



The Farrowing Room Management session packed the house at BPS 2017.

Loading the sow should typically occur at 110 days of gestation, allowing her time to adapt to her environment while minimizing stress to both her and the unborn piglets. As always, the goal is to positively impact health, welfare, growth and production outcomes for piglets and weaned pigs.

Farrowing, Fostering and Day 1 Critical Care

As natural as the birth process is, minimizing pre-weaning mortality in farrowing involves many challenges: Parturition, environmental, sow and colostrum management, as well as fostering programs, all impact outcomes. Consequently, Day 1 Critical Care programs have become an integral part of farrowing room management and a key strategy to minimize mortality during the highest risk period, which is the first four days during and following farrowing.

The environment of the farrowing room must address the differing needs of the sow and piglets, so close observation of the animals is critical to fully understand what they're experiencing. Temperature, humidity and air movement are all factors when establishing climate based protocols.

As colostrum quality and quantity both impact survival, this is another key area

to manage. In general, birth order impacts the quantity and quality of colostrum intake. Because time at nipple and colostrum quality decrease as birth order increases, being one of the first seven born greatly increases a piglet's chance of survival. Individual monitoring of colostrum intake through management of split suckling, stomach tubing and time based identification are the best tools for managing colostrum intake and survivability.

Keep in mind too that not all colostrum is equal. Colostrum from a piglet's own mother is always superior to that of another sow as it allows piglets to absorb more immune cells. This is an important consideration in planning cross-fostering protocols.

Day 1 Critical Care

This is as much about observation and stockmanship as anything else. Day 1 Critical Care starts with ensuring the piglet is born into a favorable environment. You must quickly identify piglets that are at risk of falling back and any factors with the farrowing room and crate that may negatively impact the piglets.

The sow should be observed to ensure she has enough teats and that they are of a size that will allow for ease of suckling. When the piglets are born, warming and drying them is the first priority followed closely by minimizing the time to the first suckle. The warmer we can keep the piglets, the less energy they must expend to keep warm and the more they can use to suckle.

Time between piglet births is another important factor. The longer the interval, the more stress they have probably suffered and the more likely they are to be born weak and unable to suckle. More than 30 minutes should alert the team to

closely monitor the sow. Cross-fostering to balance litter size and ensure access to teats should occur after proper colostrum intake and within 24 hours of birth.

As part of the process, starve-out piglets who are suffering from malnourishment require immediate attention. They should be individually examined for sickness, anemia, and the state of their teeth, gums, navel, tail, injection sites and castration incision. Leaving one crate empty within a farrowing room is a common approach to starting foster litters within the first three or four days of life. These piglets need proper nutrition and treatment before being placed with a carefully selected nurse sow in a warm, dry environment. Note that starve-outs can occur anytime in the lactation period and regardless of age.

Nursing, Rapid Growth and Weaning Preparation

Success during lactation starts with the selection of a quality replacement gilt. Body confirmation and the number of functional teats are important qualities to pursue during gilt selection, with 14 as the minimal teat target. Increased weight gain of the gilts translates to increased litter weaning weight. In that regard, the 300 lb second heat rule is often cited as a minimum breeding target to ensure longevity and potentially higher milk yields. Increased weaning weight is also positively correlated to shorter days to market, while longer lactation periods are linked to increased weaning weights, producing a more robust pig that will gain better.

Creep feeding is a common intervention associated with increased litter size and increased lactation length. Although it does not affect pre-weaning performance, creep feeding can improve post-weaning outcomes by elevating the number of pigs classified as "eaters" at weaning.

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Successful farrowing room management requires expertise in individual animal care, proper environmental and population management and team dedication. Weaning the highest quality pigs greatly increases post-weaning success by minimizing factors that reduce health, growth and efficiency. It requires round-the-clock care and attention, but the payoff is much greater than free Slurpees.

Part two: Determinants of lactation success in primiparous sows

If you ever play ag trivia with your friends, the question is bound to arise as to what dictates the gilt remaining in the herd or being culled. Thanks to Nathalie Trottier, Associate Professor in Michigan State University's Department of Animal Science, you now have the answer: the outcome of the first lactation. Culling of gilts following a poor first lactation represents an economic drain for producers; conversely, preparing

the gilt for a successful first lactation will benefit lactation performance in subsequent parities and thus your bottom line.

According to Trottier, there are several determinants of a successful first lactation.

