**Supplemental table S1**

Part A:

**1st Head movement x Breed**

## Holm-Bonferroni post-hoc tests for pairwise comparisons of breeds for the variable first head movement of naïve, mature hens of different breeds (part A). Given are the estimate. which indicates the difference between the pair (first minus second), standard error (SE) and p-value. P-values are marked with \* for significances (α-level was set at p ≤ 0.05 and indicated as \*, p ≤ 0.01 is indicated as \*\* and p ≤ 0.001 as \*\*\*). Only significant pairwise comparisons (p ≤ 0.05) are highlighted green.

|  |  |  |  |
| --- | --- | --- | --- |
| **Breeds** | **Estimate** | **SE** | **p-value** |
| SI - BLC | -5.873 | 3.480 | 0.973 |
| SI - BS | -1.496 | 3.090 | 1.000 |
| SI - BR | -0.662 | 3.480 | 1.000 |
| SI - CB | -5.861 | 3.900 | 0.992 |
| SI - CO | 1.785 | 3.230 | 1.000 |
| SI - EFG | -1.260 | 3.720 | 1.000 |
| SI - GC | -8.537 | 3.330 | 0.512 |
| SI - GEB | 0.420 | 3.370 | 1.000 |
| SI - JB | 1.892 | 3.080 | 1.000 |
| SI - LG | 5.259 | 3.720 | 0.996 |
| SI - LB | 10.330 | 3.370 | 0.200 |
| SI - LD | 1.242 | 3.630 | 1.000 |
| SI - LSL | 5.486 | 3.110 | 0.959 |
| SI - MA | -1.484 | 3.900 | 1.000 |
| SI - OH | 3.156 | 3.400 | 1.000 |
| SI - PO | -3.521 | 3.200 | 1.000 |
| SI - RB | 4.339 | 4.160 | 1.000 |
| SI - YO | -3.600 | 4.050 | 1.000 |
| BLC - BS | 4.377 | 2.920 | 0.992 |
| BLC - BR | 5.211 | 3.210 | 0.982 |
| BLC - CB | 0.012 | 3.710 | 1.000 |
| BLC - CO | 7.658 | 2.900 | 0.458 |
| BLC - EFG | 4.613 | 3.510 | 0.998 |
| BLC - GC | -2.664 | 3.100 | 1.000 |
| BLC - GEB | 6.292 | 3.250 | 0.908 |
| BLC - JB | 7.765 | 2.790 | 0.358 |
| BLC - LG | 11.132 | 3.510 | 0.155 |
| BLC - LB | 16.203 | 3.250 | 0.000 |
| BLC - LD | 7.114 | 3.510 | 0.870 |
| BLC - LSL | 11.359 | 2.930 | 0.020 |
| BLC - MA | 4.388 | 3.670 | 1.000 |
| BLC - OH | 9.028 | 3.150 | 0.302 |
| BLC - PO | 2.351 | 2.830 | 1.000 |
| BLC - RB | 10.211 | 3.560 | 0.303 |
| BLC - YO | 2.272 | 3.490 | 1.000 |
| BS - BR | 0.834 | 2.810 | 1.000 |
| BS - CB | -4.365 | 3.290 | 0.998 |
| BS - CO | 3.280 | 2.510 | 0.999 |
| BS - EFG | 0.236 | 3.070 | 1.000 |
| BS - GC | -7.041 | 2.590 | 0.397 |
| BS - GEB | 1.915 | 2.570 | 1.000 |
| BS - JB | 3.388 | 2.290 | 0.993 |
| BS - LG | 6.755 | 3.070 | 0.776 |
| BS - LB | 11.826 | 2.570 | 0.001 |
| BS - LD | 2.737 | 2.900 | 1.000 |
