**Supplementary Table S1** Characteristics of skin lesion traits recorded on pigs 24h post-mixing (SL24h) and 3 weeks post-mixing (SL3wk) and behavioural data for all animals included in the statistical analysis

|  |  |  |  |
| --- | --- | --- | --- |
|   | **Original scale** |  | **Transformed scale** |
| ***Trait*** | ***N*** | ***Min-Max*** | ***Mean (SD)*** | ***SK*** | ***K*** |   | ***Mean (SD)*** | ***SK*** | ***K*** |
| Anterior SL24h | 1146 | 0 - 99 | 19.07 (17.35) | 1.37 | 2.27 |  | 2.58 (1.07) | -0.90 | 0.43 |
| Central SL24h | 1146 | 0 - 100 | 10.82 (12.03) | 1.43 | 6.03 |  | 2.06 (1.1) | -0.64 | -0.52 |
| Posterior SL24h | 1146 | 0 - 41 | 3.69 (8.30) | -0.73 | 4.08 |   | 1.36 (1.02) | -0.12 | -1.30 |
| Anterior SL3wk | 1146 | 0 - 63 | 10.40 (5.62) | 1.59 | 8.89 |  | 2.3 (0.56) | -1.15 | 2.66 |
| Central SL3wk | 1146 | 0 - 40 | 10.36 (5.93) | 1.03 | 1.90 |  | 2.28 (0.6) | -0.92 | 1.54 |
| Posterior SL3wk | 1146 | 0 - 30 | 4.53 (3.49) | 1.16 | 2.92 |   | 1.49 (0.71) | -0.52 | -0.34 |
| Number of RA involved with | 1146 | 0 - 56 | 8.43 (7.16) | 1.37 | 3.04 |  | 1.91 (0.9) | -0.60 | -0.35 |
| Proportion of fights won  | 1047 | 0 - 1 | 0.30 (0.25) | 0.54 | -0.27 |  | 0.25 (0.19) | 0.20 | -0.85 |
| Average duration NA and NRA involved (s)  | 1138 | 1 - 250 | 42.70 (27.97) | 2.03 | 8.24 |  | 3.59 (0.64) | -0.39 | 0.46 |
| Duration NRA initiated (s) | 1146 | 0 - 996 | 41.71 (68.81) | 4.64 | 40.72 |  | 2.53 (1.82) | -0.19 | -1.27 |
| Duration NRA received (s) | 1146 | 0 - 444 | 41.47 (46.53) | 2.88 | 13.9 |  | 3.12 (1.34) | -0.88 | 0.36 |
| Duration of RA initiated (s) | 1146 | 0 - 2394 | 289.8 (366.2) | 2.07 | 5.30 |   | 4.3 (2.34) | -0.88 | -0.53 |
| Duration RA received (s) | 1146 | 0 - 2997 | 329.6 (353) | 2.08 | 6.62 |  | 5.1 (1.45) | -1.08 | 1.45 |
| Number of pen mates attacked (RA) | 1146 | 0 - 11 | 2.86 (2.32) | 0.65 | -0.20 |  | 1.14 (0.69) | -0.40 | -0.94 |
| Number of pen mates attacked by (RA) | 1146 | 0 - 9 | 2.86 (2.06) | 0.40 | -0.52 |  | 1.18 (0.63) | -0.59 | -0.66 |
| Number of pen mates attacked (NRA) | 1146 | 0 - 14 | 2.57 (2.69) | 1.32 | 1.54 |  | 1.00 (0.75) | 0.06 | -1.10 |
| Number of pen mates attacked by (NRA) | 1146 | 0 - 9 | 2.57 (1.67) | 0.61 | 0.1 |  | 1.26 (0.45) | -1.64 | 2.39 |
| Number of attacks initiated (RA) | 1146 | 0 - 36 | 4.23 (4.30) | 1.75 | 4.97 |   | 1.32 (0.85) | -0.14 | -0.89 |
| Number of attacked received (RA) | 1146 | 0 - 25 | 4.20 (3.78) | 1.44 | 3.04 |  | 1.37 (0.79) | -0.32 | -0.72 |
| Number of pen mates interacted with | 1146 | 0 - 14 | 6.69 (3.06) | 0.02 | -0.66 |  | 1.94 (0.49) | -1.13 | 1.48 |

RA = reciprocal aggression; NRA = non-reciprocal aggression; SK = skewness; K = kurtosis

