**Supplementary Table 1**

Descriptive statistics of carcass performances.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | n | min | max | mean ± s.d. | coef.var |
| Straight length (cm) | 1906 | 85.20 | 111.50 | 96.70 ± 3.71 | 3.84% |
| Oblique length (cm) | 1906 | 70.00 | 99.50 | 86.55 ± 3.45 | 3.98% |
| Thoracic number | 1910 | 14 | 17 | 15.38 ± 0.57 | 3.69% |
| Lumbar number | 1908 | 4 | 7 | 5.80 ± 0.48 | 8.28% |
| Thoracic length (cm) | 1824 | 39.42 | 60.79 | 47.73 ± 2.71 | 5.68% |
| Lumbar length (cm) | 1823 | 13.86 | 28.60 | 22.65 ± 2.03 | 8.98% |
| Backfat of shoulder (cm) | 1910 | 1.10 | 5.50 | 3.00 ± 0.55 | 18.21% |
| Backfat of 6th\_7th rib (cm) | 1910 | 0.70 | 4.00 | 2.31 ± 0.48 | 20.85% |
| Backfat of waist (cm) | 1910 | 0.40 | 3.60 | 1.99 ± 0.46 | 23.28% |
| Backfat of hip (cm) | 1910 | 0.38 | 5.00 | 1.66 ± 0.45 | 27.36% |

s.d. = Standard deviation

coef.var = Coefficient of variation

**Supplementary Table 2**

The carcass performances were affected by carcass weight and sex.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Cuts name | Carcass weight | | | Sex |  | P\_value | |
| High | Middle | Low | Sow | Barrow | Carcass weight | Sex |
| n | 297 | 1209 | 319 | 1099 | 726 | \ | \ |
| Straight length (cm) | 99.79 ± 3.24a | 96.65 ± 3.28b | 94.22 ± 3.28c | 96.73 ± 3.56 | 96.21 ± 3.78 | 4.06E-87 | 9.79E-07 |
| Oblique length (cm) | 90.47 ± 3.14a | 87.87 ± 3.14b | 85.89 ± 3.01c | 87.95 ± 3.20 | 86.91 ± 3.65 | 3.77E-67 | 2.29E-15 |
| Thoracic number | 15.33 ± 0.55a | 15.30 ± 0.56a | 15.28 ± 0.57a | 15.30 ± 0.56 | 15.34 ± 0.56 | 0.48 | 0.55 |
| Lumbar number | 5.87 ± 0.45a | 5.82 ± 0.48ab | 5.76 ± 0.51b | 5.82 ± 0.48 | 5.83 ± 0.48 | 0.02 | 0.73 |
| Thoracic length (cm) | 49.10 ± 2.72a | 47.68 ± 2.63b | 46.65 ± 2.45c | 47.73 ± 2.69 | 47.24 ± 2.74 | 3.22E-29 | 5.51E-08 |
| Lumbar length (cm) | 23.52 ± 1.87a | 22.64 ± 1.98b | 21.88 ± 2.08c | 22.65 ± 2.05 | 22.43 ± 2.01 | 4.72E-23 | 0.01 |
| Backfat of shoulder (cm) | 3.14 ± 0.59a | 2.93 ± 0.51b | 2.76 ± 0.54c | 2.93 ± 0.52 | 3.14 ± 0.56 | 3.43E-18 | 4.66E-08 |
| Backfat of 6th\_7th rib (cm) | 2.53 ± 0.50a | 2.34 ± 0.43b | 2.05 ± 0.43c | 2.32 ± 0.45 | 2.54 ± 0.50 | 6.47E-40 | 2.49E-16 |
| Backfat of waist (cm) | 2.19 ± 0.43a | 2.02 ± 0.43b | 1.68 ± 0.40c | 1.99 ± 0.44 | 2.15 ± 0.46 | 5.92E-49 | 1.29E-08 |
| Backfat of hip (cm) | 1.65 ± 0.44a | 1.43 ± 0.40b | 1.14 ± 0.39c | 1.42 ± 0.42 | 1.62 ± 0.45 | 4.10E-51 | 1.35E-13 |

The data in the table are mean ± standard deviation.

Within each row, containing different letter (a, b, c, d) denote statistical differences between groups (P < 0.05). The P\_value of Carcass weight represents the significance of multiple comparisons, when p <0.05, it means that the difference between groups is significant. The P\_value of Sex represents the significance of the analysis of variance, when p <0.05, it means that the difference between sexes is significant.

**Supplementary T**a**ble 3**

The carcass performances were affected by genotype.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Cuts name | LD | YK | LY | DLY | P\_value |
| n | 240 | 667 | 670 | 248 | \ |
| Straight length (cm) | 98.12 ± 3.55a | 96.33 ± 3.64c | 97.32 ± 3.69b | 96.73 ± 3.69c | 5.40E-11 |
| Oblique length (cm) | 87.48 ± 3.19ab | 86.43 ± 3.40c | 87.07 ± 3.47b | 87.95 ± 3.32a | 3.11E-09 |
| Thoracic number | 15.60 ± 0.51a | 15.26 ± 0.58c | 15.41 ± 0.55b | 15.30 ± 0.56c | 1.82E-15 |
| Lumbar number | 5.89 ± 0.49a | 5.77 ± 0.50b | 5.78 ± 0.46b | 5.82 ± 0.45ab | 0.01 |
| Thoracic length (cm) | 48.04 ± 2.74a | 47.10 ± 2.7b | 47.81 ± 2.66a | 47.73 ± 2.84a | 3.45E-07 |
| Lumbar length (cm) | 22.85 ± 2.14a | 22.49 ± 2.08b | 22.51 ± 2.00b | 22.65 ± 1.92ab | 0.08 |
| Backfat of shoulder (cm) | 2.89 ± 0.59ab | 2.94 ± 0.53a | 2.87 ± 0.54b | 2.93 ± 0.51ab | 0.11 |
| Backfat of 6th\_7th rib (cm) | 2.23 ± 0.48b | 2.19 ± 0.46b | 2.18 ± 0.48b | 2.32 ± 0.45a | 5.32E-04 |
| Backfat of waist (cm) | 1.98 ± 0.44a | 1.89 ± 0.44b | 1.90 ± 0.47b | 1.99 ± 0.43a | 2.63E-03 |
| Backfat of hip (cm) | 1.66 ± 0.46a | 1.61 ± 0.42ab | 1.56 ± 0.46b | 1.42 ± 0.37c | 8.18E-10 |

The data in the table are mean ± standard deviation.

Within each row, containing different letter (a, b, c, d) denote statistical differences between genotypes (P < 0.05). The P\_value represents the significance of multiple comparisons, when p <0.05, it means that the difference between genotypes is significant.

LD = Landrace, YK = Yorkshire, LY = Landrace × Yorkshire, DLY = Duroc × Landrace × Yorkshire.