme:Defogl:Dirad  1 0.013836 0.013836  0.6070 0.45591
Residuals             9 0.205145 0.022794
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.634
IASMA_2: n.s
IASMA_3: -0.667


AcTartA

Analysis of Variance Table

Response: Do_2009M[, 16]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.071879 0.071879  3.2932 0.10296
IASMA_2               1 0.124136 0.124136  5.6874 0.04090 *
IASMA_3               1 0.085150 0.085150  3.9012 0.07968 .
N_Gemme               1 0.073520 0.073520  3.3684 0.09965 .
Defogl                1 0.047488 0.047488  2.1757 0.17431
Dirad                 1 0.099361 0.099361  4.5523 0.06166 .
Vigoria               1 0.005812 0.005812  0.2663 0.61827
N_Gemme:Defogl        1 0.017809 0.017809  0.8159 0.38991
N_Gemme:Dirad         1 0.030917 0.030917  1.4165 0.26443
Defogl:Dirad          1 0.000084 0.000084  0.0038 0.95198
N_Gemme:Vigoria       1 0.007048 0.007048  0.3229 0.58377
Defogl:Vigoria        1 0.048737 0.048737  2.2329 0.16931
Dirad:Vigoria         1 0.000000 0.000000  0.0000 0.99932
N_Gemme:Defogl:Dirad  1 0.029317 0.029317  1.3432 0.27630
Residuals             9 0.196438 0.021826
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: 0.622
IASMA_3: n.s


AcMalicoA

Analysis of Variance Table

Response: Do_2009M[, 17]
                     Df  Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.00221 0.002211  0.0391 0.84757
IASMA_2               1 0.10923 0.109228  1.9335 0.19780
IASMA_3               1 0.00674 0.006745  0.1194 0.73764
N_Gemme               1 0.00834 0.008340  0.1476 0.70974
Defogl                1 0.28818 0.288181  5.1011 0.05029 .
Dirad                 1 0.05191 0.051913  0.9189 0.36280
Vigoria               1 0.14222 0.142218  2.5174 0.14706
N_Gemme:Defogl        1 0.15602 0.156015  2.7616 0.13091
N_Gemme:Dirad         1 0.00009 0.000091  0.0016 0.96892
Defogl:Dirad          1 0.07784 0.077844  1.3779 0.27058
N_Gemme:Vigoria       1 0.01151 0.011506  0.2037 0.66245
Defogl:Vigoria        1 0.00119 0.001188  0.0210 0.88790
Dirad:Vigoria         1 0.01891 0.018914  0.3348 0.57704
N_Gemme:Defogl:Dirad  1 0.03253 0.032526  0.5758 0.46739
Residuals             9 0.50844 0.056494
```

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

KA

```
Analysis of Variance Table

Response: Do_2009M[, 18]
                     Df   Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.022588 0.022588  0.8228 0.38800
IASMA_2               1 0.045520 0.045520  1.6581 0.22998
IASMA_3               1 0.032292 0.032292  1.1763 0.30631
N_Gemme               1 0.027942 0.027942  1.0178 0.33939
Defogl                1 0.114395 0.114395  4.1671 0.07161 .
Dirad                 1 0.066960 0.066960  2.4391 0.15278
Vigoria               1 0.083552 0.083552  3.0435 0.11502
N_Gemme:Defogl        1 0.028137 0.028137  1.0250 0.33779
N_Gemme:Dirad         1 0.000150 0.000150  0.0055 0.94262
Defogl:Dirad          1 0.006495 0.006495  0.2366 0.63831
N_Gemme:Vigoria       1 0.004536 0.004536  0.1652 0.69389
Defogl:Vigoria        1 0.009087 0.009087  0.3310 0.57917
Dirad:Vigoria         1 0.043285 0.043285  1.5767 0.24085
N_Gemme:Defogl:Dirad  1 0.005416 0.005416  0.1973 0.66741
Residuals             9 0.247071 0.027452
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

ApaA

```
Analysis of Variance Table

Response: Do_2009M[, 19]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1  305.19  305.19  1.1710 0.30734
IASMA_2               1 1151.41 1151.41  4.4178 0.06492 .
IASMA_3               1  681.98  681.98  2.6166 0.14020
N_Gemme               1   16.09   16.09  0.0617 0.80933
Defogl                1 1251.88 1251.88  4.8033 0.05610 .
Dirad                 1  240.54  240.54  0.9229 0.36181
Vigoria               1   31.15   31.15  0.1195 0.73748
N_Gemme:Defogl        1   57.71   57.71  0.2214 0.64914
N_Gemme:Dirad         1    0.09    0.09  0.0004 0.98530
Defogl:Dirad          1   17.57   17.57  0.0674 0.80099
N_Gemme:Vigoria       1  315.20  315.20  1.2094 0.30000
Defogl:Vigoria        1   49.27   49.27  0.1890 0.67396
Dirad:Vigoria         1    7.61    7.61  0.0292 0.86812
N_Gemme:Defogl:Dirad  1    1.36    1.36  0.0052 0.94392
Residuals             9 2345.68  260.63
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

Antoctot1A

Analysis of Variance Table

Response: Do_2009M[, 20]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 21439 | 21438.5 | 3.5187 | 0.09343 | . |
| IASMA_2 | 1 | 22463 | 22462.6 | 3.6868 | 0.08704 | . |
| IASMA_3 | 1 | 869 | 869.4 | 0.1427 | 0.71438 | |
| N_Gemme | 1 | 4356 | 4356.2 | 0.7150 | 0.41971 | |
| Defogl | 1 | 20637 | 20637.1 | 3.3872 | 0.09884 | . |
| Dirad | 1 | 1285 | 1285.3 | 0.2110 | 0.65691 | |
| Vigoria | 1 | 5673 | 5673.1 | 0.9311 | 0.35978 | |
| N_Gemme:Defogl | 1 | 359 | 359.0 | 0.0589 | 0.81364 | |
| N_Gemme:Dirad | 1 | 358 | 357.9 | 0.0587 | 0.81393 | |
| Defogl:Dirad | 1 | 265 | 265.3 | 0.0435 | 0.83936 | |
| N_Gemme:Vigoria | 1 | 304 | 304.3 | 0.0499 | 0.82814 | |
| Defogl:Vigoria | 1 | 2199 | 2199.1 | 0.3609 | 0.56281 | |
| Dirad:Vigoria | 1 | 5335 | 5335.3 | 0.8757 | 0.37381 | |
| N_Gemme:Defogl:Dirad | 1 | 1038 | 1037.8 | 0.1703 | 0.68948 | |
| Residuals | 9 | 54834 | 6092.7 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

Poliftot1A

Analysis of Variance Table

Response: Do_2009M[, 21]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 27049.7 | 27049.7 | 7.9534 | 0.02004 | * |
| IASMA_2 | 1 | 10786.1 | 10786.1 | 3.1714 | 0.10863 | |
| IASMA_3 | 1 | 3537.1 | 3537.1 | 1.0400 | 0.33445 | |
| N_Gemme | 1 | 3736.0 | 3736.0 | 1.0985 | 0.32193 | |
| Defogl | 1 | 16427.8 | 16427.8 | 4.8302 | 0.05554 | . |
| Dirad | 1 | 8161.1 | 8161.1 | 2.3996 | 0.15578 | |
| Vigoria | 1 | 249.6 | 249.6 | 0.0734 | 0.79257 | |
| N_Gemme:Defogl | 1 | 437.9 | 437.9 | 0.1288 | 0.72800 | |
| N_Gemme:Dirad | 1 | 80.2 | 80.2 | 0.0236 | 0.88135 | |
| Defogl:Dirad | 1 | 243.4 | 243.4 | 0.0716 | 0.79511 | |
| N_Gemme:Vigoria | 1 | 417.7 | 417.7 | 0.1228 | 0.73406 | |
| Defogl:Vigoria | 1 | 141.3 | 141.3 | 0.0416 | 0.84300 | |
| Dirad:Vigoria | 1 | 64.5 | 64.5 | 0.0190 | 0.89348 | |
| N_Gemme:Defogl:Dirad | 1 | 75.5 | 75.5 | 0.0222 | 0.88487 | |
| Residuals | 9 | 30609.3 | 3401.0 | | | |

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: -0.685
IASMA_2: n.s
IASMA_3: n.s

Antoctot2A

Analysis of Variance Table

Response: Do_2009M[, 22]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| IASMA_1 | 1 | 10527 | 10527 | 0.5267 | 0.4864 |
| IASMA_2 | 1 | 36089 | 36089 | 1.8057 | 0.2119 |
| IASMA_3 | 1 | 7777 | 7777 | 0.3891 | 0.5482 |
| N_Gemme | 1 | 647 | 647 | 0.0324 | 0.8612 |
| Defogl | 1 | 35655 | 35655 | 1.7840 | 0.2145 |
| Dirad | 1 | 1946 | 1946 | 0.0974 | 0.7621 |
| Vigoria | 1 | 10721 | 10721 | 0.5364 | 0.4826 |
| N_Gemme:Defogl | 1 | 396 | 396 | 0.0198 | 0.8911 |
| N_Gemme:Dirad | 1 | 2275 | 2275 | 0.1138 | 0.7435 |
| Defogl:Dirad | 1 | 47 | 47 | 0.0023 | 0.9625 |
| N_Gemme:Vigoria | 1 | 52 | 52 | 0.0026 | 0.9604 |
| Defogl:Vigoria | 1 | 8302 | 8302 | 0.4154 | 0.5353 |
| Dirad:Vigoria | 1 | 16571 | 16571 | 0.8291 | 0.3863 |
| N_Gemme:Defogl:Dirad | 1 | 128 | 128 | 0.0064 | 0.9381 |
| Residuals | 9 | 179876 | 19986 | | |

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

Poliftot2A

Analysis of Variance Table

Response: Do_2009M[, 23]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| IASMA_1 | 1 | 4906 | 4906.4 | 0.5979 | 0.4592 |
| IASMA_2 | 1 | 7838 | 7837.8 | 0.9551 | 0.3540 |
| IASMA_3 | 1 | 5974 | 5974.3 | 0.7280 | 0.4157 |
| N_Gemme | 1 | 31 | 31.5 | 0.0038 | 0.9520 |
| Defogl | 1 | 17657 | 17656.6 | 2.1515 | 0.1765 |
| Dirad | 1 | 232 | 231.8 | 0.0283 | 0.8702 |
| Vigoria | 1 | 203 | 203.1 | 0.0247 | 0.8785 |
| N_Gemme:Defogl | 1 | 235 | 235.0 | 0.0286 | 0.8694 |
| N_Gemme:Dirad | 1 | 1020 | 1020.4 | 0.1243 | 0.7325 |
| Defogl:Dirad | 1 | 3496 | 3496.1 | 0.4260 | 0.5303 |
| N_Gemme:Vigoria | 1 | 56 | 56.3 | 0.0069 | 0.9358 |
| Defogl:Vigoria | 1 | 1072 | 1072.2 | 0.1307 | 0.7261 |
| Dirad:Vigoria | 1 | 1264 | 1264.1 | 0.1540 | 0.7038 |
| N_Gemme:Defogl:Dirad | 1 | 6604 | 6604.1 | 0.8047 | 0.3930 |
| Residuals | 9 | 73860 | 8206.7 | | |

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

PvinacciaB

Analysis of Variance Table

Response: Do_2009M[, 24]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) | |
|---|---|---|---|---|---|---|
| IASMA_1 | 1 | 984464 | 984464 | 12.6105 | 0.006205 | ** |
| IASMA_2 | 1 | 81129 | 81129 | 1.0392 | 0.334622 | |
| IASMA_3 | 1 | 198109 | 198109 | 2.5377 | 0.145622 | |
| N_Gemme | 1 | 937469 | 937469 | 12.0085 | 0.007101 | ** |
| Defogl | 1 | 26816 | 26816 | 0.3435 | 0.572220 | |
| Dirad | 1 | 1761101 | 1761101 | 22.5588 | 0.001045 | ** |
| Vigoria | 1 | 4033 | 4033 | 0.0517 | 0.825279 | |
| N_Gemme:Defogl | 1 | 8668 | 8668 | 0.1110 | 0.746597 | |
| N_Gemme:Dirad | 1 | 563108 | 563108 | 7.2131 | 0.024971 | * |
| Defogl:Dirad | 1 | 6295 | 6295 | 0.0806 | 0.782862 | |
| N_Gemme:Vigoria | 1 | 48568 | 48568 | 0.6221 | 0.450531 | |
| Defogl:Vigoria | 1 | 34455 | 34455 | 0.4414 | 0.523125 | |
| Dirad:Vigoria | 1 | 24926 | 24926 | 0.3193 | 0.585843 | |
| N_Gemme:Defogl:Dirad | 1 | 66028 | 66028 | 0.8458 | 0.381737 | |
| Residuals | 9 | 702603 | 78067 | | | |

---

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: 0.764
IASMA_2: n.s
IASMA_3: n.s

DensMostoB

Analysis of Variance Table

Response: Do_2009M[, 25]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| IASMA_1 | 1 | 9.5960e-06 | 9.5957e-06 | 1.0910 | 0.3235 |
| IASMA_2 | 1 | 6.7200e-07 | 6.7190e-07 | 0.0764 | 0.7885 |
| IASMA_3 | 1 | 3.0780e-06 | 3.0780e-06 | 0.3500 | 0.5687 |
| N_Gemme | 1 | 3.3970e-06 | 3.3973e-06 | 0.3863 | 0.5497 |
| Defogl | 1 | 2.8200e-07 | 2.8210e-07 | 0.0321 | 0.8618 |
| Dirad | 1 | 1.2920e-06 | 1.2915e-06 | 0.1468 | 0.7105 |
| Vigoria | 1 | 1.4385e-05 | 1.4385e-05 | 1.6356 | 0.2329 |
| N_Gemme:Defogl | 1 | 5.7620e-06 | 5.7623e-06 | 0.6552 | 0.4391 |
| N_Gemme:Dirad | 1 | 1.1248e-05 | 1.1249e-05 | 1.2789 | 0.2873 |
| Defogl:Dirad | 1 | 1.8900e-07 | 1.8890e-07 | 0.0215 | 0.8867 |
| N_Gemme:Vigoria | 1 | 8.0090e-06 | 8.0094e-06 | 0.9107 | 0.3649 |
| Defogl:Vigoria | 1 | 2.7600e-07 | 2.7570e-07 | 0.0313 | 0.8634 |
| Dirad:Vigoria | 1 | 5.8200e-06 | 5.8200e-06 | 0.6617 | 0.4369 |
| N_Gemme:Defogl:Dirad | 1 | 1.1890e-06 | 1.1889e-06 | 0.1352 | 0.7216 |
| Residuals | 9 | 7.9156e-05 | 8.7951e-06 | | |

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s

BrixB

Analysis of Variance Table

Response: Do_2009M[, 26]

| | Df | Sum Sq | Mean Sq | F value | Pr(>F) |
|---|---|---|---|---|---|
| IASMA_1 | 1 | 0.5204 | 0.52036 | 1.1562 | 0.3102 |
| IASMA_2 | 1 | 0.0250 | 0.02495 | 0.0554 | 0.8191 |
| IASMA_3 | 1 | 0.1486 | 0.14858 | 0.3301 | 0.5797 |
| N_Gemme | 1 | 0.1979 | 0.19787 | 0.4396 | 0.5239 |

```
Defogl               1 0.0465 0.04649  0.1033 0.7553
Dirad                1 0.0396 0.03958  0.0879 0.7735
Vigoria              1 0.6268 0.62685  1.3928 0.2682
N_Gemme:Defogl       1 0.2936 0.29360  0.6524 0.4401
N_Gemme:Dirad        1 0.5405 0.54053  1.2010 0.3016
Defogl:Dirad         1 0.0242 0.02423  0.0538 0.8217
N_Gemme:Vigoria      1 0.3640 0.36404  0.8089 0.3919
Defogl:Vigoria       1 0.0090 0.00901  0.0200 0.8906
Dirad:Vigoria        1 0.3163 0.31634  0.7029 0.4235
N_Gemme:Defogl:Dirad 1 0.0785 0.07851  0.1744 0.6860
Residuals            9 4.0506 0.45006

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


PhB

Analysis of Variance Table

Response: Do_2009M[, 27]
                     Df   Sum Sq   Mean Sq F value  Pr(>F)
IASMA_1               1 0.019772 0.0197716  2.4491 0.15204
IASMA_2               1 0.001198 0.0011984  0.1484 0.70898
IASMA_3               1 0.003499 0.0034990  0.4334 0.52680
N_Gemme               1 0.005533 0.0055329  0.6853 0.42916
Defogl                1 0.004494 0.0044937  0.5566 0.47466
Dirad                 1 0.001270 0.0012699  0.1573 0.70090
Vigoria               1 0.016189 0.0161892  2.0053 0.19041
N_Gemme:Defogl        1 0.000140 0.0001405  0.0174 0.89795
N_Gemme:Dirad         1 0.002338 0.0023375  0.2895 0.60356
Defogl:Dirad          1 0.001774 0.0017742  0.2198 0.65037
N_Gemme:Vigoria       1 0.001144 0.0011437  0.1417 0.71535
Defogl:Vigoria        1 0.003493 0.0034931  0.4327 0.52714
Dirad:Vigoria         1 0.030749 0.0307493  3.8088 0.08275 .
N_Gemme:Defogl:Dirad  1 0.001294 0.0012944  0.1603 0.69819
Residuals             9 0.072658 0.0080732
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