Maximizing feed intake during lactation

A number of factors impact the gilt's voluntary feed intake during lactation. For example, the over-conditioned gilt has a lower voluntary daily feed intake, especially during the first week of lactation. In many mammals, hyperphagia and building fat storage during the gestation period is an essential evolutionary mechanism associated with a reduction in appetite near parturition and several days postpartum that leads to prioritizing nursing over eating. In confinement systems, however, the over-conditioned gilt coupled with limited mobility during gestation is far more susceptible to dystocia (difficult and extended length of farrowing) associated with lower feed intake in lactation and higher rates of piglet mortality at birth and in early lactation.

Setting body condition goals for gilts entering the breeding herd and monitoring body condition during the gestation period will optimize feed intake for lactation. The most effective monitoring method is to weigh or tape them and to measure backfat thickness during gestation. Feed intake in gestation should be restricted to meet the amino acid and energy demand associated with products of conception and mammary tissue growth, and to maintain a body condition score. In production settings where gilts are housed in gestation stalls it is advisable to feed several times a day to encourage them to stand up.

Increase fiber intake during gestation

In addition to restricting caloric intake during gestation, a greater concentration of crude fiber in the diet offers several benefits. Apart from increasing gut fill and controlling satiety during gestation, increasing crude fiber from 3.8 per cent to 7 per cent decreases the rate of constipation by up to 75 per cent. Increasing bowel movement is important in gilts because long transit of fecal matter through the large intestine is associated with an increased risk for bacterial endotoxin production. It has been suggested that circulating endotoxins may interfere with the secretion of prolactin, the hormone needed to initiate and maintain lactation in swine.

Increase feeding frequency during lactation

Feeding gilts three to four times per day during lactation with smaller quantities of feed will stimulate feed intake and encourage gilts to stand up compared to feeding twice per day. Frequent feedings also decrease feed spoilage. If economics allow, replace hand-fed feeders with ad lib or self-feeders.

Thus teat injury may prevent nursing of an otherwise well-developed, functional gland. These injuries can be reduced with proper flooring, hind hoof claw trimming and delayed teeth clipping.

Stimulating mammary cellular activity and growth

The mammary glands begin growing at an increasing rate around mid-gestation (approximately day 60). At the end of gestation, mammary tissue contains just over 600 grams of protein, nearly half as much as the protein content of a 12 piglet litter at birth.

Maximizing mammary gland use

Research suggests that glands which are suckled in a first lactation have enhanced productivity in the next lactation compared with glands that are not suckled. This suggests a sound biological reason for adding one or two piglets to an existing litter to maximize the use of functional glands by cross-fostering from another gilt or sow.

Dealing with contamination

One factor that impacts lactation in gilts more than in sows is ergot contamination of grains like barley, rye, wheat and oats used in lactation diets in some regions. There are different ergot alkaloid compounds depending on the grain, but they all inhibit prolactin secretion which depresses milk yield.

There may be a lot involved in producing a successful first lactation, but there's also much to be gained: happier hogs, a better bottom line and an edge in the next round of ag trivia. ■

Increase length of lactation period

As weaning age has increased, sows naturally have a longer lactation period which tends to optimize socialization and positive behavioral development. Extending the lactation period contributes to increasing stomach volume and helps restore body fat and protein lost during lactation.

Maximizing mammary gland use

Milk secretion pattern and the dam and progeny interaction is unique to the sow. Each mammary gland and teat cistern is relatively small, and glands must be emptied every 50-70 minutes by the piglets to optimize milk production. Fortunately, piglets are programmed to nurse every hour following transition from colostrum to milk. Nursing of all of the available functional glands is crucial to stimulate mammary growth during the first lactation.

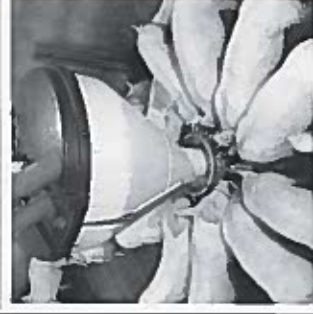
Selecting for udder conformation

Dairy producers have long recognized the importance of udder conformation for milk yield. In pigs, the current thinking is that the sow udder should be equipped with 14 or 16 equidistant, well-defined, functional teats with no inverted nipples.

Preventing teat injury

Unlike other livestock species, for pigs each gland will eventually belong to a single piglet. Consequently, for each malfunctioning teat, one piglet is left out since they tend to nurse one particular gland. Within 72 hours of farrowing, un-suckled glands are noticeably reduced in size and by mid-lactation, glands involute completely.

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