| BS - LSL | 6.982 | 2.240 | 0.178 |
| BS - MA | 0.011 | 3.310 | 1.000 |
| BS - OH | 4.651 | 2.680 | 0.965 |
| BS - PO | -2.026 | 2.490 | 1.000 |
| BS - RB | 5.834 | 3.820 | 0.990 |
| BS - YO | -2.105 | 3.680 | 1.000 |
| BR - CB | -5.199 | 3.680 | 0.996 |
| BR - CO | 2.447 | 2.940 | 1.000 |
| BR - EFG | -0.598 | 3.480 | 1.000 |
| BR - GC | -7.875 | 3.060 | 0.506 |
| BR - GEB | 1.082 | 3.120 | 1.000 |
| BR - JB | 2.554 | 2.790 | 1.000 |
| BR - LG | 5.921 | 3.480 | 0.971 |
| BR - LB | 10.992 | 3.120 | 0.059 |
| BR - LD | 1.903 | 3.390 | 1.000 |
| BR - LSL | 6.148 | 2.830 | 0.790 |
| BR - MA | -0.823 | 3.670 | 1.000 |
| BR - OH | 3.817 | 3.130 | 0.999 |
| BR - PO | -2.860 | 2.910 | 1.000 |
| BR - RB | 5.001 | 3.910 | 0.999 |
| BR - YO | -2.938 | 3.810 | 1.000 |
| CB - CO | 7.646 | 3.440 | 0.761 |
| CB - EFG | 4.601 | 3.900 | 1.000 |
| CB - GC | -2.676 | 3.530 | 1.000 |
| CB - GEB | 6.281 | 3.550 | 0.958 |
| CB - JB | 7.753 | 3.300 | 0.674 |
| CB - LG | 11.120 | 3.900 | 0.313 |
| CB - LB | 16.191 | 3.560 | 0.002 |
| CB - LD | 7.102 | 3.800 | 0.931 |
| CB - LSL | 11.347 | 3.310 | 0.078 |
| CB - MA | 4.377 | 4.080 | 1.000 |
| CB - OH | 9.017 | 3.590 | 0.554 |
| CB - PO | 2.340 | 3.420 | 1.000 |
| CB - RB | 10.200 | 4.370 | 0.685 |
| CB - YO | 2.261 | 4.270 | 1.000 |
| CO - EFG | -3.045 | 3.240 | 1.000 |
| CO - GC | -10.322 | 2.780 | 0.032 |
| CO - GEB | -1.365 | 2.860 | 1.000 |
| CO - JB | 0.107 | 2.470 | 1.000 |
| CO - LG | 3.474 | 3.240 | 1.000 |
| CO - LB | 8.545 | 2.860 | 0.235 |
| CO - LD | -0.543 | 3.150 | 1.000 |
| CO - LSL | 3.701 | 2.530 | 0.994 |
| CO - MA | -3.269 | 3.430 | 1.000 |
| CO - OH | 1.371 | 2.850 | 1.000 |
| CO - PO | -5.306 | 2.580 | 0.857 |
| CO - RB | 2.554 | 3.630 | 1.000 |
| CO - YO | -5.385 | 3.520 | 0.990 |
| EFG - GC | -7.277 | 3.330 | 0.782 |
| EFG - GEB | 1.680 | 3.350 | 1.000 |
| EFG - JB | 3.152 | 3.090 | 1.000 |
| EFG - LG | 6.519 | 3.720 | 0.961 |
| EFG - LB | 11.590 | 3.360 | 0.072 |
| EFG - LD | 2.501 | 3.610 | 1.000 |
| EFG - LSL | 6.746 | 3.100 | 0.788 |
| EFG - MA | -0.225 | 3.900 | 1.000 |
| EFG - OH | 4.415 | 3.400 | 0.999 |
| EFG - PO | -2.262 | 3.210 | 1.000 |
| EFG - RB | 5.599 | 4.210 | 0.998 |
| EFG - YO | -2.340 | 4.100 | 1.000 |
| GC - GEB | 8.957 | 2.910 | 0.194 |
| GC - JB | 10.429 | 2.600 | 0.012 |
| GC - LG | 13.796 | 3.330 | 0.007 |
