



Boar Comparison Study
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I would like to present some data on a sire comparison that we conducted in the AVC research barn. We compared 60 pigs bred using semen from Yorkshire, Landrace, and Duroc boars out of the PEI Quality Swine's AI Unit. There were some significant differences between breeds. Please note following results (underlined numbers indicate they are statistically different from the others in that row).

Carcass

| | Yorkshire | Landrace | Duroc |
|-----------------|------------------|-----------------|--------------|
| Index | 110.68 | 111.06 | 111.09 |
| Lean yield (%) | 60.66 | 60.79 | 60.80 |
| Back fat (mm) | 18.60 | 17.81 | 18.17 |
| Loin depth (mm) | 60.75 | <u>57.43</u> | 60.29 |

The carcass data is from all pigs that were between 80 to 95 kg, and had complete probe data.

Growth & Efficiency: 25-111kg

| | Yorkshire | Landrace | Duroc |
|---------------------|------------------|-----------------|--------------|
| Growth rate (g/day) | <u>940</u> | <u>967</u> | <u>1,004</u> |
| Days in barn | <u>90.4</u> | <u>87.9</u> | <u>84.6</u> |
| Lean gain (g/day) | <u>462.34</u> | <u>475.5</u> | <u>494.0</u> |
| % < 80 kg | 9.2 | 21.2 | 1.7 |
| Feed conversion | 2.51 | 2.69 | 2.51 |
| Mortality (%) | 1.6 | 5 | 1.6 |

Pork Quality

| | Yorkshire | Landrace | Duroc |
|-------------|------------------|-----------------|--------------|
| Reflectance | 55.58 | 54.08 | 53.46 |

| | | | |
|-----------------|------|------|------|
| pH | 5.31 | 5.26 | 5.26 |
| Marbling | 1.6 | 2 | 2 |
| Muscle firmness | 2.4 | 2.3 | 2.6 |
| Fat firmness | 2.8 | 2.7 | 2.3 |

Behaviour

| | Yorkshire | Landrace | Duroc |
|-----------------------------|-----------|----------|-------|
| Entry to scale (seconds) | 6.22 | 5.75 | 5.92 |
| Time in scale (seconds) | 9.82 | 8.26 | 9.22 |
| Aggression (bites/pig/week) | 0.374 | 0.316 | 0.178 |

We measured the time it took to load the scale, and how long it took to ultrasound each pig in the scale. These measurements assess how easy it was to herd the pigs into the weigh scale and how quiet they were in the scale. We measured aggression between pigs by counting the number of bites or scratches on the pigs on a weekly basis.

Conclusions

- There was little difference in carcass quality; the only statistical difference was lower loin depth in the Landrace-sired animals. The loin depth was the same for the Landrace-sired pigs in this study as in the 2000 study. It appears the Yorkshire pigs have improved since that time, while the Landrace may have not. Excellent carcass value exists for all breeds.
- The growth of all of the animals was quite good. The Duroc-sired pigs were exceptionally better than the other two breed-sired pigs. This was evident in both growth and the % light pigs. The Landrace pigs had the most uneven growth, with a significantly higher number of light pigs marketed. The growth of the Landrace and Yorkshire-sired animals was similar to the earlier study, and the Duroc pigs were clearly superior to either the Yorkshire or Landrace-sired animals.
- The lean yield of the pigs was the same regardless of sire, however the Duroc pigs achieved it in less time. This means that daily lean deposition rate was higher. This higher lean growth should be considered when designing feed formulations. All three sires had a higher lean disposition rate than indicated in the earlier genetic potential study in 1999. It appears there is continual improvement in lean growth with genotypes used in this study.
- There was no difference in pork quality between any of the breeds. Pork was of good quality regardless of sire used.

- There were behavioural differences noted between the sires. As in the earlier study, the Yorkshire-sired pigs had more lesions of aggression than the Landrace-sired animals. The Duroc-sired pigs had fewer lesions than the other sires, perhaps indicating a lower level of aggression between pen mates.
- We could detect no difference in the scale loading behaviour between any of the breeds, nor could we detect any difference in time it took to ultrasound the pigs once in the scale. It would appear that loading and weighing ease did not differ between the breeds, under the conditions present in our AVC facility.

This study shows that there are differences between boar choices that can have a significant financial impact on commercial producers.