AcTitolB

Analysis of Variance Table

Response: Do_2009M[, 28]
                     Df  Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.12439 0.124388  2.2263 0.16988
IASMA_2               1 0.19239 0.192390  3.4434 0.09648 .
IASMA_3               1 0.00002 0.000019  0.0003 0.98570
N_Gemme               1 0.05888 0.058875  1.0538 0.33144
Defogl                1 0.07092 0.070921  1.2694 0.28903
Dirad                 1 0.06989 0.069892  1.2509 0.29234
Vigoria               1 0.17031 0.170305  3.0481 0.11478
N_Gemme:Defogl        1 0.03087 0.030873  0.5526 0.47623
N_Gemme:Dirad         1 0.16161 0.161614  2.8926 0.12320
```

```
Defogl:Dirad          1 0.03475 0.034749  0.6219 0.45060
N_Gemme:Vigoria       1 0.01875 0.018745  0.3355 0.57664
Defogl:Vigoria        1 0.02845 0.028446  0.5091 0.49360
Dirad:Vigoria         1 0.14943 0.149427  2.6745 0.13640
N_Gemme:Defogl:Dirad  1 0.04984 0.049840  0.8920 0.36959
Residuals             9 0.50285 0.055872
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

AcTartB

Analysis of Variance Table

```
Response: Do_2009M[, 29]
                     Df  Sum Sq  Mean Sq F value Pr(>F)
IASMA_1               1 0.00047 0.000472  0.0051 0.9446
IASMA_2               1 0.12762 0.127621  1.3828 0.2698
IASMA_3               1 0.01674 0.016739  0.1814 0.6802
N_Gemme               1 0.11796 0.117960  1.2781 0.2875
Defogl                1 0.01355 0.013551  0.1468 0.7105
Dirad                 1 0.08494 0.084945  0.9204 0.3624
Vigoria               1 0.17953 0.179533  1.9452 0.1966
N_Gemme:Defogl        1 0.05480 0.054799  0.5937 0.4607
N_Gemme:Dirad         1 0.05990 0.059903  0.6491 0.4412
Defogl:Dirad          1 0.23397 0.233971  2.5351 0.1458
N_Gemme:Vigoria       1 0.07238 0.072381  0.7842 0.3989
Defogl:Vigoria        1 0.00207 0.002070  0.0224 0.8842
Dirad:Vigoria         1 0.05126 0.051258  0.5554 0.4751
N_Gemme:Defogl:Dirad  1 0.02085 0.020855  0.2260 0.6459
Residuals             9 0.83064 0.092293

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

AcMalicoB

Analysis of Variance Table

```
Response: Do_2009M[, 30]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1 0.00770 0.00770  0.0852 0.77705
IASMA_2               1 0.34630 0.34630  3.8292 0.08206 .
IASMA_3               1 0.06882 0.06882  0.7609 0.40570
N_Gemme               1 0.00601 0.00601  0.0665 0.80233
Defogl                1 0.14889 0.14889  1.6464 0.23151
Dirad                 1 0.00403 0.00403  0.0446 0.83751
Vigoria               1 0.01343 0.01343  0.1485 0.70889
N_Gemme:Defogl        1 0.01768 0.01768  0.1955 0.66881
N_Gemme:Dirad         1 0.06388 0.06388  0.7063 0.42243
Defogl:Dirad          1 0.13727 0.13727  1.5179 0.24915
N_Gemme:Vigoria       1 0.00067 0.00067  0.0074 0.93311
Defogl:Vigoria        1 0.00510 0.00510  0.0564 0.81759
Dirad:Vigoria         1 0.00085 0.00085  0.0094 0.92505
N_Gemme:Defogl:Dirad  1 0.02567 0.02567  0.2839 0.60709
```

```
Residuals              9 0.81392 0.09044
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

KB

Analysis of Variance Table

```
Response: Do_2009M[, 31]
                     Df  Sum Sq  Mean Sq F value  Pr(>F)
IASMA_1               1 0.01000 0.009999  0.2176 0.65195
IASMA_2               1 0.00009 0.000086  0.0019 0.96646
IASMA_3               1 0.01522 0.015218  0.3312 0.57906
N_Gemme               1 0.02616 0.026156  0.5692 0.46985
Defogl                1 0.03808 0.038077  0.8287 0.38639
Dirad                 1 0.05495 0.054951  1.1959 0.30255
Vigoria               1 0.05188 0.051884  1.1291 0.31564
N_Gemme:Defogl        1 0.01633 0.016331  0.3554 0.56576
N_Gemme:Dirad         1 0.01054 0.010537  0.2293 0.64345
Defogl:Dirad          1 0.00909 0.009093  0.1979 0.66693
N_Gemme:Vigoria       1 0.04152 0.041515  0.9035 0.36667
Defogl:Vigoria        1 0.02251 0.022508  0.4898 0.50169
Dirad:Vigoria         1 0.19127 0.191270  4.1625 0.07174 .
N_Gemme:Defogl:Dirad  1 0.00128 0.001282  0.0279 0.87105
Residuals             9 0.41355 0.045950
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

ApaB

Analysis of Variance Table

```
Response: Do_2009M[, 32]
                     Df  Sum Sq Mean Sq F value  Pr(>F)
IASMA_1               1  764.71  764.71  4.4047 0.06525 .
IASMA_2               1  529.94  529.94  3.0525 0.11456
IASMA_3               1   30.41   30.41  0.1752 0.68538
N_Gemme               1  105.94  105.94  0.6102 0.45476
Defogl                1 1535.37 1535.37  8.8437 0.01560 *
Dirad                 1   78.58   78.58  0.4526 0.51800
Vigoria               1   47.62   47.62  0.2743 0.61313
N_Gemme:Defogl        1  100.68  100.68  0.5799 0.46583
N_Gemme:Dirad         1  651.18  651.18  3.7508 0.08476 .
Defogl:Dirad          1   29.24   29.24  0.1684 0.69110
N_Gemme:Vigoria       1  470.90  470.90  2.7124 0.13398
Defogl:Vigoria        1    0.61    0.61  0.0035 0.95399
Dirad:Vigoria         1    0.57    0.57  0.0033 0.95563
N_Gemme:Defogl:Dirad  1   48.50   48.50  0.2794 0.60989
Residuals             9 1562.50  173.61
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s


Antoctot1B

Analysis of Variance Table

Response: Do_2009M[, 33]
                     Df Sum Sq Mean Sq F value  Pr(>F)  
IASMA_1               1   4076  4075.7  1.1556 0.31035  
IASMA_2               1  21213 21212.7  6.0144 0.03661 *
IASMA_3               1   2561  2561.1  0.7262 0.41623  
N_Gemme               1      8     8.5  0.0024 0.96200  
Defogl                1  24849 24849.2  7.0455 0.02629 *
Dirad                 1   7524  7524.2  2.1333 0.17814  
Vigoria               1   5864  5864.3  1.6627 0.22939  
N_Gemme:Defogl        1   1787  1786.5  0.5065 0.49468  
N_Gemme:Dirad         1     28    27.5  0.0078 0.93153  
Defogl:Dirad          1   3034  3033.7  0.8601 0.37790  
N_Gemme:Vigoria       1  12604 12604.1  3.5736 0.09128 .
Defogl:Vigoria        1   2866  2865.9  0.8126 0.39084  
Dirad:Vigoria         1   5579  5579.0  1.5818 0.24015  
N_Gemme:Defogl:Dirad  1   3715  3715.2  1.0534 0.33152  
Residuals             9  31743  3527.0                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: 0.633
IASMA_3: n.s


Poliftot1B

Analysis of Variance Table

Response: Do_2009M[, 34]
                     Df  Sum Sq Mean Sq F value  Pr(>F)   
IASMA_1               1  5067.7  5067.7  3.8487 0.08141 . 
IASMA_2               1  2365.4  2365.4  1.7965 0.21299   
IASMA_3               1   106.1   106.1  0.0806 0.78291   
N_Gemme               1  3179.3  3179.3  2.4146 0.15463   
Defogl                1 23184.5 23184.5 17.6079 0.00232 **
Dirad                 1  7090.9  7090.9  5.3853 0.04544 * 
Vigoria               1  1190.5  1190.5  0.9041 0.36651   
N_Gemme:Defogl        1   149.3   149.3  0.1134 0.74406   
N_Gemme:Dirad         1  3433.9  3433.9  2.6079 0.14079   
Defogl:Dirad          1   779.2   779.2  0.5918 0.46145   
N_Gemme:Vigoria       1    29.0    29.0  0.0220 0.88532   
Defogl:Vigoria        1  2182.1  2182.1  1.6572 0.23010   
Dirad:Vigoria         1   629.5   629.5  0.4781 0.50673   
N_Gemme:Defogl:Dirad  1  2050.8  2050.8  1.5576 0.24352   
Residuals             9 11850.4  1316.7                   
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
```

```
IASMA_3: n.s
```

Antoctot2B

```
Analysis of Variance Table

Response: Do_2009M[, 35]
                    Df Sum Sq Mean Sq F value  Pr(>F)  
IASMA_1              1    857     857  0.0312 0.86375  
IASMA_2              1  98982   98982  3.5996 0.09028 .
IASMA_3              1  19576   19576  0.7119 0.42068  
N_Gemme              1  15330   15330  0.5575 0.47433  
Defogl               1  43543   43543  1.5835 0.23992  
Dirad                1     25      25  0.0009 0.97657  
Vigoria              1   6676    6676  0.2428 0.63399  
N_Gemme:Defogl       1  10257   10257  0.3730 0.55648  
N_Gemme:Dirad        1    568     568  0.0207 0.88889  
Defogl:Dirad         1  15383   15383  0.5594 0.47358  
N_Gemme:Vigoria      1  20214   20214  0.7351 0.41348  
Defogl:Vigoria       1   3915    3915  0.1424 0.71467  
Dirad:Vigoria        1   1688    1688  0.0614 0.80991  
N_Gemme:Defogl:Dirad 1     59      59  0.0022 0.96396  
Residuals            9 247484   27498                  
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

Poliftot2B

```
Analysis of Variance Table

Response: Do_2009M[, 36]
                    Df Sum Sq Mean Sq F value Pr(>F)
IASMA_1              1    992   991.5  0.0432 0.8400
IASMA_2              1  21934 21933.7  0.9552 0.3539
IASMA_3              1  10291 10290.8  0.4482 0.5200
N_Gemme              1   6098  6097.9  0.2656 0.6187
Defogl               1  30351 30351.3  1.3218 0.2799
Dirad                1   4473  4473.2  0.1948 0.6694
Vigoria              1    723   723.3  0.0315 0.8631
N_Gemme:Defogl       1     56    55.6  0.0024 0.9618
N_Gemme:Dirad        1   1513  1512.6  0.0659 0.8032
Defogl:Dirad         1   6090  6090.4  0.2652 0.6190
N_Gemme:Vigoria      1  10558 10557.7  0.4598 0.5148
Defogl:Vigoria       1   1095  1094.5  0.0477 0.8320
Dirad:Vigoria        1   7133  7132.5  0.3106 0.5909
N_Gemme:Defogl:Dirad 1   1733  1733.2  0.0755 0.7897
Residuals            9 206653 22961.4               

IASMA_1: n.s
IASMA_2: n.s
IASMA_3: n.s
```

# Allegato 3.1 : CODICI E LORO STRUTTURA ALL'INTERNO DEL GEODB TUSCANIA

**Codici piante e campioni**

La struttura del database si basa fondamentalmente sul disegno sperimentale e sull'utilizzo di due codici che riconoscono le piante:

1. **ID_POSIZIONE**. Questo codice è ottenibile attraverso la composizione dei quattro campi **ID_VIGNETO, FILA, FORO, POSIZIONE**. Questo codice identifica ogni pianta in campo indipendentemente che essa faccia parte o no di quelle scelte effettivamente ogni anno come campioni all'interno di ogni parcella. Il codice è composto da una serie di informazioni che permettono a chi sta cercando la posizione in campo delle singole viti, di poterle rintracciare semplicemente scomponendo le varie parti del codice. Il codice è così composto:
    - Sigla del vigneto
    - Numero della fila
    - Numero del foro (campata)
    - Posizione della pianta nel foro (1,2,3,4,5,…)
    - Ogni parte del codice è divisa dalla seguente da underscore ( _ )

   Di conseguenza la pianta con il codice: Br_2_3_5 è la pianta che si trova nel vigneto di Brolio, nella fila 2, foro 3, posizione 5.

   L'elenco delle piante dei vigneti, identificate univocamenente dalla composizione dei campi ID_VIGNETO, FILA, FORO, POSIZIONE, è contenuto nella tabella PASSAPORTO, che forma l'asse portante di tutto il GeoDB Tuscania, in quanto la maggior parte delle altre tabelle sono collegate a questa attraverso i campi che individuano la loro posizione nel vigneto.
2. **ID_CAMPIONE**. Questo codice identifica le piante che di anno in anno vengono scelte come campioni per le varie analisi. Va precisato che queste possono variare di anno in anno a causa, per esempio, delle loro condizioni sanitarie. Si è quindi creato questo codice che riconosce in maniera univoca il campione e che, correlato all'insieme dei campi che identificano la posizione, permette di sapere la precisa posizione del campione.

   Il codice è così composto:
    - Sigla del vigneto

- Sigla del blocco
- Sigla dalla parcella
- Sigla della pianta
- Sigla dell'anno
- Ogni parte del codice è divisa dalla seguente da underscore ( _ )

Di conseguenza la pianta con il codice. Br_1_8_3_07 è la pianta campione per il vigneto di Brolio del blocco 1, parcella 8, pianta 3 per l'anno 2007.
Questo tipo di codice, che va a sostituire il precedentemente creato ed adesso eliminato ID_PIANTA_TESI, è stato così ideato al fine di identificare in maniera univoca il campione e al tempo stesso non dare indicazioni sui trattamenti effettuati sulle singole piante, come invece avveniva precedentemente. Questa scelta nasce dal fatto che gli operatori che vanno in campo ad esaminare le piante campione, non devono sapere il tipo di trattamenti effettuati, perché ciò condizionerebbe la loro valutazione. Ogni pianta campione quindi ha il suo codice ID_CAMPIONE e il codice ID_POSIZIONE (ovvero la composizione di ID_VIGNETO, FILA, FORO e POSIZIONE) per poter così essere identificata in campo.

**Codici per i blocchi e le parcelle**

Per quanto riguarda i blocchi e le parcelle, anche per questi si è creato un codice che li rende univoci. Infatti, precedentemente, all'interno di ogni blocco la parcelle erano genericamente identificate con un numero da 1 a 8, per cui, considerati i 4 vigneti, avevamo 32 parcelle identificate genericamente con 1, 2, 3… Adesso si è deciso di usare un codice, sia per i blocchi, sia per le parcelle, che segue il modello concettuale dell'ID_CAMPIONE.
Il codice che identifica i blocchi, **ID_BLOCCO**, sarà così composto:

- Sigla del vigneto
- Sigla del blocco
- Ogni parte del codice è divisa dalla seguente da underscore ( _ )

L'elenco dei blocchi è contenuto nella tabella BLOCCHI.
Il codice che identifica le parcelle, **ID_PARCELLA,** sarà così composto:

- Sigla del vigneto
- Sigla del blocco
- Sigla dalla parcella

- Ogni parte del codice è divisa dalla seguente da underscore ( _ )

L'elenco delle parcelle è contenuto nella tabella PARCELLE.
Da notare è il fatto che, malgrado siano stati effettuati cambiamenti formali nei codici, in sostanza la numerazione dei blocchi, delle parcelle e dell'ID_POSIZIONE è rimasta la stessa, per cui il Blocco 1 del vigneto di Brolio che prima si chiamava genericamente blocco 1 come quelli di Donna Olimpia e Mortelle, adesso si chiamerà univocamente BR_1. Questo fatto permetterà, a chi ne avrà bisogno, di potersi aggiornare i propri dati con le nuove codifiche senza rischio di errori.

**Codici per stazioni meteo**

L'elenco delle stazioni meteo presenti nei quattro vigneti sperimentali sarà contenuto nella tabella STAZIONI_METEO. Il codice delle stazioni viene identificato dal campo **ID_STAZ_METEO**. Per le stazioni slave il codice che le identifica sarà quello della parcella in cui si trovano seguito da suffisso S preceduto da underscore. Per cui la slave per la parcella Br_1_8 sarà Br_1_8_S. La loro posizione sarà individuata, per chi le cercasse in campo senza saperne la collocazione, dall'ID_POSIZIONE della pianta più vicina. Per le stazioni Master si è deciso di usare una codificazione analoga a quella usata per le slave, ma visto che, trovandosi all'esterno del vigneto, non appartengono a nessuna parcella, avranno un codice standard tipo Br_0_0_M. Tale scelta è stata fatta perché, da un punto di vista computazionale, è necessario che i codici di master e slave abbiano le stesse dimensioni e tipo di campo. Ovviamente per le stazioni master non ci sarà un ID_POSIZIONE associato.

# Allegato 3.2 – SPECIFICHE TECNICHE DEL GEODATABASE TUSCANIA ( LINEA A.1)

## LE TABELLE DEL GEODATABASE TUSCANIA

Il GeoDB Tuscania è un classico geodatabase relazionale organizzato per tabelle in maniera da poter raccogliere tutti i dati dei vigneti e delle sperimentazioni su di essi svolte evitando ridondanze.