| GC - LB | 18.867 | 2.910 | ≤ 0.001\*\*\* |
| GC - LD | 9.778 | 3.200 | 0.204 |
| GC - LSL | 14.023 | 2.610 | ≤ 0.001\*\*\* |
| GC - MA | 7.053 | 3.530 | 0.884 |
| GC - OH | 11.693 | 2.960 | 0.015 |
| GC - PO | 5.016 | 2.750 | 0.944 |
| GC - RB | 12.876 | 3.870 | 0.103 |
| GC - YO | 4.937 | 3.750 | 0.998 |
| GEB - JB | 1.473 | 2.660 | 1.000 |
| GEB - LG | 4.840 | 3.350 | 0.995 |
| GEB - LB | 9.910 | 2.880 | 0.075 |
| GEB - LD | 0.822 | 3.170 | 1.000 |
| GEB - LSL | 5.067 | 2.600 | 0.904 |
| GEB - MA | -1.904 | 3.580 | 1.000 |
| GEB - OH | 2.736 | 3.000 | 1.000 |
| GEB - PO | -3.941 | 2.850 | 0.997 |
| GEB - RB | 3.919 | 4.110 | 1.000 |
| GEB - YO | -4.020 | 3.970 | 1.000 |
| JB - LG | 3.367 | 3.090 | 1.000 |
| JB - LB | 8.438 | 2.660 | 0.154 |
| JB - LD | -0.651 | 2.970 | 1.000 |
| JB - LSL | 3.594 | 2.320 | 0.989 |
| JB - MA | -3.377 | 3.300 | 1.000 |
| JB - OH | 1.264 | 2.680 | 1.000 |
| JB - PO | -5.414 | 2.430 | 0.754 |
| JB - RB | 2.447 | 3.590 | 1.000 |
| JB - YO | -5.492 | 3.470 | 0.986 |
| LG - LB | 5.071 | 3.360 | 0.992 |
| LG - LD | -4.018 | 3.610 | 1.000 |
| LG - LSL | 0.227 | 3.100 | 1.000 |
| LG - MA | -6.744 | 3.900 | 0.966 |
| LG - OH | -2.104 | 3.400 | 1.000 |
| LG - PO | -8.781 | 3.210 | 0.390 |
| LG - RB | -0.920 | 4.210 | 1.000 |
| LG - YO | -8.860 | 4.100 | 0.799 |
| LB - LD | -9.089 | 3.170 | 0.306 |
| LB - LSL | -4.844 | 2.600 | 0.934 |
| LB - MA | -11.814 | 3.580 | 0.110 |
| LB - OH | -7.174 | 3.010 | 0.645 |
| LB - PO | -13.851 | 2.860 | 0.001 |
| LB - RB | -5.991 | 4.120 | 0.994 |
| LB - YO | -13.930 | 3.970 | 0.062 |
| LD - LSL | 4.245 | 2.920 | 0.995 |
| LD - MA | -2.726 | 3.820 | 1.000 |
| LD - OH | 1.914 | 3.290 | 1.000 |
| LD - PO | -4.763 | 3.150 | 0.991 |
| LD - RB | 3.097 | 4.320 | 1.000 |
| LD - YO | -4.842 | 4.180 | 1.000 |
| LSL - MA | -6.971 | 3.330 | 0.836 |
| LSL - OH | -2.331 | 2.710 | 1.000 |
| LSL - PO | -9.008 | 2.510 | 0.049 |
| LSL - RB | -1.148 | 3.820 | 1.000 |
| LSL - YO | -9.087 | 3.680 | 0.584 |
| MA - OH | 4.640 | 3.590 | 0.999 |
| MA - PO | -2.037 | 3.400 | 1.000 |
| MA - RB | 5.823 | 4.310 | 0.998 |
| MA - YO | -2.116 | 4.210 | 1.000 |
| OH - PO | -6.677 | 2.820 | 0.658 |
| OH - RB | 1.183 | 3.890 | 1.000 |
| OH - YO | -6.756 | 3.770 | 0.953 |
| PO - RB | 7.860 | 3.530 | 0.755 |
| PO - YO | -0.079 | 3.430 | 1.000 |
| RB - YO | -7.939 | 3.730 | 0.816 |

