Weaners – what affects their performance?

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Pork CRC
Today’s talk

- Impact of birth weight and weaning weight on lifetime performance

- Summary of relevant Pork CRC experiments in Program 2B:
  - Identifying ‘risk factors’ for poorer performance after weaning
  - Impact of weaning age and creep feed type on whole-of-life performance
  - Impact of weaning weight and diet type/cost on whole-of-life performance

- Practical tips

- Summary
WEANING is a stressful time
Why does this happen?

These weaned pigs are born this way.
What factors influence post-weaning performance?

- Birth weight is an important determinant of post-weaning performance
- Weaning weight is an important determinant of post-weaning performance
- These factors, which are (obviously) linked, also determine WHOLE-OF-LIFE performance
- These factors impact on the bottom line
Birth weight and milk replacer influence lifetime performance

• Wolter and Ellis (2002),

  – 4 groups of pigs,

    • Birth weight: Heavy - 1.8 ± 0.09 kg vs. Light - 1.3 ± 0.07 kg) weight groups
    • +/- Milk replacer: day 3 of lactation to weaning (21 days of age)

  – Pigs weaned at 21 days of age and treated identically until slaughter at 110 kg BW
Birth weight and milk replacer influence pre-wean performance

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<tr>
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<th>Birth weight</th>
<th>Milk replacer</th>
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<tbody>
<tr>
<td></td>
<td>Heavy</td>
<td>Light</td>
</tr>
<tr>
<td>Birth weight, kg</td>
<td>1.8</td>
<td>1.3</td>
</tr>
<tr>
<td>21-day weight, kg</td>
<td>6.6</td>
<td>5.7</td>
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<tr>
<td>ADG, wean-21 d</td>
<td>222</td>
<td>205</td>
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<tr>
<td>kg milk powder / litter</td>
<td>14.3</td>
<td>9.6</td>
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## Birth weight and milk replacer influence performance to slaughter

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<tr>
<td></td>
<td>Heavy</td>
<td>Light</td>
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<tr>
<td>Daily gain, wean to 14 (g)</td>
<td>450</td>
<td>409</td>
</tr>
<tr>
<td>Daily gain, wean-110 kg (kg)</td>
<td>0.85</td>
<td>0.80</td>
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<tr>
<td>Feed intake, wean-110 kg (kg per day)</td>
<td>1.87</td>
<td>1.78</td>
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<tr>
<td>Days, birth to 110 kg</td>
<td>141</td>
<td>148</td>
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One strategy to increase weaning weight is to increase weaning age.
Interactions between weaning age and type of creep diet

- Pork CRC experiment (QAF Meat Industries, Murdoch University, DAFWA)

- Investigated effects of weaning age (22 or 29 days of age) and type of creep diet (simple = cheaper, versus complex = more expensive) on creep feed disappearance and post-weaning performance

- Simple diet = $609 per tonne
- Complex diet = $1,292 per tonne
Creep feed disappearance from day 9 to weaning at either 22 or 29 days of age

(Morrison et al., 2009)
Creep feed ‘intake’ during weaning affects post-weaning growth rate

(Morrison et al., 2009)
Outcomes for the Australian pig industry

• Weaning age had NO effects on whole-of-life performance,
  – Pigs weaned at 29 days were heavier at weaning
  – Pigs weaned at 29 days had better feed:gain to 49 d of age
  – Effects disappeared in grower and finisher periods

• Nature (and cost) of the creep feed age had NO effects on whole-of-life performance,
  – Pigs fed ‘simple’ diet performed better after weaning
  – Inclusion of more digestible and expensive ingredients in weaner diets might be questionable

• Pigs born < 1.2 kg were lighter, grew 9% slower to slaughter, and were fatter (1 mm) at slaughter
Interactions between weaning weight and type of diet after weaning

• Pork CRC experiment (QAF Meat Industries, Murdoch University, DAFWA)

• Investigated effects of:
  1. Weaning weight (< 6.5 kg, 6.5-8.5 kg, > 8.5 kg; all pigs weaned at 27 days);
  2. Weaner diet complexity (high versus low cost);
  3. Male versus female pigs,

on post-weaning and whole-of-life performance

• High cost diet = $1,100 per tonne
• Low cost diet = $670 per tonne
Weaning weight has the MAJOR impact on growth in the grower period.

(Morrison et al., 2009)
Weaning weight and diet SIMILARLY affect growth in the finisher period

(Morrison et al., 2009)
Weaning weight has the MAJOR impact on carcass weight (same age)

(Morrison et al., 2009)
Outcomes for the Australian pig industry

• Pigs offered high-cost diets performed better immediately after weaning, but effects of diet type disappeared over time

• At 123 days post-weaning, weights were 101, 97 and 90 kg for heavy (> 8.5 kg), medium (6.5-8.5 kg) and light (< 6.5 kg) pigs at weaning

• Minimal (no) economic benefit in offering high-cost diets to pigs weighing > 6.5 kg at weaning at 4 weeks of age

• Focus energies on the light-weight pigs at weaning
Summary

• The Pork CRC has identified the major risk factors associated with poorer performance after weaning.

• The Pork CRC has examined the importance of birth weight and weaning weight on whole-of-life performance.

• The Pork CRC has conducted studies into the value of feeding expensive diets after weaning.

• The Pork CRC has identified that light-for-age pigs at weaning should possibly be treated as a separate population.
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