**GENETIC PARAMETERS AND DIRECT, MATERNAL, AND HETEROSIS EFFECTS ON LITTER SIZE IN A DIALLEL CROSS AMONG THREE COMMERCIAL VARIETIES OF IBERIAN PIG. J. L. Noguera, N. Ibáñez-Escriche, J. Casellas, J. P. Rosas, L. Varona. ANIMAL JOURNAL**

**Supplementary Table S1.** Posterior Mean (and Standard Deviation) estimates of the additive ($σ\_{aE}^{2}$, $σ\_{aR}^{2}$ and $σ\_{aT}^{2}$), permanent environmental ($σ\_{p}^{2} )$ and residual variance ($σ\_{e}^{2}$) components and population specific heritabilities ($h\_{E}^{2}$, $h\_{R}^{2}$,$ h\_{T}^{2}$) for Number Born Alive (NBA) with models MH, LH, LM, L, M, H among three commercial varieties of Iberian pig.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | MH | LH | LM | L | M | H |
| $$σ\_{aE}^{2}$$ | 0.673 (0.124) | 0.693 (0.126) | 0.658 (0.123) | 0.674 (0.125) | 0.660 (0.123) | 0.711 (0.127) |
| $$σ\_{aR}^{2}$$ | 0.466 (0.094) | 0.390 (0.087) | 0.393 (0.090) | 0.387 (0.089) | 0.442 (0.094) | 0.469 (0.094) |
| $$σ\_{aT}^{2}$$ | 0.423 (0.110) | 0.362 (0.104) | 0.382 (0.109) | 0.385 (0.109) | 0.430 (0.112) | 0.454 (0.111) |
| $$σ\_{p}^{2}$$ | 0.339 (0.051) | 0.367 (0.052) | 0.385 (0.053) | 0.387 (0.052) | 0.368 (0.052) | 0.332 (0.051) |
| $$σ\_{e}^{2}$$ | 4.019 (0.048) | 4.020 (0.047) | 4.022 (0.047) | 4.022 (0.047) | 4.022 (0.048) | 4.020 (0.047) |
| $$h\_{E}^{2}$$ | 0.133 (0.022) | 0.136 (0.022) | 0.130 (0.022) | 0.132 (0.022) | 0.130 (0.022) | 0.140 (0.022) |
| $$h\_{R}^{2}$$ | 0.096 (0.018) | 0.081 (0.017) | 0.082 (0.017) | 0.080 (0.017) | 0.091 (0.018) | 0.097 (0.018) |
| $$h\_{T}^{2}$$ | 0.088 (0.021) | 0.076 (0.021) | 0.080 (0.021) | 0.080 (0.021) | 0.089 (0.021) | 0.094 (0.021) |

MH: Reduced model with maternal and heterosis effects, LH: Reduced model with direct line and heterosis effects, LM: Reduced model with direct line and maternal effects, L: Reduced model with direct line effects, M: Reduced model with maternal effects, H: Reduced model with Heterosis effects.

**Supplementary Table S2.** Posterior Mean (and Standard Deviation) estimates of the additive ($σ\_{aE}^{2}$, $σ\_{aR}^{2}$ and $σ\_{aT}^{2}$), permanent environmental ($σ\_{p}^{2} )$ and residual variance ($σ\_{e}^{2}$) components and population specific heritabilities ($h\_{E}^{2}$, $h\_{R}^{2}$,$ h\_{T}^{2}$) for Total Number Born (TNB) with models MH, LH, LM, L, M, H among three commercial varieties of Iberian pig.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | MH | LH | LM | L | M | H |
| $$σ\_{aE}^{2}$$ | 0.734 (0.128) | 0.753 (0.130) | 0.709 (0.126) | 0.730 (0.128) | 0.718 (0.127) | 0.771 (0.132) |
| $$σ\_{aR}^{2}$$ | 0.516 (0.097) | 0.430 (0.090) | 0.436 (0.093) | 0.431 (0.092) | 0.498 (0.098) | 0.511 (0.097) |
| $$σ\_{aT}^{2}$$ | 0.483 (0.119) | 0.413 (0.115) | 0.427 (0.117) | 0.434 (0.118) | 0.487 (0.121) | 0.514 (0.121) |
| $$σ\_{p}^{2}$$ | 0.343 (0.052) | 0.376 (0.053) | 0.395 (0.053) | 0.396 (0.053) | 0.372 (0.053) | 0.339 (0.052) |
| $$σ\_{e}^{2}$$ | 4.028 (0.047) | 4.029 (0.047) | 4.031 (0.047) | 4.031 (0.048) | 4.031 (0.048) | 4.030 (0.048) |
| $$h\_{E}^{2}$$ | 0.143 (0.022) | 0.146 (0.022) | 0.138 (0.022) | 0.141 (0.022) | 0.139 (0.022) | 0.150 (0.022) |
| $$h\_{R}^{2}$$ | 0.105 (0.018) | 0.089 (0.017) | 0.089 (0.018) | 0.089 (0.018) | 0.101 (0.019) | 0.104 (0.018) |
| $$h\_{T}^{2}$$ | 0.099 (0.022) | 0.085 (0.022) | 0.088 (0.022) | 0.089 (0.022) | 0.099 (0.023) | 0.105 (0.022) |

MH: Reduced model with maternal and heterosis effects, LH: Reduced model with direct line and heterosis effects, LM: Reduced model with direct line and maternal effects, L: Reduced model with direct line effects, M: Reduced model with maternal effects, H: Reduced model with Heterosis effects.