Ogni tabella del GeoDb è caratterizzata dall'avere una chiave primaria, cioè un campo o un insieme di campi che permette di identificare in maniera univoca un record nella tabella. In altre parole, nessun record nella tabella può avere il campo o un insieme di campi identificato dalla chiave primaria identico a quello di un qualsiasi altro record della stessa (vincolo di unicità).La chiave primaria per sua stessa natura non può contenere campi nulli o duplicati e può essere ad un campo o multicampo. La chiave primaria ad un campo è quella che è definita da un solo campo della tabella, ad esempio il campo ID_VIGNETO della tabella VIGNETO. Altro esempio sono i campi contatore come ID_FLUORESCENZA nella tabella FLUORESCENZA. Il campo contatore è un campo particolare che si aggiorna automaticamente in maniera sequenziale ogni qualvolta alla tabella viene aggiunto un record. In tal modo si può essere certi della univocità dei valori nel campo. La chiave primaria multicampo è quella che viene identificata da duo o più campi. Ad esempio nella tabella passaporto abbiamo la chiave primaria composta da (ID_VIGNETO, FILA, FORO, POSIZIONE).

Al fine di evitare ridondanze e razionalizzare le risorse utilizzate dal GeoDB si è fatto uso delle cosiddette categorie. Le categorie sono tabelle che rappresentano sottotipi di una tabella padre. Ad esempio nella tabella PASSAPORTO abbiamo la colonna ID_CLONE che contiene l'informazione relativa alla selezione clonale. Invece di indicare il nome completo del clone per ogni pianta, si è adottato un codice che identifica tale tipo di clone. Nella tabella CLONE, collegata alla tabella PASSAPORTO attraverso il campo ID_CLONE, abbiamo la estrinsecazione di tale codice attraverso il campo descrittivo correlato. Nel GeoDB Tuscania le categorie sono state usate frequentemente e sono successivamente riportate sotto alla tabella padre corrispondente.

Al momento i dati contenuti nel GeoDB riguardano principalmente:

- **La struttura e le caratteristiche del vigneto e delle piante che ne fanno parte**. Le tabelle fondamentali sono PASSAPORTO (contiene le informazioni delle singole piante), VIGNETO (contiene le informazioni caratterizzanti i vigneti), CAMPIONI (contiene l'elenco dei campioni scelti ogni anno per le varie parcelle), BLOCCHI (contiene l'elenco dei blocchi di ogni vigneto) PARCELLE (contiene l'elenco di tutti le parcelle dei vigneti) TESI (contiene l'elenco di tutti le tesi e dei trattamenti che li caratterizzano). La tabella CAMPIONI, attraverso i campi che compongono l'ID_POSIZIONE (**ID_VIGNETO**, **FILA, FORO, POSIZIONE)** è collegata alla tabella PASSAPORTO che contiene essa stessa, o attraverso il collegamento alle altre tabelle del database, le informazione e analisi rintracciabili per tale pianta o altre informazioni correlate su blocco, parcella, vigneto, meteo…
- **I risultati delle analisi svolte in campo e in laboratorio da IASMA e DIPROVE**. Questi dati sono raccolti in 10 tabelle con relative categorie. Queste tabelle raccolgono le analisi svolte negli anni di sperimentazione e contengono le indicazioni di posizione relative alle piante su cui sono state svolte.
- **I dati raccolti dalle stazioni meteo dell'IBIMET**. La tabella STAZIONI_METEO contiene l'elenco delle stazioni meteo di tutti i vigneti e loro posizione identificata dall'ID_POSIZIONE della pianta più vicina. I dati raccolti dalle stazioni master si trovano nella stazione METEO_MASTER, mentre quelli raccolti dalle stazioni slave in METEO_SLAVE.
- **I risultati delle analisi svolte sulle uve vinificate**. La tabella VINIFICAZIONI contiene le analisi svolte su uve vinificate presso la cantina sperimentale del Consorzio Tuscania. Sono presenti inoltre due tabelle categorie che identificano la fate e il tipo di analisi.
- **Le informazioni spaziali riguardanti le entità fisiche presenti nei vari vigneti**.

Queste informazioni, che nei comuni Sistemi Informativi Territoriali sono gestite come semplici shapefile, nel GeoDB sono immagazzinate come tabelle in cui ogni record registra un oggetto (punto, linea o poligono) e, attraverso uno specifico campo, la sua posizione geografica.

Per una maggiore comprensione della struttura del GeoDB Tuscania e delle relazioni esistenti fra le varie tabelle rimandiamo alla consultazione del "Diagramma

GeoDatabase Tuscania”. Inoltre si riportano di seguito in dettaglio i contenuti e le specifiche tecniche di tutte le tabelle incluse nel DB.

L’attuale struttura del GeoDB in futuro potrà comunque essere modificata e ampliata anche per includere i dati provenienti da eventuali nuovi partner del Consorzio.

**ELENCO DELLE COLONNE, CONTENUTO E LORO FORMATO NELLE TABELLE DEL GEODB TUSCANIA**

Nota: in rosso sono identificate le primary key

### Descrizione della tabella contenente le informazioni sulle piante: PASSAPORTO e CAMPIONI

| TABELLA: PASSAPORTO | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |
| **TAG** | Codice del trasponder inserito nel palo che identifica l'inizio del foro | text_16 |
| **ID_STATO** | Stato della pianta (presente, assente, morta, ecc.) | text_2 |
| **ID_BLOCCO** | Codice identificativo del blocco | integer |
| **ID_PARCELLA** | Codice identificativo della parcella | integer |
| **X_COORD** | Coordinate X (UTM32N WGS84) | Double |
| **Y_COORD** | Coordinate Y (UTM32N WGS84) | Double |
| **QUOTA** | Quota sul livello del mare | Double |
| **ID_CLONE** | Selezione clonale | Integer |
| **ID_PORTINNESTO** | Portinnesto | Integer |
| **ID_VITIGNO** | Nome varietale | text_2 |
| **NOTE** | Commenti, annotazioni | text_250 |

| TABELLA: CAMPIONI | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **ID_BLOCCO** | Codice identificativo del blocco | Integer |
| **ID_PARCELLA** | Codice identificativo della parcella | Integer |
| **SIGLA_PIANTA** | Numero identificativo della pianta nella parcella di appartenenza | Integer |
| **ANNO** | Anno a cui è riferito il campione | Integer |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |

### Categorie per la tabella PASSAPORTO e loro dati attualmente previsti

| TABELLA: STATO | | | |
|---|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** | **DATI ATTUALMENTE PREVISTI** |

| | | | | | |
|---|---|---|---|---|---|
| ID_STATO | Stato della pianta | text_2 | P | A | M |
| DESCRIZIONE | Campo descrittivo | text_25 | presente | assente | morta |

| TABELLA: CLONE | | | | | |
|---|---|---|---|---|---|
| NOME COLONNA | CONTENUTO | FORMATO | DATI ATTUALMENTE PREVISTI | | |
| ID_CLONE | Selezione clonale | Integer | 1 | 2 | 3 |
| DESCRIZIONE | Campo descrittivo | text_50 | Sangiovese clone R24 | Sangiovese clone R23 | Cabernet Sauvignon 191 |

| TABELLA: PORTINNESTO | | | | |
|---|---|---|---|---|
| NOME COLONNA | CONTENUTO | FORMATO | DATI ATTUALMENTE PREVISTI | |
| ID_PORTINNESTO | Portinnesto | Integer | 1 | 2 |
| DESCRIZIONE | Campo descrittivo | text_100 | 420A | 101_14 |

| TABELLA: VITIGNO | | | | |
|---|---|---|---|---|
| NOME COLONNA | CONTENUTO | FORMATO | DATI ATTUALMENTE PREVISTI | |
| ID_VITIGNO | Nome varietale | text_2 | SA | CB |
| DESCRIZIONE | Campo descrittivo | text_25 | San Giovese | Cabernet Suavignon |

**Descrizione della tabella contenente le informazioni fondamentali sui: VIGNETO**

| TABELLA: VIGNETO | | |
|---|---|---|
| NOME COLONNA | CONTENUTO | FORMATO |
| VIGNETO | Nome dell'impianto | text_20 |
| ID_VIGNETO | Codice identificativo del vigneto | text_2 |
| AZIENDA | Ragione sociale dell'azienda | text_30 |
| NOME_COMUNE_CAT | Nome del comune catastale | text_50 |
| CODICE_COMUNE_CAT | Codice del comune catastale | text_10 |
| CODICE_PART_CAT | Codice della particella catastale | text_50 |
| LONGITUDINE | Coordinate X del centroide del vigneto (GB) | Double |
| LATITUDINE | Coordinate Y del centroide del vigneto (GB) | Double |
| QUOTA_MEDIA | quota media sul livello del mare | Double |
| PENDENZA_MEDIA | pendenza media del campo | Double |
| ESPOSIZIONE_MEDIA | esposizione media del campo | Double |
| ID_TIPO_TERRENO | tipo di terreno per modello IRRI3 su bilancio evapotrasporativo | text_2 |
| LIMO_PERC | Percentuale di limo nel terreno | Double |
| SABBIA_PERC | Percentuale di sabbia nel terreno | Double |
| ARGILLA_PERC | Percentuale di argilla nel terreno | Double |
| ID_FORMA_ALLEVAMENTO | Forma di allevamento | text_2 |
| ID_SISTEMA_ALLEVAMENTO | Sistema di allevamento | text_2 |
| CEPPI_ETTARO | Numero medio di ceppi per ettaro | Integer |
| SESTO_PIANTE | Distanza tra le piante | Float |

| | | |
|---|---|---|
| **SESTO_FILE** | Distanza fra le file | Float |
| **PIANTE_X_FORO** | Numero di piante per foro (=distanza tra due pali) | Integer |
| **PRODUZ_ETTARO** | Produzione media per ettaro | Integer |
| **ID_STATO_IRRIGAZIONE** | Stato dell'irrigazione | text_2 |
| **ID_TIPO_IRRIGAZIONE** | Tipo (sistema) di irrigazione | text_2 |
| **DISTANZA_EROGATORI_GOCCIA** | Distanza tra erogatori sulla fila in metri | Float |
| **PORTATA_EROGATORI** | Portata di un erogatore in litri/ora | Float |
| **NOTE** | Commenti, annotazioni | text_250 |

## Categorie per la tabella VIGNETO e loro dati attualmente previsti:

| **TABELLA: TIPO_TERRENO** | | | | | | |
|---|---|---|---|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** | **DATI ATTUALMENTE PREVISTI** | | | |
| **ID_TIPO_TERRENO** | tipo di terreno per modello IRRI3 | text_2 | A | M | S | T |
| **DESCRIZIONE** | campo descrittivo | text_50 | argilloso | medio impasto | sabboso | torboso |

| **TABELLA: FORMA_ALLEVAMENTO** | | | | |
|---|---|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** | **DATI ATTUALMENTE PREVISTI** | |
| **ID_FORMA_ALLEVAMENTO** | forma di allevamento | text_2 | S | T |
| **DESCRIZIONE** | campo descrittivo | text_25 | spalliera | tendone |

| **TABELLA: SISTEMA_ALLEVAMENTO** | | | | | |
|---|---|---|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** | **DATI ATTUALMENTE PREVISTI** | | |
| **ID_SISTEMA_ALLEVAMENTO** | sistema di allevamento | text_2 | G | C | P |
| **DESCRIZIONE** | campo descrittivo | text_100 | guyot | cordone speronato | pergola semplice |

| **TABELLA: STATO_IRRIGAZIONE** | | | | |
|---|---|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** | **DATI ATTUALMENTE PREVISTI** | |
| **ID_STATO_IRRIGAZIONE** | stato dell'rrigazione | text_2 | A | P |
| **DESCRIZIONE** | campo descrittivo | text_25 | assente | presente |

| **TABELLA: TIPO IRRIGAZIONE** | | | | | | |
|---|---|---|---|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** | **DATI ATTUALMENTE PREVISTI** | | | |
| **ID_TIPO_IRRIGAZIONE** | Tipo di irrigazione | text_2 | P | SC | G | SU |
| **DESCRIZIONE** | campo descrittivo | text_25 | pioggia | scorrimento | goccia | subirrigazione |

## Descrizione della tabella contenente le informazioni fondamentali su: BLOCCHI

| **TABELLA: BLOCCHI** |
|---|

| NOME COLONNA | CONTENUTO | FORMATO |
|---|---|---|
| ID_BLOCCO | codice identificativo del blocco | integer |
| ID_VIGNETO | codice identificativo del vigneto | text_2 |
| ID_VIGORE | codice identificativo del vigore | text_2 |

**Categorie per la tabella BLOCCHI e loro dati attualmente previsti**

| TABELLA: VIGORE | | | | | |
|---|---|---|---|---|---|
| NOME COLONNA | CONTENUTO | FORMATO | DATI ATTUALMENTE PREVISTI | | |
| ID_VIGORE | Codice vigore | text_2 | L | M | H |
| DESCRIZIONE | campo descrittivo | text_25 | basso | medio | alto |

**Descrizione della tabella contenente le informazioni fondamentali su: PARCELLE**

| TABELLA: PARCELLE | | |
|---|---|---|
| NOME COLONNA | CONTENUTO | FORMATO |
| ID_PARCELLA | codice identificativo della parcella | integer |
| ID_BLOCCO | codice identificativo del blocco | integer |
| ID_TESI | codice identificativo della tesi | Integer |
| ID_VIGNETO | codice identificativo del vigneto | text_2 |

**Descrizione della tabella contenente le informazioni fondamentali su: TESI**

| TABELLA: TESI | | |
|---|---|---|
| NOME COLONNA | CONTENUTO | FORMATO |
| ID_TESI | Codice identificativo della tesi | Integer |
| ID_SELEZIONE_GEMME | Tipo di selezione del germoglio | text_2 |
| ID_DEFOGLIAZIONE | Effettuazione defogliazione | text_2 |
| ID_DIRADAMENTO | Effettuazione diradamento | text_2 |

**Categorie per la tabella TESI e loro dati attualmente previsti**

| TABELLA: SELEZIONE_GEMME | | | | |
|---|---|---|---|---|
| NOME COLONNA | CONTENUTO | FORMATO | DATI ATTUALMENTE PREVISTI | |
| ID_SELEZIONE_GEMME | Tipo di selezione del germoglio | text_2 | C0 | C1 |
| DESCRIZIONE | campo descrittivo | text_25 | 1 gemma con selezione dei germogli | 3 gemme con selezione germogli |

| TABELLA: DEFOGLIAZIONE | | | | |
|---|---|---|---|---|
| NOME COLONNA | CONTENUTO | FORMATO | DATI ATTUALMENTE PREVISTI | |
| ID_DEFOGLIAZIONE | Effettuazione defogliazione | text_2 | A0 | A1 |

| | | | | |
|---|---|---|---|---|
| **DESCRIZIONE** | campo descrittivo | text_25 | senza defogliazione | con defogliazione |

| **TABELLA: DIRADAMENTO** | | | | |
|---|---|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** | **DATI ATTUALMENTE PREVISTI** | |
| **ID_DIRADAMENTO** | Effettuazione diradamento | text_2 | D0 | D1 |
| **DESCRIZIONE** | campo descrittivo | text_100 | nessun diradamento | Diradamento al 50 % |