**1st Leg movement x Breed**

Holm-Bonferroni post-hoc tests for pairwise comparisons of breeds for the variable **first leg movement** of naïve, mature hens of different breeds (part A). Given are the estimate, which indicates the difference between the pair (first minus second), standard error (SE) and p-value. P-values are marked with \* for significances (α-level was set at p ≤ 0.05 and indicated as \*, p ≤ 0.01 is indicated as \*\* and p ≤ 0.001 as \*\*\*). Only significant pairwise comparisons (p ≤ 0.05) are highlighted green.

|  |  |  |  |
| --- | --- | --- | --- |
| **Breeds** | **Estimate** | **SE** | **p - value** |
| SI - BLC | -4.836 | 3.170 | 0.991 |
| SI - BS | -0.054 | 2.770 | 1.000 |
| SI - BR | -0.193 | 3.160 | 1.000 |
| SI - CB | -5.042 | 3.580 | 0.996 |
| SI - CO | 1.650 | 2.910 | 1.000 |
| SI - EFG | -1.740 | 3.400 | 1.000 |
| SI - GC | -8.740 | 3.010 | 0.283 |
| SI - GEB | 1.388 | 3.050 | 1.000 |
| SI - JB | 2.302 | 2.770 | 1.000 |
| SI - LG | 3.117 | 3.400 | 1.000 |
| SI - LB | 7.861 | 3.060 | 0.506 |
| SI - LD | -0.725 | 3.300 | 1.000 |
| SI - LSL | 4.470 | 2.790 | 0.984 |
| SI - MA | -0.825 | 3.580 | 1.000 |
| SI - OH | 4.069 | 3.080 | 0.998 |
| SI - PO | -4.195 | 2.880 | 0.995 |
| SI - RB | 2.411 | 3.840 | 1.000 |
| SI - YO | -3.521 | 3.730 | 1.000 |
| BLC - BS | 4.783 | 2.770 | 0.966 |
| BLC - BR | 4.643 | 3.050 | 0.991 |
| BLC - CB | -0.206 | 3.510 | 1.000 |
| BLC - CO | 6.487 | 2.750 | 0.668 |
| BLC - EFG | 3.097 | 3.330 | 1.000 |
| BLC - GC | -3.904 | 2.940 | 0.998 |
| BLC - GEB | 6.224 | 3.080 | 0.873 |
| BLC - JB | 7.138 | 2.650 | 0.416 |
| BLC - LG | 7.953 | 3.330 | 0.646 |
| BLC - LB | 12.697 | 3.090 | 0.008 |
| BLC - LD | 4.111 | 3.330 | 0.999 |
| BLC - LSL | 9.306 | 2.780 | 0.098 |
| BLC - MA | 4.011 | 3.480 | 1.000 |
| BLC - OH | 8.905 | 2.980 | 0.237 |
| BLC - PO | 0.641 | 2.680 | 1.000 |
| BLC - RB | 7.247 | 3.380 | 0.807 |
| BLC - YO | 1.315 | 3.310 | 1.000 |
| BS - BR | -0.139 | 2.660 | 1.000 |
| BS - CB | -4.989 | 3.120 | 0.985 |
| BS - CO | 1.704 | 2.380 | 1.000 |
| BS - EFG | -1.686 | 2.920 | 1.000 |
| BS - GC | -8.686 | 2.450 | 0.055 |
| BS - GEB | 1.442 | 2.440 | 1.000 |
| BS - JB | 2.356 | 2.170 | 1.000 |
| BS - LG | 3.171 | 2.920 | 1.000 |
| BS - LB | 7.914 | 2.440 | 0.127 |
| BS - LD | -0.671 | 2.750 | 1.000 |
| BS - LSL | 4.523 | 2.130 | 0.819 |
| BS - MA | -0.771 | 3.140 | 1.000 |
| BS - OH | 4.123 | 2.540 | 0.982 |
| BS - PO | -4.141 | 2.360 | 0.962 |
