Considerations in nutrition and management tactics for starting weaned pigs especially those challenged with respiratory disease

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Starting pigs is harder today than 20 years ago

• Why?
  – Vaccination programs
  – Health, especially Flu (Cameron will cover)
  – How has genetic selection altered early growth of the pig?
Effect of vaccination* on post-weaning performance

*Vaccinated for PCV2 and *M. hyo*

Adapted from Potter et al., 2012
Creep feeding

• We do not creep feed necessarily to increase weaning weight or to help reduce sow BW loss (Sometimes they do).
• May be more beneficial with larger litters.

• The goal is to
  – Get more eaters earlier
  – Increase ADG and ADFI post-weaning
  – Reduce fall outs and removals
Effect of creep feeding duration on the percent of eaters

You can start creep feeding late and get pigs to eat the feed

Adapted from Sulabo et al., 2007
Madec et al. (1998) concluded that pigs consuming less than 200 g/d of feed within the first 7 d post-weaning were 18-34% more likely to develop diarrhea compared to contemporaries consuming more than 250 g/d or more.
Effect of creep feeding on post-weaning ADG

28 day weaning

<table>
<thead>
<tr>
<th>Feeding regime</th>
<th>ADG, g</th>
</tr>
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<tbody>
<tr>
<td>No Creep</td>
<td>499</td>
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<tr>
<td>Non eaters</td>
<td>491</td>
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<tr>
<td>Eaters</td>
<td>535</td>
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</table>

21 day weaning

<table>
<thead>
<tr>
<th>Feeding regime</th>
<th>ADG, g</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Creep</td>
<td>370</td>
</tr>
<tr>
<td>Non eaters</td>
<td>370</td>
</tr>
<tr>
<td>Eaters</td>
<td>390</td>
</tr>
</tbody>
</table>

Adapted from Bruininx et al., 2002

Adapted from Sulabo et al., 2008
Suggestions for creep feeding

• Last 3-4 days before weaning.
• Doesn’t take much product.
  – 0.3 lb for a litter of 12 per day.
  – Pig mimics sow (Oostindjer, 2011).
• Can add to biosecurity concerns.
  – About one bag per 50 litters.
Weaning age

- Most people sort pigs on arrival by size.
- Would there be benefit to also identify the youngest pigs?

I’ve always wondered about big pigs that fall back after placement.
Effect of weaning age on population weight distribution

Mean BW, lb = 10.9
SD, lb = 1.9

Mean wt, lb = 12.6
SD, lb = 2.3

Mean wt, lb = 14.3
SD, lb = 2.5

Percentage of population

Days of age at weaning

Calculated from Main et al., 2002
Effect of weaning age on % mortality

Main et al., 2002
Benefits of Mat feeding

- Commercial fully slatted WF barn
- 58 pigs per pen
- All pens provided a biodegradable mat with supplemental heat
- Treatments
  - No mat feeding
  - Mat feeding
    - 1.1 lb per feeding
    - 3x daily
    - For first 6-d after weaning

Adapted from Potter et al., 2010
Effect of mat feeding on post-weaning performance

Day 0 to 27 after weaning

Adapted from Potter et al., 2010
Effects of waterer type on Commercial weaned pig ADG and removals

Adapted from Potter et al., 2010
Hydration of the weaned pig

• Access and Availability
  – Adjust waterers to drip to allow pigs to find water source.
  – Alternatives to get more water access
  – Blue 2.
Starter Boat for hydration or gruel feeding

**Benefits:**
- Stackable
- Sturdy
- Portable
- Weight: 8 lbs.

**Cost:**
- $27.50 for the 4-foot size (+Shipping)
- $44.00 for the 8-foot size (+Shipping)

**UP-A-NOTCH**
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NutriQuest
Dietary Calcium

- Excess Ca in starter diets could reduce ADG of the weaned pig.
- Be sure to account for additional limestone used as a carrier in some medications.

0.66% total Ca

Gonzalez Vega et al, 2016
Effect of pelleting on early nursery performance

Adapted from Sawyer et al., 1999

NutriQuest
Feed allocation

- Constraints to consider when calculating feed budgets/pig
  - Truck compartment size.
  - Number of pigs per feed line.
  - Days to fill.
  - Pigs per feeder.
  - Feeder capacity (tube max and work max).
  - Minimum budget targeted for the last pigs placed.
Nursery Feed Budget Example

• Constraints
  – 3 ton = 6,000 lb = 1 truck compartment (3 ton increments for feed orders).
  – 2,200 pigs per feedline.
  – 5 day fill time.
  – Approximately 137.5 pigs per feeder.
  – Feeders hold:
    • 250 lb when filled by the tube (pyramid fill).
    • 305 lb when leveled (feed leveled to top).
  – Minimum feed amount of stage 1 needed by each pig = 3.30 lb
  – 3.30 x 2,200 pigs = 7,260 lb needed, remember not all pigs are on the feedline at the same time.
  – No bagged feed
• 12,000 lb/2,200 pigs = 5.45 lb/pig on average
• How do we insure last pigs placed get their 3.30 lbs?
Example cont.

