

BREAKOUT SESSION 5: Benchmarks of Excellent Production

By Geoff Geddes

Part one: Gilt Development - Setting up the Breeding Herd

When it comes to laying on the guilt, many parents and spouses have it down to a science. Gilt development, on the other hand, is a bit more involved. Fortunately, Dr. Rob Knox was up to the challenge. As a professor in the Department of Animal Sciences at the University of Illinois and a swine extension specialist, Dr. Knox is well-equipped to discuss proper gilt development and its importance for producers.

Since sow longevity leads to greater fertility, immune status and mothering ability, a lot of research has looked at the link between sow longevity and gilt maturity at breeding. Focusing on fast growth and backfat when selecting gilts can lead to overweight gilts at breeding and require feeding strategies to limit over-conditioning. Since culling once a gilt enters the breeding herd is associated with low litter size, failure to conceive and structural problems, proper gilt development is likely the best way to ensure that gilts remain in the herd to meet their full potential.

As part of this process, there are several factors to consider.

Health

High productivity in the breeding herd requires health stability and freedom from certain pathogens. Since new animals pose the greatest risk of disease introduction, strategies like limiting gilt entry frequency, health testing the source herd, biosecurity and allowing sufficient time for isolation and acclimation may be necessary. Often, you'll find that the longer the acclimation period the better (eg. 40 days for PRRS).

Selection

Gilt selection for longevity can involve a number of factors. For example, housing effects of a dam in gestation and number of pigs nursing may affect gilt fertility and lifetime productivity. Gilt selection can occur at different stages and include selection for dam traits such as number of pigs born alive, birthweight, age at puberty, vulva swelling and parity.

Housing and environment

Effects of housing and rearing environment on gilt fertility and longevity are unclear and their interaction with genetics and health are complex. Relevant factors may include animal space, number per pen, type of feeding system, lighting, temperature, air quality, housing system, season and climate. Studies suggest that controlling group size and floor space at certain times may improve lifetime fertility.

Diet and feeding for growth and development

As part of gilt development, feeding is usually done on an ad libitum basis until puberty. Since differences in growth rate within groups mean some will achieve mature body weight and condition faster, some way of limiting growth by restricting feed access may be needed to avoid gilts being far above the desired weight and condition at time of breeding and farrowing. A number of studies have examined the options for limiting growth. It appears that energy restriction in late development is needed for fast growing gilts and, if applied properly, should have few long term consequences.

Puberty induction

Average age for the start of puberty induction is 140-180 days, and is usually accomplished by relocating gilts to an exposure pen with 6-50 gilts per pen. Factors affecting the response of gilts to boar exposure include age at start of exposure, regrouping and boar-to-gilt ratio. In general, exposure will induce 70-90% of gilts within a specific period of time.

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Gilt development can be a long, complex process. But given the impact on producers and their business, this is one gilt trip that's well worth taking.

Part two: Achieving High Productivity in Group Housed Sows

Whoever said there's safety in numbers has never run with the bulls in Pamplona. But with increasing pressure from activist groups in recent years and revisions to the Code of Practice for the Care and Handling of Pigs, many processors now require producers to use group housing for sows rather than individual stalls. That begs the question: How do you make the change from stalls to group housing while still achieving high productivity? Fortunately, Dr. Larry Coleman, who has run a private veterinary practice in Nebraska since 1987 working mainly with swine clients, and Tim Friedel, the general manger for Thomas Livestock, have some timely answers.

The issue of whether stalls or pens are more humane is a controversial one with compelling arguments on both sides. Now that group housing is becoming the norm, that question is largely a moot point. Yet the pen system poses a number of challenges for producers. As the veterinarian for a production system in 2012 that was looking to expand, Dr. Coleman encountered several problems with group housing, and the way he confronted them may inform other producers looking at expansion or conversion of their operation.

Inaccurate feeding

Since individual feeding of sows is difficult when they have access to others sows' feed, Coleman and his team opted for electronic sow feeding (ESF), which can feed sows or gilts according to their needs. Whereas the only option for varying nutritional allotments with individually installed housing is to vary the amount of the single ration each female receives, ESF allows you to feed a combination of rations to any one female. In addition, ESF stations can weigh each sow daily and producers can use this information to determine the ideal weight gain curve for each sow during her gestational period.

Social stress

It sounds like what we experience making small talk at a party, but it can have a big impact on pig health and pork

quality. That's why Coleman addressed it on a number of fronts:

1. **Group size:** Since sows can remember a pecking order of up to 100 animals, Coleman opted for a design which included about 270 females per group, abolishing that pecking order and the stress that can accompany it.

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