## Descrizione delle tabelle contenenti le ANALISI IASMA

| **TABELLA: FLUORESCENZA** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_FLUORESCENZA** | Campo contatore | Integer |
| **ESPOSIZIONE** | Esposizione | Text_4 |
| **FOGLIA_NR** | Numero della foglia | |
| **DATA_CAMP** | Data di campionamento | Date |
| **DATA_CAMP_STR** | Data di campionamento | text_8 |
| **ORA_CAMP** | Ora di campionamento | Time |
| **ORA_CAMP_STR** | Ora di campionamento | text_4 |
| **DATA_MISURA** | Data misurazione | Date |
| **DATA_MISURA_STR** | Data misurazione | text_8 |
| **Fo** | Fluorescenza basale dopo adattamento al buio | Float |
| **Fm** | Fluorescenza massima dopo adattamento al buio | Float |
| **FvFm** | Efficienza quantica | Float |
| **Time** | Ora misurazione | Time |
| **Nr** | Numero progressivo delle misure | Integer |
| **ML** | parametro dello strumento PAM2000 | Float |
| **Leaf_T** | Temperatura fogliare | Float |
| **PAR** | Flusso luminoso foto sinteticamente attivo | Float |
| **Ft** | Fluorescenza basale senza adattamento al buio | Float |
| **ETR** | Velocità del trasporto elettronico | Float |
| **Yield** | Resa quantica in condizioni di luce | Float |
| **qP** | quenching fotochimico | Float |
| **qN** | quenching non fotochimico | Float |
| **Fm1** | parametro dello strumento PAM2000 | Float |
| **Note** | Commenti, annotazioni | text_250 |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |
| **ID_Misure** | Codice identificativo del tipo di misura | Integer |

| TABELLA: NDVI | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_NDVI** | Campo contatore | Integer |
| **ID_MISURE** | Codice identificativo del tipo di misura | Integer |
| **DATA** | Data di campionamento | Date |
| **DATA_STR** | Data di campionamento | text_8 |
| **ORA_CAMP** | Ora di campionamento | Time |
| **ORA_CAMP_STR** | Ora di campionamento | text_4 |
| **GPS_data** | Localizzazione | text_50 |
| **RED_inc** | Rosso incidente | Float |
| **RED_refl** | Rosso riflesso | Float |
| **GREEN_inc** | Verde incidente | Float |
| **GREEN_refl** | Verde riflesso | Float |
| **FAR_RED_inc** | Rosso lontano incidente | Float |
| **FAR_RED_refl** | Rosso lontano riflesso | Float |
| **NIR_inc** | Infrarosso vicino incidente | Float |
| **NIR_refl** | Infrarosso vicino riflesso | Float |
| **NDVI_RED** | Valore di NDVIred (Normalized Difference Vegetation Index) | Float |
| **NDVI_GREEN** | Valore di NDVIgreen (Normalized Difference Vegetation Index) | Float |
| **RED_FARRED** | Rapporto Red/Far Red | Float |
| **Note** | Commenti, annotazioni | text_250 |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |

| TABELLA: SPAD | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_SPAD** | Campo contatore | Integer |
| **ID_Misure** | Codice identificativo del tipo di misura | Integer |
| **DATA** | Data di campionamento | Date |
| **DATA_STR** | Data di campionamento | text_8 |
| **ORA** | Ora di campionamento | Time |
| **ORA_STR** | Ora di campionamento | text_4 |
| **SPAD_value** | Valore di SPAD | Float |
| **Note** | Commenti, annotazioni | text_250 |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |

| TABELLA: LAI | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_LAI** | Campo contatore | Integer |
| **ID_Misure** | Codice identificativo del tipo di misura | Integer |

| | | |
|---|---|---|
| **DATA** | Data di campionamento | Date |
| **DATA_STR** | Data di campionamento | text_8 |
| **LAI** | Valore di Leaf Area Index | Float |
| **Note** | Commenti, annotazioni | text_250 |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |

| **TABELLA: POTENZIALE_IDRICO** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_POTENZIALE_IDIRICO** | Campo contatore | Integer |
| **ID_Misure** | Codice identificativo del tipo di misura | Integer |
| **DATA** | Data di campionamento | Date |
| **DATA_STR** | Data di campionamento | text_8 |
| **LWP** | Potenziale idrico fogliare | Float |
| **Note** | Commenti, annotazioni | text_250 |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |

| **TABELLA: PRELIEVI** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_PRELIEVI** | Campo contatore | Integer |
| **ID_Misure** | Codice identificativo del tipo di misura | Integer |
| **DATA** | Data di campionamento | Date |
| **DATA_STR** | Data di campionamento | text_8 |
| **ID_MATERIALE** | ID materiale raccolto | Integer |
| **ID_DESTINAZIONE** | ID destinazione del materiale raccolto | Integer |
| **Note** | Commenti, annotazioni | text_250 |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |

| **TABELLA: DATI_PRODUTTIVI** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_DATI_PRODUTTIVI** | Campo contatore | Integer |
| **ID_Misure** | Codice identificativo del tipo di misura | Integer |
| **DATA** | Data di campionamento | Date |
| **DATA_STR** | Data di campionamento | text_8 |
| **Nr_Grapp_ante** | Numero di grappoli pre-diradamento | Integer |
| **Nr_Grapp_post** | Numero di grappoli post-diradamento | Integer |

| | | |
|---|---|---|
| **Perc_diradamento** | Livello di diradamento espresso in % | Float |
| **Nr_Germogli** | Numero di germogli | Integer |
| **Peso_netto_per_pianta** | Peso dei grappoli alla raccolta | Float |
| **Fertilita** | Fertilità della pianta | Float |
| **Peso_medio_grappolo** | Peso medio del grappolo | Float |
| **Peso_uva** | Peso del campione di uve | Float |
| **Peso_uva_diraspata** | Peso della massa diraspata | Float |
| **Peso_mosto** | Peso del mosto ottenuto | Float |
| **Vinaccia** | Peso della vinaccia | Float |
| **Resa_lavorazione** | Peso mosto/peso uve | Float |
| **Indice_avvizzimento** | Indice che esprime avvizzimento delle uve | Float |
| **Peso_100_acini** | Peso di 100 acini | Float |
| **Botritis_perc** | Percentuale di Botritis | Float |
| **Peronospora_perc** | Percentuale di Peronospora | Float |
| **Oidio_perc** | Percentuale di oidio | Float |
| **Invaiatura_perc** | Percentuale di invaiatura | Float |
| **Densità mosto** | Densità mosto analizzato al FOSS | Float |
| **Contenuto zuccheri** | Derivato dal valore in gradi brix | Float |
| **Brix** | Zuccheri solubili (°Brix) | Float |
| **pH** | pH | Float |
| **Ac_titolabile** | Acidità totale (g/l) | Float |
| **Ac_Tartarico** | Acido Tartarico (g/l) | Float |
| **Ac_Malico** | Acido malico (g/l) | Float |
| **Potassio** | Concentrazione di potassio | Float |
| **APA** | Azoto prontamente assimilabile | Float |
| **Antociani_tot_1** | Espresso come mg/l sull'estratto da vinacce | Float |
| **Antociani_tot_2** | Espresso come mg/Kg peso fresco | Float |
| **Polifenoli_tot_1** | Espresso come mg/l sull'estratto da vinacce | Float |
| **Polifenoli_tot_2** | Espresso come mg/Kg peso fresco | Float |
| **Legno di potatura** | Peso legno di potatura | Float |
| **Indice _Ravaz** | indice di Ravaz = peso uva/peso legno | Float |
| **Zuccheri _solubili_perc_ss** | Perc. Sul peso secco mg/l | Float |
| **Zuccheri _solubili_perc_sf** | Perc. Sul peso fresco mg/l | Float |
| **Zuccheri_strutturali_perc_ss** | Perc. Sul peso secco mg/l | Float |
| **Zuccheri_strutturali_perc_sf** | Perc. Sul peso fresco mg/l | Float |
| **Note** | Commenti, annotazioni | text_250 |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro m | Integer |

| **TABELLA: FENOLOGIA** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_FENOLOGIA** | Campo contatore | Integer |
| **ID_Misure** | Codice identificativo del tipo di misura | Integer |
| **DATA** | Data di campionamento | Date |
| **DATA_STR** | Data di campionamento | text_8 |
| **ID_Fase** | Stadio di sviluppo del fenomeno fenologico | Integer |

| | | |
|---|---|---|
| **Note** | Commenti, annotazioni | text_250 |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |
| **ID_SUBCODE** | Campo col subcode (usato come FK per la FASE) | Integer |

| **TABELLA: POTATURA** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_POTATURA** | Campo contatore | Integer |
| **ID_VIGNETO** | Codice identificativo del vigneto | Text 2 |
| **FILA** | Numero della fila (ex. 1,2,3,ecc…) | Integer |
| **FORO** | Numero del foro o campata (ese foro 1,2,3, ecc…) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 ad un numero massimo di piante previste nel foro) | Integer |
| **GERMOGLI** | Numero germogli | Integer |
| **NODI_C** | Nodi_C | Integer |
| **NODI_FEMMINELLE** | Nodi femminelle | Integer |
| **NODI** | Nodi | Integer |
| **PESO_LEGNO** | Peso del legno | Integer |
| **SF** | SF | Double |
| **SF_FEMM** | SF Femminelle | Double |
| **SF_TOT** | SF totali | Double |
| **PMG** | PMG | Double |

| **TABELLA: RILIEVI_STRUMENTALI** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_RILIEVO_STRUMENTALE** | Campo contatore | Integer |
| **ID_RILIEVO** | Data del rilievo (formato YYYYMMDD) | Text 8 |
| **NDVI** | NDVI | Double |
| **CT_1** | CT 1 | Double |
| **CT_2** | CT 2 | Double |
| **CT_3** | CT 3 | Double |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |

| **TABELLA: POINT_QUADRAT** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_POINT_QUADRAT** | Campo contatore | Integer |
| **ID_RILIEVO** | Data rilievo (formato YYYYMMDD) | Text 8 |
| **SF_FG_170_0** | SF FG 170 0 | Integer |
| **SF_FG_170_40** | SF FG 170 40 | Integer |

| | | |
|---|---|---|
| **SF_FG_170_80** | SF FG 170 80 | Integer |
| **SF_FG_130_0** | SF FG 130 0 | Integer |
| **SF_FG_130_40** | SF FG 130 40 | Integer |
| **SF_FG_130_80** | SF FG 130 80 | Integer |
| **SF_FG_90_0** | SF FG 90 0 | Integer |
| **SF_FG_90_40** | SF FG 90 40 | Integer |
| **SF_FG_90_80** | SF FG 90 80 | Integer |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |

| **TABELLA: PROPRIETA_OTTICHE** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_PROPRIETA_OTTICHE** | Campo contatore | Integer |
| **ID_Misure** | Codice identificativo del tipo di misura | Integer |
| **DATA** | Data di campionamento | Date |
| **DATA_STR** | Data di campionamento | text_8 |
| **Spettro_nomefile** | | text_25 |
| **Note** | Commenti, annotazioni | text_250 |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |

## Categorie per le tabelle delle ANALISI IASMA

| **TABELLA: MISURE** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_MISURE** | Codice identificativo del tipo di misura | Integer |
| **DESCRIZIONE** | Campo descrittivo | text_100 |

| **TABELLA: MATERIALE** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_MATERIALE** | ID materiale raccolto | Integer |
| **DESCRIZIONE** | Campo descrittivo | text_250 |

| **TABELLA: DESTINAZIONE** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_DESTINAZIONE** | ID destinazione del materiale raccolto | Integer |
| **DESCRIZIONE** | Campo descrittivo | text_250 |

| **TABELLA: FENOMENO** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_FENOMENO** | Fenomeno fenologico oggetto di indagine | Integer |
| **DESCRIZIONE** | Campo descrittivo | text_100 |

| TABELLA: FASE | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_FASE** | Stato di sviluppo del fenomeno fenologico | Integer |
| **ID_FENOMENO** | Fenomeno fenologico oggetto di indagine | Integer |
| **ID_SUBCODE** | Stato di sviluppo del fenomeno fenologico | Integer |
| **DESCRIZIONE** | Campo descrittivo | text_250 |

**Descrizione della tabella contenente le informazioni fondamentali su: STAZIONI METEO**

| TABELLA: STAZIONI_METEO | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_STAZ_METEO** | Codice identificativo della stazione meteo | text_7 |
| **TIPO_STAZIONE** | Master o slave | text_1 |
| **ID_VIGNETO** | Codice identificativo del vigneto | text_2 |
| **FILA** | Numero della fila (es. 1, 2, ecc.) | Integer |
| **FORO** | Numero del foro o campata (es. foro 1, 2, 3, ecc.) | Integer |
| **POSIZIONE** | Numero della posizione della pianta nel foro (da 1 al numero massimo di piante previste nel foro) | Integer |

| TABELLA: METEO_SLAVE | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_STAZ_METEO** | Codice identificativo della stazione meteo | text_8 |
| **DATA** | Data di campionamento | Date |
| **DATA_STR** | Data di campionamento | text_8 |
| **ORA** | Ora di campionamento | Time |
| **TCJC** | Temperatura giunto riferimento (°C) | Double |
| **TAIR** | Temperatura aria (°C) | Double |
| **TGRAP** | Temperatura interna grappolo (°C) | Double |
| **TLEAF** | Temperatura fogliare a infrarosso (°C) | Double |
| **TSOIL1** | Temperatura terreno a 30cm (°C) | Double |
| **TSOIL2** | Temperatura terreno a 60cm (°C) | Double |
| **T_HEATSOIL1** | Temperatura riscaldatore a 30cm (°C) x calcolo pot. Idrico | Double |
| **T_HEATSOIL2** | Temperatura riscaldatore a 60cm (°C) x calcolo pot. Idrico | Double |
| **VV** | Velocità del vento (m/s) | Double |
| **BAGN_LEAF** | Bagnatura fogliare (on/off) | Double |
| **BAT** | Livello della batteria | Double |
| **RAD GRAP** | Radiazione Grappolo | Double |
| **POT_IDR_30** | Potenziale Idrico a 30 cm (MPa) | Double |
| **POT_IDR_60** | Potenziale Idrico a 60 cm (MPa) | Double |

| TABELLA: METEO_MASTER | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_STAZ_METEO** | Codice identificativo della stazione meteo | text_8 |
| **DATA** | Data di campionamento | Date |

| | | |
|---|---|---|
| DATA_STR | Data di campionamento | text_8 |
| ORA | Ora di campionamento | Time |
| ORA_STR | Ora di campionamento | text_4 |
| TEMPMEDIA | Temperatura dell'aria (°C) media | Double |
| TMAX | Temperatura dell'aria (°C) massima | Double |
| TMIN | Temperatura dell'aria (°C) minima | Double |
| TDEVSTD | Temperatura dell'aria (°C) deviazione standard | Double |
| TULTIMO | Temperatura dell'aria (°C) ultimo valore registrato | Double |
| UMIDMEDIA | Umidità dell'aria (%) media | Double |
| URMAX | Umidità dell'aria (%) massima | Double |
| URMIN | Umidità dell'aria (%) minima | Double |
| URDEVSTD | Umidità dell'aria (%) deviszione standard | Double |
| URULTIMO | Umidità dell'aria (%) ultimo valore registrato | Double |
| PRESMEDIA | Pressione atmosferica (hPa) media | Double |
| PMAX | Pressione atmosferica (hPa) massima | Double |
| PMIN | Pressione atmosferica (hPa) minima | Double |
| PDEVSTD | Pressione atmosferica (hPa) deviszione standard | Double |
| PULTIMO | Pressione atmosferica (hPa) ultimo valore registrato | Double |
| RADGMEDIA | Radiazione solare globale (W/m2) media | Double |
| RMAX | Radiazione solare globale (W/m2) massima | Double |
| RMIN | Radiazione solare globale (W/m2) minima | Double |
| RDEVSTD | Radiazione solare globale (W/m2) deviszione standard | Double |
| RULTIMO | Radiazione solare globale (W/m2) ultimo valore registrato | Double |
| PIOGSOMMA | Precipitazioni (mm) somma nell'intervallo (5minuti) | Double |
| VVENT1VMED | Velocità del vento (m/s) media | Double |
| VDEVSTD | Velocità del vento (m/s) deviazione standard | Double |
| VRAF | Velocità del vento (m/s) massima o di raffica | Double |
| VMIN | Velocità del vento (m/s) minima | Double |
| VULTIMO | Velocità del vento (m/s) ultimo valore registrato | Double |
| DVENT1DPREV | Direzione del vento (°) prevalente | Double |
| DRAF | Direzione del vento (°) di raffica | Double |
| DULTIMO | Direzione del vento (°) ultimo valore registrato | Double |
| NUMCAMP | Numero di campionamenti fatti nell'intervallo considerato (5minuti) | Double |
| BATTERIA | Livello della batteria | Double |

**Descrizione della tabella contenente le informazioni fondamentali su: VINIFICAZIONI**

| TABELLA: VINIFICAZIONI | | |
|---|---|---|
| NOME COLONNA | CONTENUTO | FORMATO |
| ID_VIGNETO | Codice identificativo del vigneto | text_2 |
| ID_BLOCCO | Codice identificativo del blocco | text_3 |
| ID_PARCELLA | Codice identificativo della parcella | integer |
| ANNO_VENDEMMIA | Anno di vendemmia delle uve analizzate | integer |
| DATA | Data in cui è stata effettuata l'analisi | Date |

| | | |
|---|---|---|
| **ID_FASE_VINIFICAZIONI** | Fase in cui è stata effettuata l'analisi | text_2 |
| **ID_ANALISI_VINIFICAZIONI** | Codice identificativo del tipo di analisi | Integer |
| **CODICE_TUSCANIA** | ???????????????? | text_8 |
| **ZUCCHERI RIDUTTORI** | ???????????????(g/l) | Float |
| **ALCOOL_PROBABILE** | ???????????????? (%vol) | Float |
| **ALCOOL_COMPLESSIVO** | ???????????????? (%vol) | Float |
| **ALCOOL DA SVOLGERE** | ?????????????? (%vol) | Float |
| **ALCOOL** | ????????????????? (%vol) | Float |
| **ACIDITA_TOTALE** | Acidità totale( g/l) | Float |
| **ACIDITA_VOLATILE** | Acidita volatile(g/l) | Float |
| **ACIDO_MALICO** | Acido malico( g/l ) | Float |
| **ACIDO_LATTICO** | Acido L-lattico(g/l) | Float |
| **PH** | pH | Float |
| **APA** | Azoto prontamente assimilabile (mg/l) | Float |
| **ANTOCIANI_TOTALI** | Antociani totali(mg/l) | Float |
| **POLIFENOLI_TOTALI** | Polifenoli totali(mg/l) | Float |
| **INTENSITA_COLORANTE** | Intensità colorante | Float |
| **TONALITA_COLORANTE** | Tanalità colorante | Float |

## Categorie per la tabella: VINIFICAZIONI

| **TABELLA: ID_FASE_VINIFICAZIONI** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_FASE_VINIFICAZIONI** | Fase in cui è stata effettuata l'analisi | text_2 |
| **DESCRIZIONE** | Campo descrittivo | text_100 |

| **TABELLA: ID_ANALISI_VINIFICAZIONI** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO** | **FORMATO** |
| **ID_ANALISI_VINIFICAZIONI** | Codice identificativo del tipo di analisi | Integer |
| **DESCRIZIONE** | Campo descrittivo | text_100 |

# Allegato 3.3 – SPECIFICHE TECNICHE DEL GEODATABASE TUSCANIA ( LINEA ENOLOGICA)

# ALLEGATO 3.3

# SPECIFICHE TECNICHE GEODB

Linea enologica (B1.1, B1.2, B4)

Consiglio Nazionale delle Ricerche
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## STRUTTURA DEI DATABASE ENOLOGICI

I dati riguardanti le linee enologiche del Progetto di Ricerca del Consorzio Tuscania sono stati raccolti in tre database (DB) relazionali. Ogni database ha una struttura ad hoc per raccogliere i dati di una singola linea di ricerca, di cui riprende anche il nome (B1.1, B1.2, B4).