| BS - RB | 2.464 | 3.620 | 1.000 |
| BS - YO | -3.468 | 3.490 | 1.000 |
| BR - CB | -4.849 | 3.490 | 0.997 |
| BR - CO | 1.843 | 2.790 | 1.000 |
| BR - EFG | -1.547 | 3.300 | 1.000 |
| BR - GC | -8.547 | 2.900 | 0.259 |
| BR - GEB | 1.581 | 2.960 | 1.000 |
| BR - JB | 2.495 | 2.650 | 1.000 |
| BR - LG | 3.310 | 3.300 | 1.000 |
| BR - LB | 8.054 | 2.960 | 0.397 |
| BR - LD | -0.532 | 3.210 | 1.000 |
| BR - LSL | 4.663 | 2.680 | 0.964 |
| BR - MA | -0.632 | 3.480 | 1.000 |
| BR - OH | 4.262 | 2.970 | 0.995 |
| BR - PO | -4.002 | 2.760 | 0.995 |
| BR - RB | 2.604 | 3.710 | 1.000 |
| BR - YO | -3.328 | 3.610 | 1.000 |
| CB - CO | 6.692 | 3.260 | 0.859 |
| CB - EFG | 3.302 | 3.700 | 1.000 |
| CB - GC | -3.698 | 3.350 | 1.000 |
| CB - GEB | 6.430 | 3.370 | 0.919 |
| CB - JB | 7.344 | 3.130 | 0.676 |
| CB - LG | 8.159 | 3.700 | 0.771 |
| CB - LB | 12.903 | 3.370 | 0.023 |
| CB - LD | 4.317 | 3.600 | 1.000 |
| CB - LSL | 9.512 | 3.140 | 0.215 |
| CB - MA | 4.217 | 3.870 | 1.000 |
| CB - OH | 9.111 | 3.410 | 0.432 |
| CB - PO | 0.847 | 3.240 | 1.000 |
| CB - RB | 7.453 | 4.150 | 0.952 |
| CB - YO | 1.521 | 4.050 | 1.000 |
| CO - EFG | -3.390 | 3.070 | 1.000 |
| CO - GC | -10.390 | 2.630 | 0.015 |
| CO - GEB | -0.262 | 2.710 | 1.000 |
| CO - JB | 0.652 | 2.340 | 1.000 |
| CO - LG | 1.467 | 3.070 | 1.000 |
| CO - LB | 6.210 | 2.710 | 0.714 |
| CO - LD | -2.375 | 2.990 | 1.000 |
| CO - LSL | 2.819 | 2.400 | 1.000 |
| CO - MA | -2.475 | 3.260 | 1.000 |
| CO - OH | 2.419 | 2.700 | 1.000 |
| CO - PO | -5.845 | 2.450 | 0.646 |
| CO - RB | 0.761 | 3.440 | 1.000 |
| CO - YO | -5.171 | 3.340 | 0.989 |
| EFG - GC | -7.000 | 3.150 | 0.762 |
| EFG - GEB | 3.128 | 3.180 | 1.000 |
| EFG - JB | 4.042 | 2.930 | 0.997 |
| EFG - LG | 4.857 | 3.530 | 0.997 |
| EFG - LB | 9.600 | 3.180 | 0.221 |
| EFG - LD | 1.015 | 3.420 | 1.000 |
| EFG - LSL | 6.209 | 2.940 | 0.825 |
| EFG - MA | 0.915 | 3.700 | 1.000 |
| EFG - OH | 5.809 | 3.220 | 0.950 |
| EFG - PO | -2.455 | 3.050 | 1.000 |
| EFG - RB | 4.151 | 4.000 | 1.000 |
| EFG - YO | -1.781 | 3.890 | 1.000 |
| GC - GEB | 10.128 | 2.760 | 0.038 |
| GC - JB | 11.042 | 2.470 | 0.002 |
| GC - LG | 11.857 | 3.150 | 0.028 |
| GC - LB | 16.601 | 2.760 | <.0001 |
| GC - LD | 8.015 | 3.040 | 0.457 |
| GC - LSL | 13.210 | 2.480 | 0.000 |
| GC - MA | 7.915 | 3.350 | 0.662 |
| GC - OH | 12.809 | 2.810 | 0.002 |
| GC - PO | 4.545 | 2.610 | 0.963 |
| GC - RB | 11.151 | 3.670 | 0.211 |