**Supplementary Table S2** Comparison of lesion traits and aggressive behavioural traits for all pigs and pigs in the lowest 10th percentile of EBVs for anterior skin lesions recorded 24 hours post mixing (SL24h). Raw mean values for all pigs, mean phenotypic differences (in SD) between all pigs and selected pigs, and expected mean change (in trait units) after selection for SL24h.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **Trait** | **Raw mean of all pigs** | **Mean difference between all and selected pigs in SD (SE)1** | **Expected change after selection2**  |
| SL24h | Anterior (selection trait) | 19.07  | **-0.91 (0.03)** | -15.85 |
|  | Central  | 10.82  | **-0.61 (0.05)** | -7.35 |
|  | Posterior  | 3.69  | **-0.43 (0.07)** | -3.60 |
| SL3wk | Anterior  | 10.40  | -0.06 (0.08) | -0.34 |
|  | Central  | 10.36  | 0.07 (0.10) | 0.43 |
|  | Posterior  | 4.53  | 0.00 (0.07) | 0.01 |
| Behaviour | Number of RA involved with | 8.43  | **-0.63 (0.06)** | -4.51 |
|  | Proportion of fights won | 0.30  | -0.06 (0.14) | -0.01 |
|  | Average duration of NA and NRA involved (s) | 42.70  | **-0.53 (0.06)** | -14.76 |
|  | Duration of NRA initiated (s) | 41.71  | **-0.24 (0.06)** | -16.29 |
|  | Duration of NRA received (s) | 41.47  | **-0.25 (0.07)** | -11.55 |
|  | Duration of RA initiated (s) | 289.80  | **-0.44 (0.06)** | -160.42 |
|  | Duration of RA received (s) | 329.60  | **-0.62 (0.05)** | -217.42 |
|  | Number of pen mates attacked (RA) | 2.86  | **-0.57 (0.08)** | -1.32 |
|  | Number of pigs attacked by (RA) | 2.86  | **-0.74 (0.07)** | -1.52 |
|  | Number of pen mates attacked (NRA) | 2.57 | **-0.28 (0.09)** | -0.76 |
|  | Number of pen mates attacked by (NRA) | 2.57  | **-0.44 (0.11)** | -0.73 |
|  | Total RA initiated | 4.23  | **-0.47 (0.07)** | -2.03 |
|  | Total RA received | 4.20  | **-0.66 (0.06)** | -2.48 |
|  | Number of pen mates interacted with | 6.69  | **-0.60 (0.09)** | -1.83 |

SL24h = skin lesions recorded 24 hours post-mixing; SL3wk = skin lesions recorded 3 weeks post-mixing ; RA = reciprocal aggression; NRA = non-reciprocal aggression

1 Bold font signifies change significantly different from 0

2 Untransformed phenotypes were scaled and standardised (see Table S1) and the corresponding change in SD after selection based on breeding values was used to calculate the expected change in aggressive behaviour.

**Supplementary Table S3**Comparison of lesion traits and aggressive behavioural traits for all pigs and pigs in the highest 10th percentile of EBVs for anterior skin lesions recorded 3 weeks post mixing (SL3wk). Raw mean values for all pigs, mean phenotypic differences (in SD) between all pigs and selected pigs, and expected mean change (in trait units) after selection for SL3wk

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | **Trait** | **Raw mean of all pigs** | **Mean difference between all and selected pigs in SD (SE)1** | **Expected change after selection2**  |
| SL24h | Anterior  | 19.07  | -0.04 (0.08) | -0.76 |
|  | Central  | 10.82  | 0.21 (0.11) | 2.58 |
|  | Posterior  | 3.69  | 0.22 (0.11) | 1.79 |
| SL3wk | Anterior (selection trait) | 10.40  | **1.42 (0.13)** | 7.95 |
|  | Central  | 10.36  | **1.00 (0.12)** | 5.91 |
|  | Posterior  | 4.53  | **0.52 (0.12)** | 1.82 |
| Behaviour | Number of RA involved with | 8.43  | **-0.33 (0.08)** | -2.39 |
|  | Proportion of fights won | 0.30  | **-0.31 (0.09)** | -0.08 |
|  | Average duration of NA and NRA involved (s) | 42.70  | **-0.19 (0.07)** | -5.30 |
|  | Duration of NRA initiated (s) | 41.71  | -0.13 (0.08) | -8.72 |
|  | Duration of NRA received (s) | 41.47  | -0.10 (0.07) | -4.50 |
|  | Duration of RA initiated (s) | 289.80  | **-0.30 (0.07)** | -108.12 |
|  | Duration of RA received (s) | 329.60  | **-0.28 (0.07)** | -98.06 |
|  | Number of pen mates focal pig attacked (RA) | 2.86  | **-0.35 (0.09)** | -0.81 |
|  | Number of pigs attacked by (RA) | 2.86  | **-0.35 (0.08)** | -0.71 |
|  | Number of pen mates attacked (NRA) | 2.57  | **-0.28 (0.08)** | -0.75 |
|  | Number of pen mates attacked by (NRA) | 2.57  | 0.1 (0.09) | 0.17 |
|  | Total RA initiated | 4.23  | **-0.29 (0.08)** | -1.25 |
|  | Total RA received | 4.20  | **-0.3 (0.07)** | -1.14 |
|  | Number of pen mates interacted with | 6.69  | **-0.39 (0.09)** | -1.19 |

SL24h = skin lesions recorded 24 hours post-mixing; SL3wk = skin lesions recorded 3 weeks post-mixing; RA = reciprocal aggression; NRA = non-reciprocal aggression

1 Bold font signifies change significantly different from 0

2 Untransformed phenotypes were scaled and standardised (see Table S1) and the corresponding change in SD after selection based on breeding values was used to calculate the expected change in aggressive behaviour.