Ogni tabella del GeoDb è caratterizzata dall'avere una chiave primaria, cioè un campo o un insieme di campi che permette di identificare in maniera univoca un record nella tabella. In altre parole, nessun record nella tabella può avere il campo o un insieme di campi identificato dalla chiave primaria identico a quello di un qualsiasi altro record della stessa (vincolo di unicità). La chiave primaria per sua stessa natura non può contenere campi nulli o duplicati e può essere ad un campo o multicampo. La chiave primaria ad un campo è quella che è definita da un solo campo della tabella, ad esempio il campo ***asm*** della tabella ***b11_asm_legenda***. Altro esempio sono i campi contatore come ***id_b11_analisi_chimiche*** nella tabella ***b11_analisi_chimiche***. Il campo contatore è un campo particolare che si aggiorna automaticamente in maniera sequenziale ogni qualvolta alla tabella viene aggiunto un record. In tal modo si può essere certi della univocità dei valori nel campo. La chiave primaria multicampo è quella che viene identificata da più campi. Ad esempio nella tabella ***b11_campioni*** abbiamo la chiave primaria composta da (***vasca, data, fase, anno_vendemmia***).

Al fine di evitare ridondanze e risparmiare spazio sul GeoDB si è fatto uso delle cosiddette "categorie". Le "categorie" sono tabelle che rappresentano sottotipi di una tabella padre. Ad esempio nella tabella ***b12_vasca_tesi*** la colonna ***raccolta_cernita*** contiene l'informazione relativa alla tipo di raccolta/cernita usata per le uve di ogni vasca. Invece di scrivere la completa descrizione del tipo di raccolta effettuata, si è adottato un codice che la identifica. Nella tabella ***b12_tesi_vinif_legenda***, collegata alla tabella ***b12_vasca_tesi*** attraverso il campo ***raccolta_cernita***, è presente la estrinsecazione di tale codice attraverso il campo descrittivo correlato.

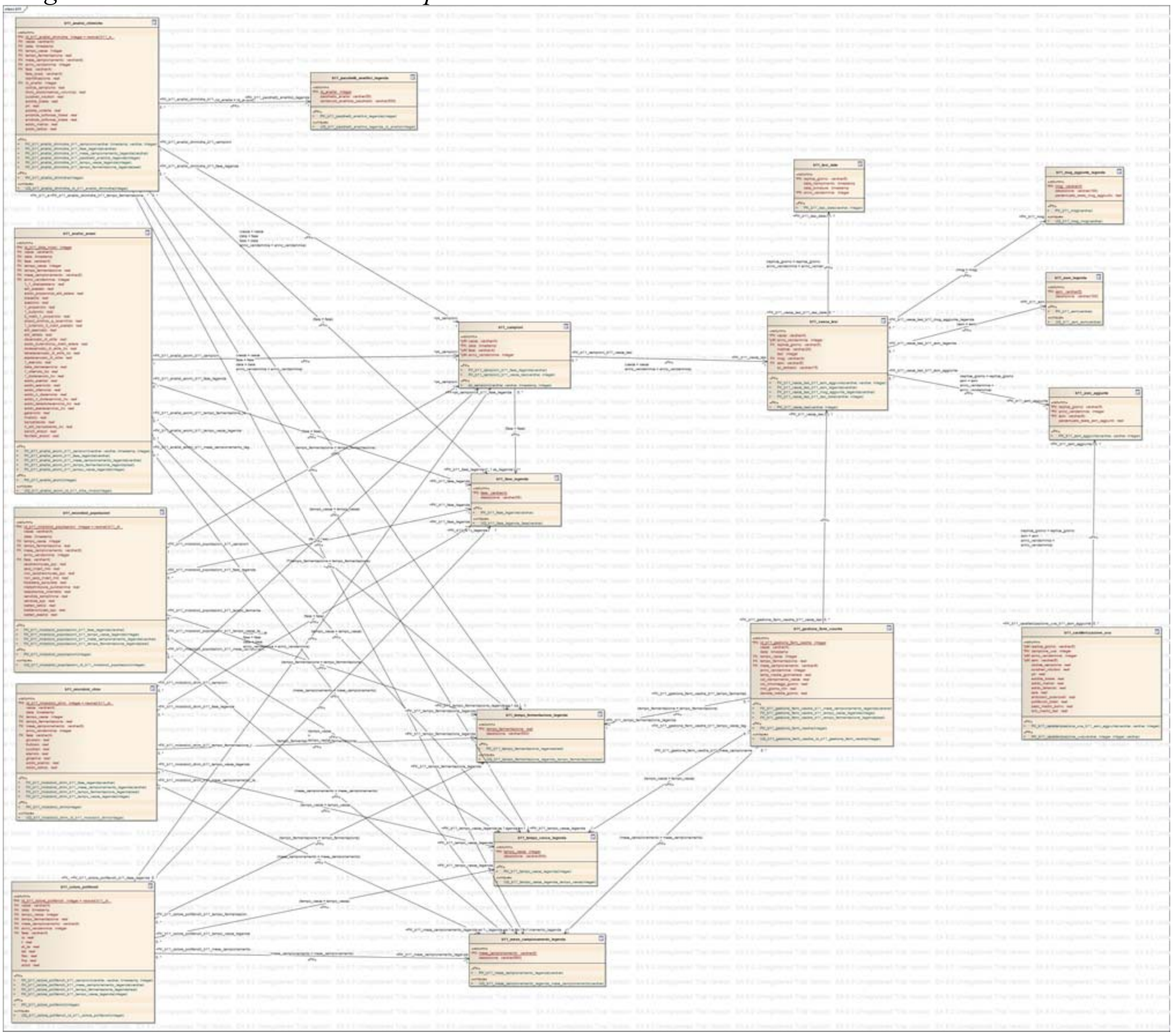
Le strutture dei tre DB sono molto simili tra loro, tali che il linguaggio delle QUERY necessario per estrarre i dati prevede solo delle piccole variazioni per essere usato sull'uno o sull'altro DB. Le tabelle hanno come prefisso una sigla che identifica il DB di cui fanno parte; ad esempio la tabella ***b11_campioni*** contiene i dati dei campioni del DB B11. Le strutture dei tre DB sono state studiate affinché sia possibile rintracciare ogni informazione ritenuta necessaria relativa ad un parametro attraverso le relazioni che legano i vari elementi. Al momento i dati contenuti nei tre DB possono essere raggruppabili in quattro aree di pertinenza:

- **Le analisi svolte dai vari Partner di Progetto su uve, mosti e vini.** Le tabelle **xxx_campioni**, presenti in tutti e tre i DB, presentano un elenco di tutti i campioni analizzati dai vari Partner di Progetto. I campioni vengono identificati univocamente tramite l'utilizzo di una chiave primaria multicampo (***vasca, data, fase, anno_vendemmia***). Collegate ad esse tramite i campi che identificano i campioni, le tabelle ***xxx_analisi_chimiche***, ***xxx_analisi_aromi***, ***xxx_microbiol_popolazioni***, ***xxx_microbiol_chim***, ***xxx_colore_polifenoli*** contengono i risultati delle analisi svolte dai singoli Partner di Progetto.
- **Dati relativi alle vasche.** Nelle tabelle ***xxx_vasca*** sono censite le vasche con le necessarie informazioni associate per ogni linea di ricerca; esse sono identificate univocamente attraverso la chiave primaria multicampo costituita da ***vasca*** e ***anno_vendemmia***. Il campo ***anno_vendemmia*** è stato implementato in quanto per motivi tecnici di cantina è necessario ogni anno cambiare il tipo di tesi associato alla singola vasca. Nelle tabelle ***xxx_gestione_ferm_vasche*** sono presenti parametri tecnici quali temperatura, densità dei mosti… relativi alle singole vasche e necessari per analisi statistiche.
- **Informazioni sulle tesi.** Le tre linee di ricerca sono caratterizzate da un rigido disegno sperimentale che lega univocamente, per ciascun anno, ogni vasca ad una determinata tesi sperimentale. Peri tre DB si può quindi ricavare la tesi sperimentale di ogni vasca e indirettamente, tramite il disegno relazionale di ciascun DB, per ogni campione analizzato.
- **Informazioni relative a replica-giorno**. In base al disegno sperimentale delle tre linee di ricerca, ogni tesi viene replicata tre volte effettuando il riempimento delle vasche con uve raccolte in tre giorni diversi, le cosiddette ***replica_giorno***. Visto che le caratteristiche di tali uve influiscono sulle successive analisi, analisi relative ai grappoli raccolti sono state incorporati nei tre DB; esse sono contenute nelle tabelle ***b11_asm_caratterizzazione_***uva, ***b12_analisi_uva***, ***b4_analisi_uva***.

Per una maggiore comprensione della struttura dei tre DB e delle relazioni esistenti fra le varie tabelle rimandiamo alla consultazione dei singoli diagrammi. Inoltre si riportano di seguito in dettaglio i contenuti e le specifiche tecniche delle tabelle incluse nei singoli DB.

# STRUTTURA TABELLE LINEA B1.1

*Diagramma del DB contenente i dati per la linea di ricerca B1.1*



| TABELLA: b11_analisi_chimiche | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b11_analisi_chimiche** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno (0) di messa in vasca | Number |
| **tempo_fermentazione** | Fase di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |

| | | |
|---|---|---|
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **fase_isvea** | Identificativo del campione generato dal laboratorio di analisi | Text_4 |
| **identificazione** | Identificativo del campione generato al momento dell'invio del campione al laboratorio di analisi | Number |
| **id_analisi** | Gruppo tipologico di analisi chimiche | Number |
| **codice_campione** | Identificativo del campione generato dal laboratorio di analisi al ricevimento del campione | Number |
| **titolo_alcolometrico_volumico** | Titolo Alcolometrico Volumico (% vol.) | Number |
| **zuccheri_riduttori** | Zuccheri Riduttori (g/L) | Number |
| **acidita_totale** | Acidità Totale (g/L acido tartarico) | Number |
| **pH** | pH | Number |
| **acidita_volatile** | Acidità Volatile (g/L acido acetico) | Number |
| **anidride_solforosa_libera** | Anidride solforosa libera (mg/L) | Number |
| **anidride_solforosa_totale** | Anidride solforosa totale (mg/L) | Number |
| **acido_malico** | Acido malico (g/L) | Number |
| **acido_lattico** | Acido lattico (g/L) | Number |

| **TABELLA: b11_analisi_aromi** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b11_analisi_aromi** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **1_1_dietossietano** | 1_1_dietossietano (ppm) | Number |
| **etil_acetato** | Etil_acetato (ppm) | Number |
| **acido_propanoico_etil_estere** | Acido_propanoico_etil_estere (ppm) | Number |
| **diacetile** | Diacetile (ppm) | Number |
| **acetoino** | Acetoino (ppm) | Number |
| **1_propanolo** | 1_propanolo (ppm) | Number |
| **1_butanolo** | 1_butanolo (ppm) | Number |
| **2_metil_1_propanolo** | 2_metil_1_propanolo (ppm) | Number |
| **alcool_amilico_e_isoamilico** | Alcool_amilico_e_isoamilico (ppm) | Number |
| **1_butanolo_3_metil_acetato** | 1_butanolo_3_metil_acetato (ppm) | Number |
| **etil_esanoato** | Etil_esanoato (ppm) | Number |
| **etil_lattato** | Etil_lattato (ppm) | Number |
| **decanoato_di_etile** | Decanoato_di_etile (ppm) | Number |
| **acido_butandioico_dietil_estere** | Acido_butandioico_dietil_estere (ppm) | Number |
| **esadecanoato_di_etile** | Esadecanoato_di_etile (ppm) | Number |
| **1_esanolo** | 1_esanolo (ppm) | Number |
| **beta_damascenone** | Beta_damascenone (ppm) | Number |

| | | |
|---|---|---|
| **acido_acetico** | Acido_acetico (ppm) | Number |
| **acido_esanoico** | Acido_esanoico (ppm) | Number |
| **acido_ottanoico** | Acido_ottanoico (ppm) | Number |
| **acido_n_decanoico** | Acido_n_decanoico (ppm) | Number |
| **geraniolo** | Geraniolo (ppm) | Number |
| **linalolo** | Linalolo (ppm) | Number |
| **benzaldeide** | Benzaldeide (ppm) | Number |
| **benzil_alcool** | Benzil_alcool (ppm) | Number |
| **feniletil_alcool** | Feniletil_alcool (ppm) | Number |

| **TABELLA: b11_microbiol_popolazioni** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b11_microbiol_popolazioni** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi. | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **saccharomyces_spp** | Popolazione di lieviti spp. Saccharomyces (UFC/ml) | Number |
| **sacc_incert_mis** | Incertezza di misura di spp. Saccharomyces (+/-) | Number |
| **non_saccharomyces_spp** | Popolazione di lieviti spp. NON Saccharomyces (UFC/ml) | Number |
| **non_sacc_incert_mis** | Incertezza di misura di spp. NON Saccharomyces (+/-) | Number |
| **klockera_apiculata** | Popolazione di Klockera apiculata (UFC/ml) | Number |
| **metschnikowia_pulcherrima** | Popolazione di Metschnikowia pulcherrima (UFC/mL) | Number |
| **issatchenkia_orientalis** | Popolazione di Issatchenkia orientalis (UFC/mL) | Number |
| **candida zemplinina** | Popolazione di Candida zemplinina (UFC/mL) | Number |
| **candida_spp** | Popolazione di lieviti spp. Candida (UFC/ml) | Number |
| **batteri_lattici** | Popolazione di Batteri lattici (UFC/mL) | Number |
| **brettanomyces spp.** | Popolazione di spp. Brettanomyces (UFC/mL) | Number |
| **batteri_acetici** | Popolazione di Batteri acetici (UFC/mL) | Number |

| **TABELLA: b11_microbiol_chim** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b11_microbiol_chim** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |

| | | |
|---|---|---|
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **glucosio** | Glucosio residuo (g/L) | Number |
| **fruttosio** | Fruttosio residuo (g/L) | Number |
| **zuccheri** | Zuccheri residui (g;L) | Number |
| **etanolo** | Etanolo (%v/v) | Number |
| **glicerina** | Glicerolo (g/L) | Number |
| **acido_acetico** | Acido lattico (g/L) | Number |
| **acido_lattico** | Acido lattico (g/L) | Number |

| **TABELLA: b11_colore_polifenoli** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b11_colore_polifenoli** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **ic** | Intensità colorante (a.u.) | Number |
| **t** | Tonalità | Number |
| **al_ta** | Antociani liberi più complessi tannino-antociano (a.u.) | Number |
| **tat** | Complessi tannino-antociano-tannino (a.u.) | Number |
| **flav** | Flavonoidi; (mg/l) | Number |
| **fna** | Flavonoidi non antocianici (mg/l) | Number |
| **antot** | Antociani totali (mg/l) | Number |

| **TABELLA: b11_campioni** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |

| **TABELLA: b11_pacchetti_analitici_legenda** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_analisi** | Gruppo tipologico di analisi chimiche | Number |
| **pacchetto_analisi** | Pacchetto analitico richiesto per il campione in analisi | Text_50 |
| **contenuto_analitico_legenda** | Campo descrittivo | Text_500 |

| TABELLA: b11_fase_legenda | | |
|---|---|---|
| NOME COLONNA | CONTENUTO COLONNA | FORMATO |
| fase | Fase in cui viene effettuata l'analisi | Text_4 |
| descrizione | Campo descrittivo | Text_50 |

| TABELLA: b11_tempo_fermentazione_legenda | | |
|---|---|---|
| NOME COLONNA | CONTENUTO COLONNA | FORMATO |
| tempo_fermentazione | Fase di fermentazione | Number |
| descrizione | Campo descrittivo | Text_50 |

| TABELLA: b11_tempo_vasca_legenda | | |
|---|---|---|
| NOME COLONNA | CONTENUTO COLONNA | FORMATO |
| tempo_vasca | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno (0) di messa in vasca | Number |
| descrizione | Campo descrittivo | Text_50 |

| TABELLA: b11_mese_campionamento_legenda | | |
|---|---|---|
| NOME COLONNA | CONTENUTO COLONNA | FORMATO |
| mese_campionamento | Mese del campionamento e delle relative analisi | Number |
| descrizione | Campo descrittivo | Text_50 |

| TABELLA: b11_tesi_date | | |
|---|---|---|
| NOME COLONNA | CONTENUTO COLONNA | FORMATO |
| replica_giorno | Replica giorno | Text_5 |
| anno_vendemmia | Anno di vendemmia/sperimentazione | Number |
| data_riempimento | Data in cui la vasca è stata riempita | Data |
| data_svinatura | Data in cui è stata effettuata la svinatura della vasca | Data |

| TABELLA: b11_vasca_tesi | | |
|---|---|---|
| NOME COLONNA | CONTENUTO COLONNA | FORMATO |
| vasca | Vasca da cui viene estratto il campione | Text_4 |
| anno_vendemmia | Anno di vendemmia/sperimentazione | Number |
| replica_giorno | Replica giorno | Text_5 |
| matrice | Matrice | Text_20 |
| tesi | Codice identificativo della tesi | Number |
| mog | Material Other than Grapes (%) | Text_4 |
| asm | Acini a Scarsa maturazione (%) | Text_6 |
| ex_serbatoi | Campo utile solo per i pressati, in quanto indica da quali serbatoi provenivano | Text_5 |

| TABELLA: b11_gestione_ferm_vasche | | |
|---|---|---|
| NOME COLONNA | CONTENUTO COLONNA | FORMATO |
| id_b11_parsec | Campo contatore | Number |
| vasca | Vasca da cui viene estratto il campione | Text_4 |
| data | Data a cui si riferiscono i parametri della vasca | Date |
| tempo_vasca | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| tempo_fermentazione | Tempo di fermentazione | Number |
| mese_campionamento | Mese del campionamento e delle relative analisi | Number |
| anno_vendemmia | Anno di vendemmia/sperimentazione | Number |
| temp_media_giornaliera | Temperatura media giornaliera (°C) | Number |
| vol_riempimento_vasca | Livello di riempimento della vasca all'ammostamento (Kg) | Number |
| vol_rimontaggi_giorno | Volume giornaliero di mosto rimontato dalla pompa (l) | Number |
| min_rimontaggi_giorno | Somma giornaliera dei minuti di rimontaggio del mosto | Number |
| densita_media_giorno | Densità media calcolata sui valori misurati al mattino e alla sera ($kg/m^3$) | Number |

| TABELLA: b11_mog_aggiunte_legenda | | |
|---|---|---|
| NOME COLONNA | CONTENUTO COLONNA | FORMATO |
| mog | Material Other than Grapes (%) | Text_4 |
| descrizione | Campo descrittivo | Text_100 |
| percentuale_reale_mog_aggiunto | Percentuale effettiva di uva mog aggiunto nelle tesi | Number |

| TABELLA: b11_asm_legenda | | |
|---|---|---|
| NOME COLONNA | CONTENUTO COLONNA | FORMATO |
| asm | Acini a Scarsa maturazione (%) | Text_6 |
| descrizione | Campo descrittivo | Text_100 |