| GC - YO | 5.219 | 3.560 | 0.994 |
| GEB - JB | 0.914 | 2.520 | 1.000 |
| GEB - LG | 1.729 | 3.180 | 1.000 |
| GEB - LB | 6.473 | 2.730 | 0.658 |
| GEB - LD | -2.113 | 3.010 | 1.000 |
| GEB - LSL | 3.082 | 2.470 | 0.999 |
| GEB - MA | -2.213 | 3.390 | 1.000 |
| GEB - OH | 2.681 | 2.850 | 1.000 |
| GEB - PO | -5.583 | 2.700 | 0.852 |
| GEB - RB | 1.023 | 3.900 | 1.000 |
| GEB - YO | -4.909 | 3.760 | 0.999 |
| JB - LG | 0.815 | 2.930 | 1.000 |
| JB - LB | 5.559 | 2.520 | 0.773 |
| JB - LD | -3.027 | 2.820 | 1.000 |
| JB - LSL | 2.168 | 2.200 | 1.000 |
| JB - MA | -3.127 | 3.130 | 1.000 |
| JB - OH | 1.767 | 2.550 | 1.000 |
| JB - PO | -6.497 | 2.300 | 0.330 |
| JB - RB | 0.109 | 3.410 | 1.000 |
| JB - YO | -5.823 | 3.290 | 0.958 |
| LG - LB | 4.744 | 3.180 | 0.993 |
| LG - LD | -3.842 | 3.420 | 1.000 |
| LG - LSL | 1.352 | 2.940 | 1.000 |
| LG - MA | -3.942 | 3.700 | 1.000 |
| LG - OH | 0.952 | 3.220 | 1.000 |
| LG - PO | -7.312 | 3.050 | 0.635 |
| LG - RB | -0.706 | 4.000 | 1.000 |
| LG - YO | -6.638 | 3.890 | 0.970 |
| LB - LD | -8.586 | 3.010 | 0.312 |
| LB - LSL | -3.391 | 2.470 | 0.997 |
| LB - MA | -8.686 | 3.390 | 0.515 |
| LB - OH | -3.792 | 2.850 | 0.998 |
| LB - PO | -12.056 | 2.710 | 0.002 |
| LB - RB | -5.450 | 3.900 | 0.997 |
| LB - YO | -11.382 | 3.770 | 0.219 |
| LD - LSL | 5.195 | 2.770 | 0.930 |
| LD - MA | -0.100 | 3.620 | 1.000 |
| LD - OH | 4.794 | 3.120 | 0.990 |
| LD - PO | -3.470 | 2.980 | 1.000 |
| LD - RB | 3.136 | 4.090 | 1.000 |
| LD - YO | -2.796 | 3.970 | 1.000 |
| LSL - MA | -5.295 | 3.160 | 0.975 |
| LSL - OH | -0.401 | 2.570 | 1.000 |
| LSL - PO | -8.665 | 2.380 | 0.042 |
| LSL - RB | -2.059 | 3.620 | 1.000 |
| LSL - YO | -7.991 | 3.490 | 0.715 |
| MA - OH | 4.894 | 3.410 | 0.995 |
| MA - PO | -3.370 | 3.230 | 1.000 |
| MA - RB | 3.236 | 4.090 | 1.000 |
| MA - YO | -2.696 | 3.990 | 1.000 |
| OH - PO | -8.264 | 2.670 | 0.186 |
| OH - RB | -1.658 | 3.690 | 1.000 |
| OH - YO | -7.590 | 3.580 | 0.822 |
| PO - RB | 6.606 | 3.340 | 0.893 |
| PO - YO | 0.674 | 3.250 | 1.000 |
| RB - YO | -5.932 | 3.530 | 0.975 |

**Duration of TI x Breed**

Pairwise comparisons (Holm-Bonferroni-adjusted) between breeds of naïve, mature hens (part A) concerning the duration of TI revealed no significant differences (all p > 0.05).

**Attempts to induce TI x Breed**

No pairwise comparisons were conducted as there was no significant impact of breed on the attempts needed to induce TI.