- **Day 0 to 5**
  - 1,650 (1 semi load of 12.5 lb pigs) arrive on d 0
  - Those pigs are placed on 12 feeders.
  - 250 lb (pyramid fill) per feeder = 3,000 lb placed in feeders (and feed line is running).
  - Pigs will consume approximately 0.30 lb/day.
  - 0.30lb/day x 5 days x 1,650 hd = 2,475 lb consumed
  - 12,000 lb – 3,000 lb – 2,475 lb = 6,525 lb left in the bin.

If we did nothing there is 6,525 lb of feed in the bin. If we fill (pyramid) the last 4 feeders for 550 pigs placed on d 5, then we guarantee every pig receives 2.94 lb/pig (0.36 lb/pig short or 11% short).

But if we fill up the last 4 feeders to full capacity (305 lb/feeder) then we can get an additional 55 lb of feed to the pen and increase allocation to 3.29 lb/pig.
Example Cont. (calculating ADFI past d 5)

<table>
<thead>
<tr>
<th></th>
<th>Number of animals</th>
<th>Percentage</th>
<th>ADFI, lb</th>
<th>Weighted ADFI, lb</th>
</tr>
</thead>
<tbody>
<tr>
<td>First placed (d 0)</td>
<td>1,650</td>
<td>75%</td>
<td>0.80</td>
<td>.600</td>
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<tr>
<td>Last placed (d 5)</td>
<td>550</td>
<td>25%</td>
<td>0.30</td>
<td>.075</td>
</tr>
<tr>
<td>Total</td>
<td>2,200</td>
<td>100%</td>
<td></td>
<td>.675</td>
</tr>
</tbody>
</table>

Weighted ADFI (0.675 lb/d)
Example Cont. (Do nothing, calculating ADFI past d 5)

- The last 550 pigs placed on 4 feeders (pyramid fill).
- (4 feeders) × 250 lb = 1,000 lb.
- Feed left (6,525 lb) – 1,000 lb = 5,525 lb left after filling feeders.
- 5,525 lb divided by total pigs (2,200) = 2.51 lb/pig.
- 2.51 lb/pig divided by weighted ADFI (0.675 lb/d) = 3.72 days.
- 0.30 lb/d × 3.72 days = 1.12 lb + (250 lb divided by 137.5 pigs/feeder) = 2.94 lb/pig for pigs placed on d 5.
Example Cont. (Do something, calculating ADFI past d 5)

- The last 550 pigs placed on 4 feeders (level off feed to max).
- (4 feeders) \( \times \) 305 lb = 1,220 lb.
- Feed left (6,525 lb) – 1,220 lb = 5,305 lb left after filling feeders.
- 5,305 lb divided by total pigs (2,200) = 2.41 lb/pig.
- 2.41 lb/pig divided by weighted ADFI (0.675 lb/d) = 3.57 days.
- 0.30 lb/d \( \times \) 3.57 days = 1.07 lb + (305 lb divided by 137.5 pigs/feeder) = 3.29 lb/pig for pigs placed on d 5.
Yes, you can feed a stage 1 feed too long!

<table>
<thead>
<tr>
<th>Item</th>
<th>Program 1 Stand. Budget</th>
<th>Program 1 Extended Budget</th>
<th>SEM</th>
<th>Probability, ( P ) &lt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>d 0-42</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>ADG</td>
<td>1.06&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.05&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.008</td>
<td>0.79</td>
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<tr>
<td>ADFI</td>
<td>1.38&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.39&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.012</td>
<td>0.87</td>
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<td>FG</td>
<td>1.31&lt;sup&gt;c&lt;/sup&gt;</td>
<td>1.33&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0.004</td>
<td>0.02</td>
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<tr>
<td>Feed Cost/pen,$</td>
<td>260.47</td>
<td>265.21</td>
<td>2.87</td>
<td>0.04</td>
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<td>IOFC/pig, $</td>
<td>23.99</td>
<td>23.49</td>
<td>0.18</td>
<td>0.50</td>
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</table>

* When twice as much stage 1 was fed, it worsened FG.

**Personal Correspondence**
Environmental Temperature
Summary of Considerations

• Creep feeding
• Understand the variation in weaning age, plan of action to identify the young pigs at weaning.
• Work hard to provide plentiful water, clean water access.
• Mat feeding.
• Verify dietary calcium levels.
• Review feed allocation to make sure everyone gets their share.
• Keep your eye on the chicks.
Quotes

• “Knowing the right thing to do isn’t the trick, being able to implement it is.” Dean Dau

• “If you are able to do something your neighbor can’t do, or willing to do something your neighbor won’t do, there is usually some money in it.” Marvin Cast

• “If you keep pigs warm, dry, and out of the draft, they will do ok.” Roy Cast

Thank You

Megan Potter        Mike Brumm        Steve Dritz
Paul Toplis         Pete Wilcock      Hans Stein
Kyle Coble          Josh Flohr