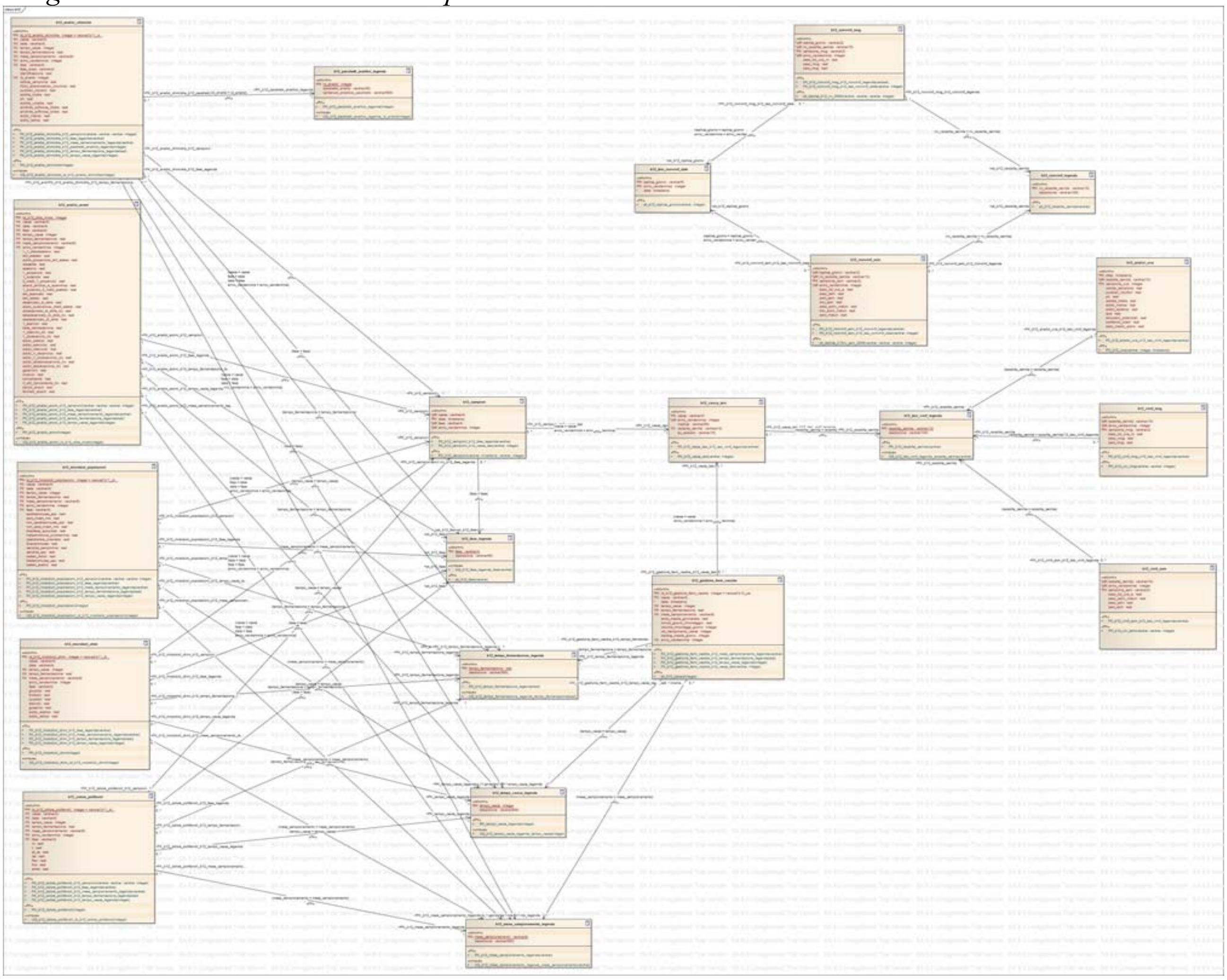
| TABELLA: b11_asm_aggiunte | | |
|---|---|---|
| NOME COLONNA | CONTENUTO COLONNA | FORMATO |
| replica_giorno | Replica giorno | Text_5 |
| anno_vendemmia | Anno di vendemmia/sperimentazione | Number |
| asm | Acini a Scarsa maturazione (%) | Text_6 |
| percentuale_reale_asm_aggiunti | Percentuale effettiva di uva asm aggiunta nelle tesi | Text_100 |

| TABELLA: b11_caratterizzazione_uva | | |
|---|---|---|
| NOME COLONNA | CONTENUTO COLONNA | FORMATO |
| replica_giorno | Replica giorno | Text_5 |
| campione_uva | Identificativo del campione | Number |
| anno_vendemmia | Anno di vendemmia/sperimentazione | Number |
| asm | Acini a Scarsa maturazione (%) | Text_6 |
| zuccheri_riduttori | Zuccheri Riduttori (g/L) | Number |
| pH | pH | Number |

| | | |
|---|---|---|
| **acidita_totale** | Acidità Totale (g/L acido tartarico) | Number |
| **acido_malico** | Acido malico (g/L) | Number |
| **acido_tartarico** | Acido tartarico (g/L) | Number |
| **apa** | Azoto prontamente assimilabile (mg/L) | Number |
| **antociani_potenziali** | Antociani potenziali – pH 1,0 (mg/Kg) | Number |
| **polifenoli_totali** | Polifenoli totali – pH 1,00 (mg/Kg ac.gallico) | Number |
| **peso_medio_acino** | Peso medio acino (g) | Number |
| **brix_medio_tesi** | Grado brix medio delle relative tesi asm (°Brix) | Number |

## STRUTTURA TABELLE LINEA B1.2

*Diagramma del DB contenente i dati per la linea di ricerca B1.2*



| TABELLA: b12_analisi_chimiche | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b12_analisi_chimiche** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno (0) di messa in vasca | Number |
| **tempo_fermentazione** | Fase di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |

| | | |
|---|---|---|
| **fase_isvea** | Identificativo del campione generato dal laboratorio di analisi | Text_4 |
| **identificazione** | Identificativo del campione generato al momento dell'invio del campione al laboratorio di analisi | Number |
| **id_analisi** | Gruppo tipologico di analisi chimiche | Number |
| **codice_campione** | Identificativo del campione generato dal laboratorio di analisi al ricevimento del campione | Number |
| **titolo_alcolometrico_volumico** | Titolo Alcolometrico Volumico (% vol.) | Number |
| **zuccheri_riduttori** | Zuccheri Riduttori (g/L) | Number |
| **acidita_totale** | Acidità Totale (g/L acido tartarico) | Number |
| **pH** | pH | Number |
| **acidita_volatile** | Acidità Volatile (g/L acido acetico) | Number |
| **anidride_solforosa_libera** | Anidride solforosa libera (mg/L) | Number |
| **anidride_solforosa_totale** | Anidride solforosa totale (mg/L) | Number |
| **acido_malico** | Acido malico (g/L) | Number |
| **acido_lattico** | Acido lattico (g/L) | Number |

| **TABELLA: b12_analisi_aromi** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b12_analisi_aromi** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **1_1_dietossietano** | 1_1_dietossietano (ppm) | Number |
| **etil_acetato** | Etil_acetato (ppm) | Number |
| **acido_propanoico_etil_estere** | Acido_propanoico_etil_estere (ppm) | Number |
| **diacetile** | Diacetile (ppm) | Number |
| **acetoino** | Acetoino (ppm) | Number |
| **1_propanolo** | 1_propanolo (ppm) | Number |
| **1_butanolo** | 1_butanolo (ppm) | Number |
| **2_metil_1_propanolo** | 2_metil_1_propanolo (ppm) | Number |
| **alcool_amilico_e_isoamilico** | Alcool_amilico_e_isoamilico (ppm) | Number |
| **1_butanolo_3_metil_acetato** | 1_butanolo_3_metil_acetato (ppm) | Number |
| **etil_esanoato** | Etil_esanoato (ppm) | Number |
| **etil_lattato** | Etil_lattato (ppm) | Number |
| **decanoato_di_etile** | Decanoato_di_etile (ppm) | Number |
| **acido_butandioico_dietil_estere** | Acido_butandioico_dietil_estere (ppm) | Number |
| **esadecanoato_di_etile** | Esadecanoato_di_etile (ppm) | Number |
| **1_esanolo** | 1_esanolo (ppm) | Number |
| **beta_damascenone** | Beta_damascenone (ppm) | Number |
| **acido_acetico** | Acido_acetico (ppm) | Number |
| **acido_esanoico** | Acido_esanoico (ppm) | Number |

| | | |
|---|---|---|
| **acido_ottanoico** | Acido_ottanoico (ppm) | Number |
| **acido_n_decanoico** | Acido_n_decanoico (ppm) | Number |
| **geraniolo** | Geraniolo (ppm) | Number |
| **linalolo** | Linalolo (ppm) | Number |
| **benzaldeide** | Benzaldeide (ppm) | Number |
| **benzil_alcool** | Benzil_alcool (ppm) | Number |
| **feniletil_alcool** | Feniletil_alcool (ppm) | Number |

| **TABELLA: b12_microbiol_popolazioni** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b12_microbiol_popolazioni** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi. | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **saccharomyces_spp** | Popolazione di lieviti spp. Saccharomyces (UFC/ml) | Number |
| **sacc_incert_mis** | Incertezza di misura di spp. Saccharomyces (+/-) | Number |
| **non_saccharomyces_spp** | Popolazione di lieviti spp. NON Saccharomyces (UFC/ml) | Number |
| **non_sacc_incert_mis** | Incertezza di misura di spp. NON Saccharomyces (+/-) | Number |
| **klockera_apiculata** | Popolazione di Klockera apiculata (UFC/ml) | Number |
| **metschnikowia_pulcherrima** | Popolazione di Metschnikowia pulcherrima (UFC/mL) | Number |
| **issatchenkia_orientalis** | Popolazione di Issatchenkia orientalis (UFC/mL) | Number |
| **candida zemplinina** | Popolazione di Candida zemplinina (UFC/mL) | Number |
| **candida_spp** | Popolazione di lieviti spp. Candida (UFC/ml) | Number |
| **batteri_lattici** | Popolazione di Batteri lattici (UFC/mL) | Number |
| **brettanomyces spp.** | Popolazione di spp. Brettanomyces (UFC/mL) | Number |
| **batteri_acetici** | Popolazione di Batteri acetici (UFC/mL) | Number |

| **TABELLA: b12_microbiol_chim** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b12_microbiol_chim** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **glucosio** | Glucosio residuo (g/L) | Number |
| **fruttosio** | Fruttosio residuo (g/L) | Number |

| | | |
|---|---|---|
| **zuccheri** | Zuccheri residui (g;L) | Number |
| **etanolo** | Etanolo (%v/v) | Number |
| **glicerina** | Glicerolo (g/L) | Number |
| **acido_acetico** | Acido lattico (g/L) | Number |
| **acido_lattico** | Acido lattico (g/L) | Number |

| **TABELLA: b12_colore_polifenoli** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b12_colore_polifenoli** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **ic** | Intensità colorante (a.u.) | Number |
| **t** | Tonalità | Number |
| **al_ta** | Antociani liberi più complessi tannino-antociano (a.u.) | Number |
| **tat** | Complessi tannino-antociano-tannino (a.u.) | Number |
| **flav** | Flavonoidi; (mg/l) | Number |
| **fna** | Flavonoidi non antocianici (mg/l) | Number |
| **antot** | Antociani totali (mg/l) | Number |

| **TABELLA: b12_campioni** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |

| **TABELLA: b12_pacchetti_analitici_legenda** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_analisi** | Gruppo tipologico di analisi chimiche | Number |
| **pacchetto_analisi** | Pacchetto analitico richiesto per il campione in analisi | Text_50 |
| **contenuto_analitico_legenda** | Campo descrittivo | Text_500 |

| **TABELLA: b12_fase_legenda** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **fase** | Fase in cui viene effettuata l’analisi | Text_4 |
| **descrizione** | Campo descrittivo | Text_50 |

| TABELLA: b12_tempo_fermentazione_legenda | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **tempo_fermentazione** | Fase di fermentazione | Number |
| **Descrizione** | Campo descrittivo | Text_50 |

| TABELLA: b12_tempo_vasca_legenda | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno (0) di messa in vasca | Number |
| **descrizione** | Campo descrittivo | Text_50 |

| TABELLA: b12_mese_campionamento_legenda | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **Descrizione** | Campo descrittivo | Text_50 |

| TABELLA: b12_vasca_tesi | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **anno_vendemmia** | Anno di vendemmia/sperimentazione | Number |
| **matrice** | Matrice | Text_20 |
| **raccolta_cernita** | Tipo di raccolta/cernita | Text_10 |
| **ex_serbatoi** | Campo utile solo per i pressati, in quanto indica da quali serbatoi provenivano | Text_5 |

| TABELLA: b12_gestione_ferm_vasche | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b12_parsec** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data a cui si riferiscono i parametri della vasca | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia/sperimentazione | Number |
| **temp_media_giornaliera** | Temperatura media giornaliera (°C) | Number |
| **minuti_giorno_rimonaggio** | somma giornaliera dei minuti di rimontaggio del mosto | Number |
| **volume_rimontaggi_giorno** | volume giornaliero di mosto rimontato dalla pompa (l) | Number |
| **vol_riempimento_vasca** | livello di riempimento della vasca all'ammostamento (Kg) | Number |
| **densita_media_giorno** | densità media calcolata sui valori misurati al mattino e alla sera ($kg/m^3$) | Number |

| TABELLA: b12_tesi_vinif_legenda | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **raccolta_cernita** | Tipo di raccolta/cernita | Text_10 |
| **Descrizione** | Campo descrittivo | Text_250 |

| TABELLA: b12_analisi_uva | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **raccolta_cernita** | Tipo di raccolta/cernita | Text_10 |
| **campione_uva** | Identificativo del campione | Number |
| **codice_campione** | Identificativo del campione generato dal laboratorio di analisi al ricevimento del campione | Number |
| **zuccheri_riduttori** | Zuccheri Riduttori (g/L) | Number |
| **pH** | pH | Number |
| **acidita_totale** | Acidità Totale (g/L acido tartarico) | Number |
| **acido_malico** | Acido malico (g/L) | Number |
| **acido_tartarico** | Acido tartarico (g/L) | Number |
| **apa** | Azoto prontamente assimilabile (mg/L) | Number |
| **antociani_potenziali** | Antociani potenziali – pH 1,0 (mg/Kg) | Number |
| **polifenoli_totali** | Polifenoli totali – pH 1,00 (mg/Kg ac.gallico) | Number |
| **peso_medio_acino** | Peso medio acino (g) | Number |

| TABELLA: b12_vinif_mog | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **raccolta_cernita** | Tipo di raccolta/cernita | Text_10 |
| **anno_vendemmia** | Anno di vendemmia/sperimentazione | Number |
| **campione_mog** | Codice identificativo del campione | Text_2 |
| **peso_tot_uva_m** | Peso totale del campione (Kg) | Number |
| **peso_mog** | Peso del Material Other than Grapes (MOG) (Kg) | Number |
| **perc_mog** | Percentuale di Material Other than Grapes (MOG) (%) | Number |

| TABELLA: b12_vinif_asm | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **raccolta_cernita** | Tipo di raccolta/cernita | Text_10 |
| **anno_vendemmia** | Anno di vendemmia/sperimentazione | Number |
| **campione_mog** | Codice identificativo del campione | Text_2 |
| **peso_tot_uva_a** | Peso totale del campione (Kg) | Number |
| **peso_acini_maturi** | Peso degli acini maturi (Kg) | Number |
| **peso_asm** | Peso degli Acini a Scarsa maturazione (ASM) (Kg) | Number |
| **perc_asm** | Percentuale di Acini a Scarsa maturazione (ASM) (%) | Number |

| TABELLA: b12_nonvinif_mog | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **replica_giorno** | Replica giorno | Text_2 |
| **nv_raccolta_cernita** | Tipo di raccolta/cernita | Text_10 |
| **anno_vendemmia** | Anno di vendemmia/sperimentazione | Number |
| **campione_mog** | Codice identificativo del campione | Text_2 |
| **peso_tot_uva_m** | Peso totale del campione (Kg) | Number |
| **peso_mog** | Peso del Material Other than Grapes (MOG) (Kg) | Number |
| **perc_mog** | Percentuale di Material Other than Grapes (MOG) (%) | Number |