**Supplementary Table S3.** Posterior Mean (and Standard Deviation) estimates of the contrast between direct line (LE, LR and LT) and maternal effects (ME, MR and MT) and the heterosis (HER, HET and HRT) effects for Number Born Alive (NBA) with models MH, LH, LM, L, M, H among three commercial varieties of Iberian pig.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | MH | LH | LM | L | M | H |
| Direct Line | LE vs. LR | - | -0.241 (0.294) | -0.567 (0.311) | -0.250 (0.290) | - | - |
|  | LE vs. LT | - | 0.557 (0.295) | 0.197 (0.318) | 0.464 (0.290) | - | - |
|  | LR vs. LT | - | 0.798 (0.170) | 0.761 (0.210) | 0.715 (0.170) | - | - |
| Maternal | ME vs. MR | 0.333 (0.115) | - | 0.326 (0.119) | - | 0.235 (0.111) | - |
|  | ME vs. MT | 0.564 (0.130) | - | 0.294 (0.137) | - | 0.409 (0.124) | - |
|  | MR vs. MT | 0.231 (0.088) | - | -0.032 (0.098) | - | 0.174 (0.082) | - |
| Heterosis | HER | 0.629 (0.097) | 0.579 (0.095) | - | - | - | 0.598 (0.096) |
|  | HET | 0.611 (0.129) | 0.493 (0.123) | - | - | - | 0.439 (0.123) |
|  | HRT | 0.693 (0.093) | 0.674 (0.091) | - | - | - | 0.629 (0.091) |

MH: Reduced model with maternal and heterosis effects, LH: Reduced model with direct line and heterosis effects, LM: Reduced model with direct line and maternal effects, L: Reduced model with direct line effects, M: Reduced model with maternal effects, H: Reduced model with Heterosis effects. LE, LR and LT are the direct line effects for Entrepelado, Retinto and Torbiscal, respectively. ME, MR and MT are the maternal line effects for Entrepelado, Retinto and Torbiscal. HER, HET and HRT are the heterosis effects between Entrepelado and Retinto, Entrepelado and Torbiscal and Retinto and Torbiscal, respectively.

**Supplementary Table S4.** Posterior Mean (and Standard Deviation) estimates of the contrast between direct line (LE, LR and LT) and maternal effects (ME, MR and MT) and the heterosis (HER, HET and HRT) effects for Total Number Born (TNB) with models MH, LH, LM, L, M, H among three commercial varieties of Iberian pig.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | MH | LH | LM | L | M | H |
| Direct Line | LE vs. LR | - | -0.318 (0.305) | -0.733 (0.321) | -0.318 (0.300) | - | - |
|  | LE vs. LT | - | 0.499 (0.306) | 0.089 (0.329) | 0.418 (0.301) | - | - |
|  | LR vs. LT | - | 0.817 (0.178) | 0.822 (0.217) | 0.735 (0.176) | - | - |
| Maternal | ME vs. MR | 0.417 (0.117) | - | 0.427 (0.121) | - | 0.314 (0.114) | - |
|  | ME vs. MT | 0.629 (0.133) | - | 0.365 (0.140) | - | 0.468 (0.127) | - |
|  | MR vs. MT | 0.212 (0.091) | - | -0.061 (0.100) | - | 0.154 (0.084) | - |
| Heterosis | HER | 0.630 (0.099) | 0.568 (0.097) | - | - | - | 0.585 (0.097) |
|  | HET | 0.628 (0.131) | 0.501 (0.125) | - | - | - | 0.448 (0.125) |
|  | HRT | 0.672 (0.094) | 0.649 (0.092) | - | - | - | 0.607 (0.092) |

MH: Reduced model with maternal and heterosis effects, LH: Reduced model with direct line and heterosis effects, LM: Reduced model with direct line and maternal effects, L: Reduced model with direct line effects, M: Reduced model with maternal effects, H: Reduced model with Heterosis effects. LE, LR and LT are the direct line effects for Entrepelado, Retinto and Torbiscal, respectively. ME, MR and MT are the maternal line effects for Entrepelado, Retinto and Torbiscal. HER, HET and HRT are the heterosis effects between Entrepelado and Retinto, Entrepelado and Torbiscal and Retinto and Torbiscal, respectively.