The Importance of Sow Herd Health as it Relates to Pig Flows

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Stable Sow Herd Health = Stable Pig Flow
Two big focus areas:

• Maintaining GILT AND SOW stability at the sow unit

• Maintaining Piglet stability: creating a pig with the best possible immune system for its’ life throughout grow-finish facilities
Maintaining Gilt and Sow Stability

1. Gilt Isolation and Acclimation
2. Sow and gilt health and performance
3. Proper Culling Strategies/Parity Structure/Retention Rates
4. Sow condition throughout gestation and lactation
1. Gilt Isolation and Acclimation

- Always obtain gilts from a consistent, reliable source. Do not change source if at all possible.
- Proper selection coming into isolation and going into the sow unit
- Allow enough time to EXPOSE gilts and then subsequently COOL DOWN.
- Isolation has the ability to acclimate the gilts to prepare to enter the sow herd with similar health status
1. Gilt Isolation and Acclimation

- Testing upon entry to know status
- Vaccinations given for your particular herd
- Feedback Methods for your particular herd
  - Needs to be targeted for the bug load that you see in both the farrowing house and post-weaning
- Testing prior to sow unit entry
1. Gilt Isolation
Proper Square Footage - THIS IS CRITICAL

Maintain proper square footage for ALL stages of isolation:

• Up to 45 lbs, 3.5 sq. ft.

• Up to 240 lbs, 7.5 sq. ft.

• 21 weeks to breeding, 12 - 14 sq. ft.
1. Gilt isolation
Transition into the sow unit

- Make sure all vaccinations have occurred at least 4 weeks prior to entrance/breeding time.
- Once entered into the sow herd, gilts need to be in the sow unit a minimum of 10 days prior to breeding for optimal performance
  - Allows for adequate feed consumption at the time of breeding
2. Gilt and Sow Performance Parameters

- Monitor gilt performance compared to parity sows as an indicator of health/acclimation.
- Farrow rates and total born are also indicators of gilt performance and effectiveness of gilt isolation/acclimation:
  - Gilt farrow rate should mimic parity animals - should be 90% - 92% target.
  - Gilt Total born - 14.5 plus.
- Upward trend of total born through parity 5.
- Evaluate number of rebreeds, farrowing rates, opens and mortality as a parameter of performance and health.
3. Gilt Retention Rates and Parity Structure

- Gilt retention rates - what % of gilts become P3’s on your farm?
  - Target of 75% minimum of gilts maintained to P3
  - This is an indicator of your acclimation program!!
- Herd replacement rates of at least 45-50% dependent on sow death loss
  - Sow mortality should be 6% or less
- Average parity of herd should be approximately 2.8
- Parity spread example:

<table>
<thead>
<tr>
<th>MILESTONE FOR GILTS</th>
<th>% RETAINED</th>
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</thead>
<tbody>
<tr>
<td>First farrowing</td>
<td>&gt;92%</td>
</tr>
<tr>
<td>Second farrowing</td>
<td>&gt;85%</td>
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<tr>
<td>Third farrowing</td>
<td>&gt;75%</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Gilt</th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>P4</th>
<th>P5</th>
<th>P6</th>
<th>P7+</th>
</tr>
</thead>
<tbody>
<tr>
<td>19%</td>
<td>18%</td>
<td>16%</td>
<td>14%</td>
<td>12%</td>
<td>10%</td>
<td>6%</td>
<td>5%</td>
</tr>
</tbody>
</table>
3. Proper Culling Strategies

- Cull correct animals for proper parity structure which allows introduction of gilts on a regular basis.
- You should ask yourself.............What are the reasons you are generally culling animals?
- Make sure to remove animals that may reduce overall sow herd stability and performance.
- Need to identify problem individuals EARLY in order to cull or treat appropriately.
4. Maintain Proper Condition in Gestation

- Helps the sow throughout the farrowing process.
- Maximizes her lactation feed consumption
- Feed heavier the first 30 days of gestation
  - Approximately one pound over maintenance for ideal conditioned females
  - This will create a more viable pig and enhances piglet muscle development
- Get her in ideal body condition by 30-35 days of gestation
- When sow herds are on a “roller-coaster” pattern of condition, there will be an increase in pig flow challenges
Herd Health - Create a Stable Piglet from the Sow

- Identify and know your herd pathogens
  - Sometimes this is not an easy task
  - “Nagging” issues in a sow unit that are not readily diagnosed.
    - Stay persistent!
  - Next Generation Sequence testing now currently available
- Put together the best vaccination and medication program for your specific herd and piglets
- Unfortunately.......... “Health can trump everything”
Create a stable piglet - Basic concepts for the sow

- We want that sow to create a pig with the maximum weight at weaning and maximum immune system at weaning
- Sows in Lactation: Create a cool environment for the sow while lactating and create a proper heating zone for the pigs
- Individual treatment of problem sows to maximize feed intake, and therefore milk production
  - Feet problems - trimming feet/Zinpro
  - Off feeds/mastitis/metritis/lameness

“Colostrum intake: Influence on piglet performance and factors of variation”, Quesnel, et.al.
Colostrum – The Key

• Colostrum contains:
  • Antibodies (immunoglobulins) for the health of the piglet; no antibodies are transferred while in the uterus
  • Highly digestible nutrients and energy which are critical to establish that piglet and to maintain body temperature
  • Natural growth factors for organ development
  • First 6 hours are critical; gut closes around 24 hours
  • 12 hours after birth it can only absorb 25% of the antibodies

• Can each sow produce enough for all her pigs?
  • Today’s Born Alive numbers
  • Studies have shown she can produce about 3 - 4 liters of colostrum
  • Some sows will not produce enough and some piglets will not consume enough

• Each pig needs a MINIMUM of 200 grams of colostrum; ideally at least 250 plus grams

“Colostrum intake: Influence on piglet performance and factors of variation”, Quesnel et al.
Colostrum Intake

“Failure of piglets to achieve an adequate intake of colostrum is the underlying cause for the majority of piglet deaths occurring within the first days of post-natal life”

Source: “Colostrum intake: Influence on piglet performance and factors of variation”, Quesnel, et.al.