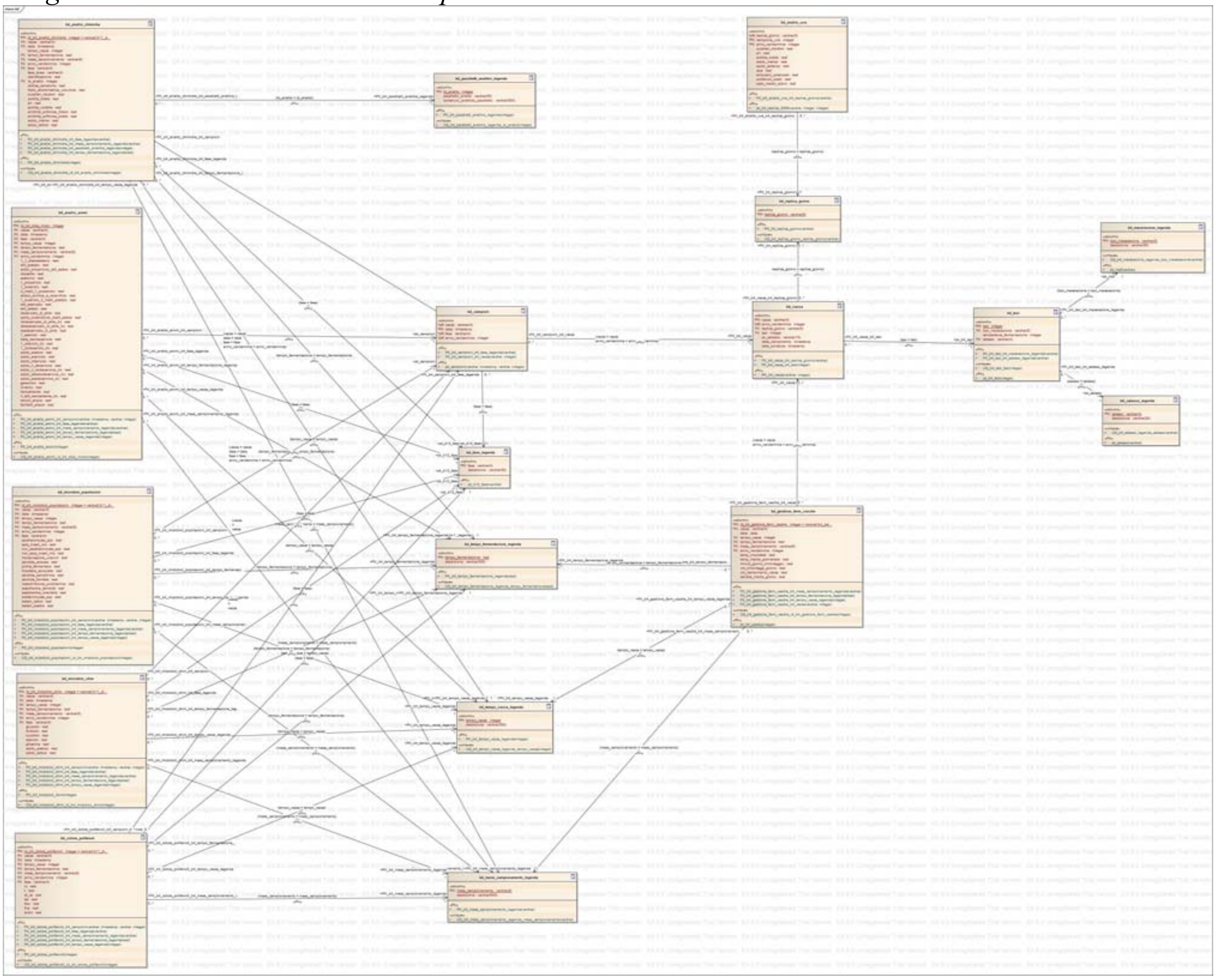
| TABELLA: b12_tesi_nonvinif_date | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **replica_giorno** | Replica giorno | Text_2 |
| **anno_vendemmia** | Anno di vendemmia/sperimentazione | Number |
| **Data** | Data in cui viene effettuato il prelievo per la tesi non vinificata | Date |

| TABELLA: b12_nonvinif_legenda | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **nv_raccolta_cernita** | Tipo di raccolta/cernita | Text_10 |
| **Descrizione** | Campo descrittivo | Text_250 |

| TABELLA: b12_nonvinif_asm | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **replica_giorno** | Replica giorno | Text_2 |
| **nv_raccolta_cernita** | Tipo di raccolta/cernita | Text_10 |
| **campione_asm** | Codice identificativo del campione | Text_2 |
| **anno_vendemmia** | Anno di vendemmia/sperimentazione | Number |
| **peso_tot_uva_a** | Peso totale del campione (Kg) | Number |
| **peso_asm** | Peso degli Acini a Scarsa maturazione (ASM) (Kg) | Number |
| **perc_ASM** | Percentuale di Acini a Scarsa maturazione (ASM) (%) | Number |
| **brix_ASM** | Gradi brix degli Acini a Scarsa maturazione (ASM) (°) | Number |
| **peso_acini_maturi** | Peso degli acini maturi (Kg) | Number |
| **brix_acini_maturi** | Gradi brix degli acini maturi (°) | Number |
| **perc_maturi** | percentuale di acini maturi (brix > 21.5) sulle uve campionate (%) | Number |

# STRUTTURA TABELLE LINEA B4

*Diagramma del DB contenente i dati per la linea di ricerca B4*



| TABELLA: b4_analisi_chimiche | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b4_analisi_chimiche** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno (0) di messa in vasca | Number |
| **tempo_fermentazione** | Fase di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **fase_isvea** | Identificativo del campione generato dal laboratorio di analisi | Text_4 |

| | | |
|---|---|---|
| **identificazione** | Identificativo del campione generato al momento dell'invio del campione al laboratorio di analisi | Number |
| **id_analisi** | Gruppo tipologico di analisi chimiche | Number |
| **codice_campione** | Identificativo del campione generato dal laboratorio di analisi al ricevimento del campione | Number |
| **titolo_alcolometrico_volumico** | Titolo Alcolometrico Volumico (% vol.) | Number |
| **zuccheri_riduttori** | Zuccheri Riduttori (g/L) | Number |
| **acidita_totale** | Acidità Totale (g/L acido tartarico) | Number |
| **pH** | pH | Number |
| **acidita_volatile** | Acidità Volatile (g/L acido acetico) | Number |
| **anidride_solforosa_libera** | Anidride solforosa libera (mg/L) | Number |
| **anidride_solforosa_totale** | Anidride solforosa totale (mg/L) | Number |
| **acido_malico** | Acido malico (g/L) | Number |
| **acido_lattico** | Acido lattico (g/L) | Number |

| **TABELLA: b4_analisi_aromi** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b4_analisi_aromi** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **1_1_dietossietano** | 1_1_dietossietano (ppm) | Number |
| **etil_acetato** | Etil_acetato (ppm) | Number |
| **acido_propanoico_etil_estere** | Acido_propanoico_etil_estere (ppm) | Number |
| **diacetile** | Diacetile (ppm) | Number |
| **acetoino** | Acetoino (ppm) | Number |
| **1_propanolo** | 1_propanolo (ppm) | Number |
| **1_butanolo** | 1_butanolo (ppm) | Number |
| **2_metil_1_propanolo** | 2_metil_1_propanolo (ppm) | Number |
| **alcool_amilico_e_isoamilico** | Alcool_amilico_e_isoamilico (ppm) | Number |
| **1_butanolo_3_metil_acetato** | 1_butanolo_3_metil_acetato (ppm) | Number |
| **etil_esanoato** | Etil_esanoato (ppm) | Number |
| **etil_lattato** | Etil_lattato (ppm) | Number |
| **decanoato_di_etile** | Decanoato_di_etile (ppm) | Number |
| **acido_butandioico_dietil_estere** | Acido_butandioico_dietil_estere (ppm) | Number |
| **esadecanoato_di_etile** | Esadecanoato_di_etile (ppm) | Number |
| **1_esanolo** | 1_esanolo (ppm) | Number |
| **beta_damascenone** | Beta_damascenone (ppm) | Number |
| **acido_acetico** | Acido_acetico (ppm) | Number |
| **acido_esanoico** | Acido_esanoico (ppm) | Number |
| **acido_ottanoico** | Acido_ottanoico (ppm) | Number |

| | | |
|---|---|---|
| **acido_n_decanoico** | Acido_n_decanoico (ppm) | Number |
| **geraniolo** | Geraniolo (ppm) | Number |
| **linalolo** | Linalolo (ppm) | Number |
| **benzaldeide** | Benzaldeide (ppm) | Number |
| **benzil_alcool** | Benzil_alcool (ppm) | Number |
| **feniletil_alcool** | Feniletil_alcool (ppm) | Number |

| **TABELLA: b4_microbiol_popolazioni** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b4_microbiol_popolazioni** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi. | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **saccharomyces_spp** | Popolazione di lieviti spp. Saccharomyces (UFC/ml) | Number |
| **sacc_incert_mis** | Incertezza di misura di spp. Saccharomyces (+/-) | Number |
| **non_saccharomyces_spp** | Popolazione di lieviti spp. NON Saccharomyces (UFC/ml) | Number |
| **non_sacc_incert_mis** | Incertezza di misura di spp. NON Saccharomyces (+/-) | Number |
| **hanseniasporum_uvarum** | Popolazione di Hanseniasporum Uvarum (UFC/ml) | Number |
| **candida_sorbosa** | Popolazione di Candida Sorbosa (UFC/ml) | Number |
| **pichia_fermentans** | Popolazione di Pichia Fermentans (UFC/ml) | Number |
| **klockera_apiculata** | Popolazione di Klockera apiculata (UFC/ml) | Number |
| **metschnikowia_pulcherrima** | Popolazione di Metschnikowia pulcherrima (UFC/mL) | Number |
| **issatchenkia_terricola** | Popolazione di Issatchenkia terricola (UFC/mL) | Number |
| **issatchenkia_orientalis** | Popolazione di Issatchenkia orientalis (UFC/mL) | Number |
| **candida_zemplinina** | Popolazione di Candida Zemplinina (UFC/mL) | Number |
| **candida_formata** | Popolazione di Candida Formata (UFC/mL) | Number |
| **batteri_lattici** | Popolazione di Batteri lattici (UFC/mL) | Number |
| **brettanomyces spp.** | Popolazione di spp. Brettanomyces (UFC/mL) | Number |
| **batteri_acetici** | Popolazione di Batteri acetici (UFC/mL) | Number |

| **TABELLA: b4_microbiol_chim** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b4_microbiol_chim** | Campo contatore | Number |
| **Vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **Data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |

| | | |
|---|---|---|
| **Fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **glucosio** | Glucosio residuo (g/L) | Number |
| **fruttosio** | Fruttosio residuo (g/L) | Number |
| **zuccheri** | Zuccheri residui (g;L) | Number |
| **etanolo** | Etanolo (%v/v) | Number |
| **glicerina** | Glicerolo (g/L) | Number |
| **acido_acetico** | Acido lattico (g/L) | Number |
| **acido_lattico** | Acido lattico (g/L) | Number |

| **TABELLA: b4_colore_polifenoli** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b4_colore_polifenoli** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data in cui viene effettuato il prelievo | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |
| **fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **ic** | Intensità colorante (a.u.) | Number |
| **t** | Tonalità | Number |
| **al_ta** | Antociani liberi più complessi tannino-antociano (a.u.) | Number |
| **tat** | Complessi tannino-antociano-tannino (a.u.) | Number |
| **flav** | Flavonoidi; (mg/l) | Number |
| **fna** | Flavonoidi non antocianici (mg/l) | Number |
| **antot** | Antociani totali (mg/l) | Number |

| **TABELLA: b4_campioni** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **Vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **Data** | Data in cui viene effettuato il prelievo | Date |
| **Fase** | Fase in cui viene effettuato il prelievo del campione | Text_4 |
| **anno_vendemmia** | Anno di vendemmia del campione analizzato | Number |

| **TABELLA: b4_pacchetti_analitici_legenda** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_analisi** | Gruppo tipologico di analisi chimiche | Number |
| **pacchetto_analisi** | Pacchetto analitico richiesto per il campione in analisi | Text_50 |
| **contenuto_analitico_legenda** | Campo descrittivo | Text_500 |

| TABELLA: b4_fase_legenda | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **Fase** | Fase in cui viene effettuata l'analisi | Text_4 |
| **Descrizione** | Campo descrittivo | Text_50 |

| TABELLA: b4_tempo_fermentazione_legenda | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **tempo_fermentazione** | Fase di fermentazione | Number |
| **Descrizione** | Campo descrittivo | Text_50 |

| TABELLA: b4_tempo_vasca_legenda | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno (0) di messa in vasca | Number |
| **Descrizione** | Campo descrittivo | Text_50 |

| TABELLA: b4_mese_campionamento_legenda | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **Descrizione** | Campo descrittivo | Text_50 |

| TABELLA: b4_vasca | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **anno_vendemmia** | Anno di vendemmia/sperimentazione | Number |
| **replica_giorno** | Replica giorno | Text_5 |
| **tesi** | Codice identificativo della tesi, combinazione dei trattamenti sperimentali per la linea di ricerca | Number |
| **ex_serbatoi** | Campo utile solo per i pressati, in quanto indica da quali serbatoi provenivano | Text_5 |
| **data_riempimento** | Data in cui la vasca è stata riempita | Data |
| **data_svinatura** | Data in cui è stata effettuata la svinatura della vasca | Data |

| TABELLA: b4_replica_giorno | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **replica_giorno** | Replica giorno | Text_5 |

| TABELLA: b4_analisi_uva | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **replica_giorno** | Replica giorno | Text_5 |
| **campione_uva** | Identificativo del campione | Text_4 |

| | | |
|---|---|---|
| **anno_vendemmia** | Anno di vendemmia/sperimentazione | Number |
| **zuccheri_riduttori** | Zuccheri Riduttori (g/L) | Number |
| **pH** | pH | Number |
| **acidità_totale** | Acidità Totale (g/L acido tartarico) | Number |
| **acido_malico** | Acido malico (g/L) | Number |
| **acido_tartarico** | Acido tartarico (g/L) | Number |
| **apa** | Azoto prontamente assimilabile (mg/L) | Number |
| **antociani_potenziali** | Antociani potenziali – pH 1,0 (mg/Kg) | Number |
| **polifenoli_totali** | Polifenoli totali – pH 1,00 (mg/Kg ac.gallico) | Number |
| **peso_medio_acino** | Peso medio acino (g) | Number |

| **TABELLA: B4_gestione_ferm_vasche** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **id_b4_parsec** | Campo contatore | Number |
| **vasca** | Vasca da cui viene estratto il campione | Text_4 |
| **data** | Data a cui si riferiscono i parametri della vasca | Date |
| **tempo_vasca** | Tempo progressivo, espresso in giorni, di permanenza del pigiato in vasca a partire dal giorno di messa in vasca | Number |
| **tempo_fermentazione** | Tempo di fermentazione | Number |
| **mese_campionamento** | Mese del campionamento e delle relative analisi | Number |
| **anno_vendemmia** | Anno di vendemmia/sperimentazione | Number |
| **temp_inpostata** | Temperatura originariamente impostata | |
| **temp_media_giornaliera** | Temperatura media giornaliera (°C) | Number |
| **vol_riempimento_vasca** | somma giornaliera dei minuti di rimontaggio del mosto | Number |
| **vol_rimontaggi_giorno** | volume giornaliero di mosto rimontato dalla pompa (l) | Number |
| **minuti_giorno_rimontaggio** | livello di riempimento della vasca all'ammostamento (Kg) | Number |
| **densita_media_giorno** | densità media calcolata sui valori misurati al mattino e alla sera (kg/m$^3$) | |

| **TABELLA: b4_tesi** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **tesi** | Codice identificativo della tesi, combinazione dei trattamenti sperimentali per la linea di ricerca | Number |
| **tipo_macerazione** | Tecnica di macerazione prefermentativa | Text_5 |
| **temperatura** | Temperatura di sperimentazione | Number |
| **salasso** | Salasso | Text_4 |

| **TABELLA: b4_macerazione_legenda** | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **tipo_macerazione** | Tecnica di macerazione prefermentativa | Text_5 |
| **descrizione** | Campo descrittivo | Text_250 |

| TABELLA: b4_salasso_legenda | | |
|---|---|---|
| **NOME COLONNA** | **CONTENUTO COLONNA** | **FORMATO** |
| **salasso** | Salasso | Text_4 |
| **descrizione** | Campo descrittivo | Text_250 |

# Allegato 3.4 – RELAZIONI NEL DATABASE E INTERROGAZIONE DEI DATI (QUERY)

Il GeoDb Tuscania e un database relazionale e come tale organizza i dati in tabelle, basandosi sulle relazioni fra essi. Le relazioni sono un aspetto fondamentale perché è in base ad esse che è possibile interrogare il GeoDB e poter estrarre le informazioni di cui si ha bisogno attraverso le cosiddette query. Il termine **query**, in informatica viene utilizzato per indicare l'interrogazione di un database in modo da ottenere dei dati contenuti in uno o più database. In PostGreSQL le query vengono gestite tramite il linguaggio SQL.

Di seguito (fig. 3a) è riportato un esempio di query SQL effettuata su tabelle delle stazioni meteo del DB Tuscania attraverso l'interfaccia pgAdmin III di PostgreSQL.

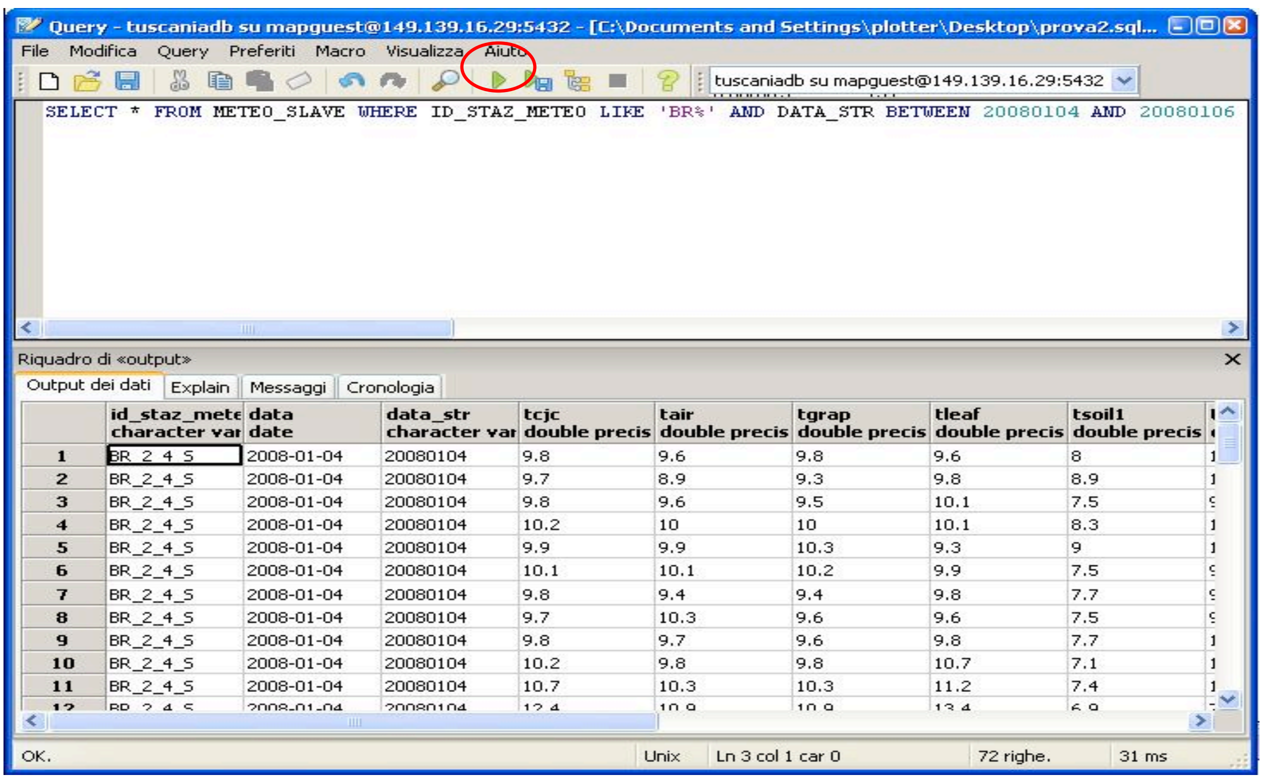



Fig. 3a – Finestra per l'editing della query e relativa tabella dei risultati.

Nella finestra in alto viene scritta l'interrogazione al GeoDB in linguaggio SQL. La query scritta chiede la estrazione di tutti i dati (cioè tutte le colonne) della tabella METEO_SLAVE che rispondono  alla condizione di avere il campo della colonna ID_STAZ_METEO che comincia per Br e che abbiano un valore della colonna

DATA_STR compreso fra 20080104 e 20080106. In altre parole si è richiesto di estrarre i dati riguardanti le stazioni slave di Brolio compresi nel periodo fra il 4 e il 6 gennaio 2008. Nella finestra più in basso vengono riportati i risultati delle query. Il cerchio rosso segnala il pulsante che permette di salvare i risultati delle query direttamente in un file Excel.

Adesso vediamo un esempio più complesso di query che prende in considerazione relazioni esistenti fra tabelle differenti.

Nelle figura 3b è stata estratta una parte del diagramma complessivo del GeoDB Tuscania dove si può vedere ad esempio le relazioni che intercorrono fra le tabelle CAMPIONI, PASSAPORTO, DATI PRODUTTIVI e VIGNETO.

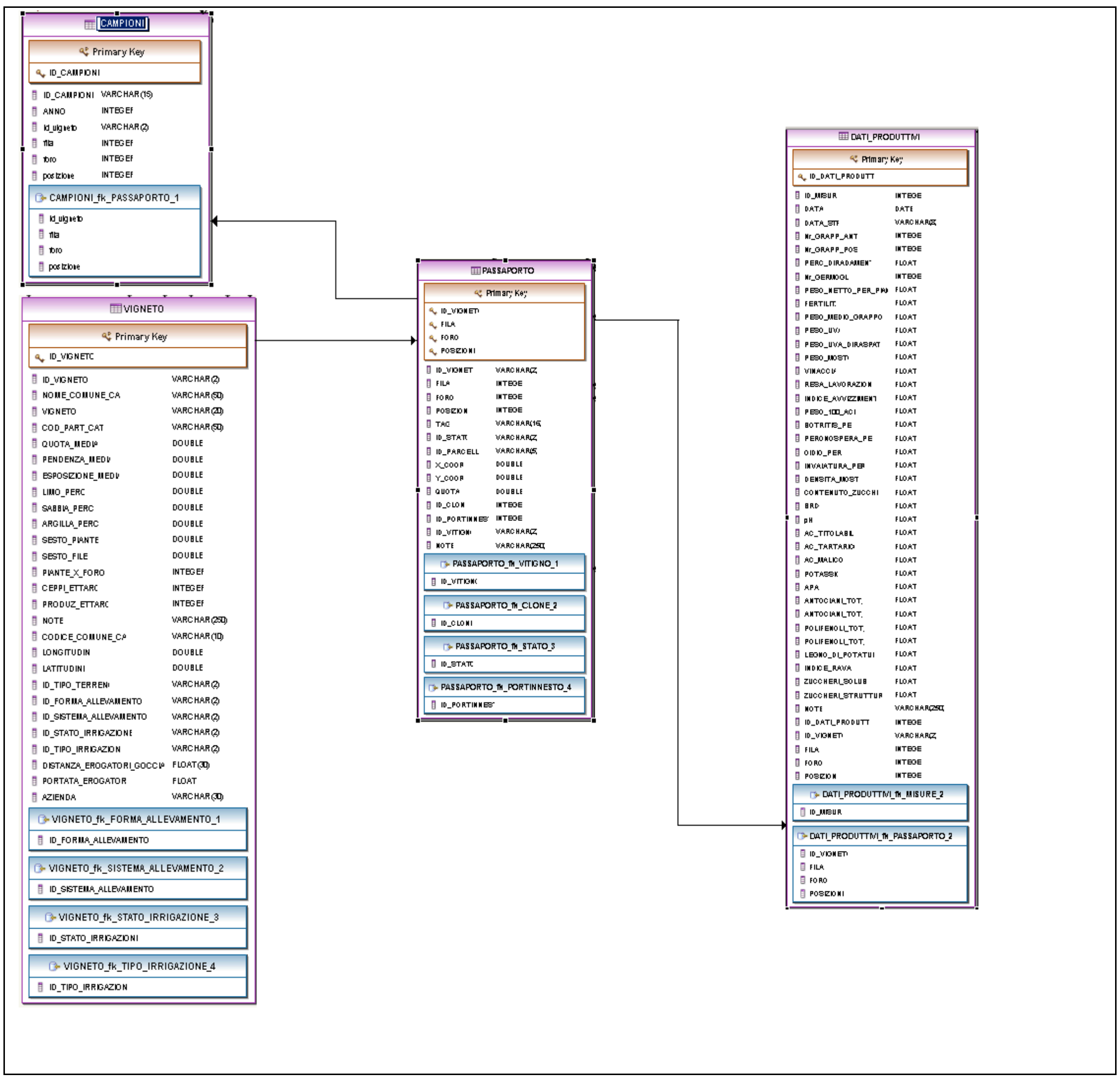



Fig. 3b – Porzione dello schema del GeoDB.

La tabella CAMPIONI, attraverso la composizione dei quattro campi ID_VIGNETO, FILA, FORO, POSIZIONE (che compongono in pratica in maniera univoca l'identificativo della posizione della pianta ID_POSIZIONE) è collegata alla tabella PASSAPORTO; lo stesso tipo di collegamento si ha fra la tabella PASSAPORTO e DATI_PRODUTTIVI; di conseguenza la tabella CAMPIONI e DATI_PRODUTTIVI sono collegate attraverso il campo quattro campi che identificano la posizione.

Mettiamo caso che siamo interessati a estrarre i dati produttivi per tutti i campioni del vigneto di Brolio per l'anno 2007. La query che scriveremo su l'interfaccia pgAdmin III di PostgreSQL è visibile in fig.3c. Chiaramente essendo ancora vuoto il database il riquadro degli output riporta solo la descrizione dei parametri selezionati ma non il loro contenuto.

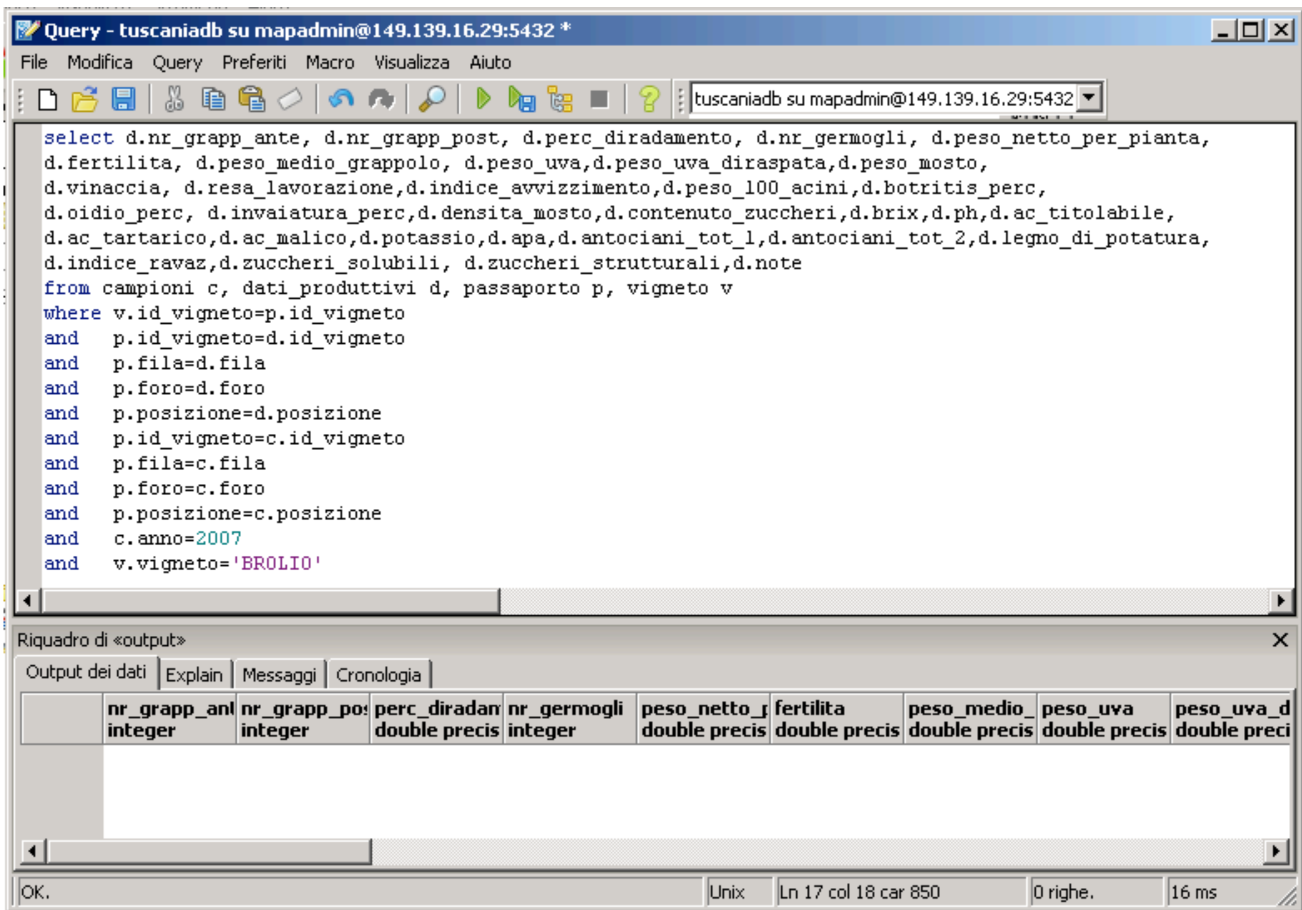



Fig. 3c – Esempio di query complessa.

Superata la fase di test del GeoDB, per agevolare l'accesso ai dati verranno fornite agli utenti del GeoDB una serie di query "preconfezionate" in linguaggio SQL per l'interrogazione e la estrazione dei dati. Queste permetterà in potenziali sviluppi futuri l'accesso al GeoDB non in maniera diretta ma attraverso degli appositi programmi applicativi, sviluppati sempre lato server, che funzionano, per così dire, da interfaccia. Ovviamente sarà poi possibile creare anche query "ad hoc" per le specifiche necessità dei vari user.

Inserire leelenco query fornite per le analisi dei dati

# Allegato 3.5 - Versione sperimentale del Thesaurus

| Parametro | Descrizione |
|---|---|
| **Defogliazione** | Intervento svolto nel periodo vegetativo la cui importanza risiede nel miglioramento dell'esposizione, ai raggi del sole, dei grappoli attraverso l'asportazione delle foglie più vecchie. |
| **Diradamento** | Questa operazione consiste nel togliere parte dei germogli produttivi quando questi hanno raggiunto 10-20 cm di lunghezza con l'obiettivo di regolare la produzione e distribuirla in maniera omogenea ottimizzando l'equilibrio vegeto-produtttivo. |
| **Clone** | Il clone in viticoltura deriva dalla moltiplicazione per via agamica di un individuo (ceppo) isolato all'interno della varietà: i discendenti del clone hanno lo stesso corredo genetico (tutti gli individui sono identici). |
| **Portinnesto** | Parte inferiore di una pianta moltiplicata con la tecnica dell'innesto. fornisce l'apparato radicale e una parte più o meno sviluppata dell'apparato caulinare. |
| **Vitigno** | Particolare varietà di uva.Si distinguono per differenti forme e colori dei chicchi di uva, del grappolo e delle foglie, oltre che per differenti periodi di maturazione e soprattutto per le diverse caratteristiche organolettiche dei vini da essi ottenuti. |
| **NDVI** | Indice usato per stimare la quantità, qualità, e sviluppo della vegetazione in base alla misura, per mezzo di sensori comunemente installati su una piattaforma spaziale, della intensità della radiazione di specifiche bande dello spettro magnetico che la vegetazione emette o riflette. |
| **LAI** | Il Leaf area index è il rapporto fra la superficie fogliare superiore della vegetazione e l'area della superficie su cui la vegetazione cresce. E' un valore adimensionale, che varia da 0 per il suolo nudo a 6 per fitte foreste. |
| **Potenziale Idrico** | Misurazione usata per valutare il generale stato idrico di una pianta. Il valore 0 indica l'assenza di stress idrico, mentre valori crescenti negativi ne certificano la presenza. |
| **Fenologia** | Osservazione della variazione delle fasi fenologiche in comunità vegetali ed animali, da porsi in relazione con i cambiamenti climatici. |