<table>
<thead>
<tr>
<th>Colostrum Intake</th>
<th>Pre-Weaning Mortality Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 200 grams</td>
<td>43.4%</td>
</tr>
<tr>
<td>&gt;200 grams</td>
<td>7.1%</td>
</tr>
</tbody>
</table>

Source: “The importance of colostrum intake”, Wennberg
Maximizing Colostrum Production and Intake

• Maximize Colostrum Intake:
  • Stable Health Status of sows and gilts
  • Proper Condition of sows and gilts
  • Increase the ability of piglets to suckle - drying and warming pigs
  • Sows with heavy litters at birth with little weight variation within the litter are ideal colostrum producers.
  • How to reduce birth weight variation within a litter?
    • Maintaining good body condition of the sow during gestation and at farrowing will reduce within-litter birth weight variation
  • Genetic selection/differences
  • Nutrition - research - especially looking at mammary development during the prepuberal period and the last days of pregnancy
  • NEEDS FURTHER ATTENTION AND RESEARCH
Split Suckling - Maximize colostrum intake

• Split suckling can increase the chance that each pig receives its’ allocation of colostrum
• Allows low or intermediate birth weight pigs the opportunity to consume more colostrum
  • Low or intermediate birth weight pigs are more dependent on colostrum intake than high birth weight pigs to ensure their survival*
• Accomplish this through isolating larger pigs in some “box/container” under a lamp for approximately 60 - 90 minutes
• Leave enough small or intermediate pigs out to stimulate the udder; preferably no less than 7

*Source: “Effect of birth weight and colostrum intake on mortality and performance of piglets after cross-fostering in sows of different parities”
McRebel/Cross Fostering

• DISCLAIMER COMMENTS
• “McRebel” definition (traditional) = Management Changes to Reduce Exposure to Bacteria to Eliminate Losses
• “Modified McRebel” programs - TODAY
  • Viral Benefits also - much research has been done, especially with PRRS virus
• “BASIC IDEAL PROGRAM”:
  • Allow piglet time with biological mother for colostrum consumption
  • Size up around 24 hours according to her number of assessed viable teats, and previous weaned number of pigs on record
  • Make sure gilts are sized up to their number of functional teats
  • Depending on herd health needs, a nurse sow at approximately 5-8 days if needed
Limiting Cross Fostering - Potential Benefits

- Research performed in 2011 provides evidence that cross-fostering affects the transfer of immunity from sows to piglets through colostrum. (2)
- This work was done with Mycoplasma hyopneumoniae on gilts
- Adequate time spent with the biological dam BEFORE cross-fostering is critical for the transfer of immune components.
- Research shows cross-fostering should be done after a minimum of 12 hours to ensure transfer of immune cells from the biological dam
- Make sure as many pigs as possible have ingested colostrum from their biological dam
- Limiting cross fostering has been shown to have significant positive impacts on pig growth throughout the nursery WITHOUT adversely affecting survival rates (1)
  - Illustration: In a study with REPEATED cross-fostering every 3 days, there was a 13% improvement in weaning weights for nonfostered vs. fostered pigs

Sources:
2. “Effect of cross-fostering on transfer of maternal immunity to Mycoplasma hyopneumoniae to piglets”, Bandrick, et.al.
Which pigs already start at a disadvantage?

- Piglets taking more than 5 minutes to stand
- Piglets with “cyanotic” skin/blue skin
- Piglets with broken umbilical cords
- Later birth order (>9)
- Low Birth weight (<2.8 #)
- Low and high blood glucose (either extreme)
- FEMALE piglets have higher odds of a low weaning weight if they weigh less than 3.4# at birth and have low temperature 24 hours post-farrowing.

Source: “Newborn piglet traits associated with survival and growth performance until weaning”, Panzardi, et.al.
Maintaining Piglet Health throughout lactation

• Injections and vaccinations need to be tailored to your herd’s specific needs
• Never underestimate the management side of how we process and castrate pigs in terms of cleanliness and procedures
• Docking of tails - needs to be CONSISTENT and proper length
• One needle per litter
• Daily cleaning of equipment
• Replacing equipment regularly
• Helps reduce transfer of viral and bacterial pathogens
Developing Proper Weaning Strategies

- Proper vaccinations
- Antibiotic Injections for your specific herd needs
- Pig handling to minimize stress from the time of weaning off the sow to arrival at grow-finish facility

*Do NOT underestimate how stressful this time is for the pig*
Final comments:

- Everything we do to a sow throughout her gestation and lactation DIRECTLY affects her pigs.
- Evaluate any grow-finish health problems you have, and see if it is a problem that can be fixed back at the sow unit level.
- Management/personnel is critical of course
- This is not to tell you how to size up or cross-foster; that depends on your system, farrowing house, health status, born alive, protocols, etc.
Thank you.

“Animals are unpredictable things, and so our life is unpredictable.”

James Herriot