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Productivity of modern group housing systems

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Introduction

Dr. Tim Blackwell challenged all of us at last year's AASV meeting, telling us that sow gestation pens are coming and that we should "face up to it, get on with it, and go out and try to figure out what works best for the owner, the pig, and the pocketbook." I think he thought we were fighting it without even giving today's pen systems a look. I'm old enough that, when I looked at his pictures of pen gestation, my thoughts were "been there, done that." The barns he showed could have been from our practice. The evolution of sow housing in the Midwest during the 1970s and 1980s resulted in most of the successful farrow-to-finish farms making their growers and finishers into pen gestation when they expanded to multi-site systems.

Dr. Blackwell's talk was quite a challenge and drew a lot of "hallway conversation" about why pen gestation won't work. In further discussion with Dr. Blackwell, he informed me that it was truly gestation, not breeding/gestation. Sows are kept in crates until preg-check (35-40 day). I believe that's workable.

Why did we go to crates?

We certainly did not go to crates because we wanted to spend more money and have more work, but rather for the following reasons:

- Sows fight too much in pens post-weaning and injure themselves. Some of these injuries are serious enough to cause death or the need to be destroyed.
- It can be difficult to feed. Big sows "hog" the feed to the detriment of smaller, more timid animals. Vulva biting, examining sows, heat checking, and sorting for breeding are all more challenging in pen situations.
- Riding and "rough-housing" occurring around the time of heat and breeding leads to:
  - Lower conception rates
  - Lower total born
  - The possibility of injuries to animals; this can be a major concern for marginally lame animals.
  - Injuries to the udder post-weaning
- When breeding groups are assembled, there is often similar fighting which causes the above mentioned deleterious effects.
- If groups have poor conception, you pull the animal and can't replace her because of mixing/fighting concerns. Pens are either overfilled to compensate for fallout, or underutilized. Both of these scenarios lead to very poor barn/space utilization when conception is poor. Some situations that can also dramatically affect barn utilization include:
  - PRRS
  - Seasonal infertility
  - New farm personnel
- Gilts can experience the same problems when:
  - Penned upon arrival into the farm
  - Penned when brought from isolation into breeding/gestation
  - Penned post breeding

This leads to poor gilt retention and results in poor herd parity structure and, subsequently, the potential for decreased productivity.

- As better-milking sows began to dominate the industry, it became more difficult to get weight back on skinny sows which caused the group to separate into animals that were too fat and those that were too skinny—neither of which is good.
  - Injuries
  - Destroys
  - Deaths
  - Poor conception
  - Lower total-born
  - Poor barn utilization
  - Unacceptable sow condition

There had to be a better way; crates were the solution. Today, people concerned with animal welfare say there

are basic needs that must be fulfilled. Their definition of welfare is providing an environment that is free of:

- Hunger
- Thirst
- Pain
- Injury
- Disease
- Fear
- Distress

Today's modern crated facilities and professional management provide excellent welfare for the sow:

- Environmentally controlled barns
  - Heaters
  - Cool cells
  - Computer controlled minimums to protect against cold stress and provide minimum daily high/low variation
- Regular assessment of individual body condition and precise drop-feed settings
- Regulated/metered water throughout the day
- Individual housing to reduce stress and fighting that leads to injuries
- Daily observation of each individual animal to look for problems with a particular sow

Where do we go in the future?

I don't disagree that sow death loss has gotten worse in many instances since the move to gestation crates, and that sow condition is not always like "peas in a pod." So what can we take home? What should we consider with every client's next round of remodeling or expansion? I believe that pen gestation can work as *gestation* (> 35-40 days). This will satisfy the EU and most people concerned with animal welfare. When surveying our practice and eight veterinarians, we came up with approximately 20,000 sows presently doing this in a variety of pen configurations.

Facts, guidelines, and observations on pen gestation

- It can work.
- In well managed farms, fallout > 35 days is no different than in crates.
- Make sure animals are pregnant when you pen them to prevent barn utilization from becoming a problem. The 21-day heat check, preg-check, and optional 42-day heat check must all be done timely and accurately.
- Larger farms have been more successful. With more animals per breeding group, sizing within groups can be done more easily, which facilitates accurate feeding and proper sow conditioning.
- The number of sows per pen can also be a factor, with larger group sizes seeming to be less stressful.
- Floor feeding is critical to keeping partial slatted pens clean. There must be a good distribution of the feed in order for this to work.
- Feeding can be done once/day, twice/day, or even every other day. We see all of these scenarios and all can be successful.
- Feeding on the floor with sows walking around the pen should provide excellent feedback, but piglet scours can still occur.
- Old, rough floors in older buildings can be very difficult on sows' feet.
- We generally prefer cool-celled barns, and it's often more difficult to design barn layouts for pens and cool cells. It is especially difficult to retrofit some barns.
- Pens obviously work better for healthy sows.
  - PRRS with late-term abortions challenge flow and barn utilization.
  - The following other abortifactants can cause problems with flow:

– Seasonal infertility

– Moldy feed

– Leptospirosis

- Vaccinating and preg-checking are easily done in pens if animals are fed along the fence in 75% of the space normally used to feed.
- Group/pen size has not seemed to make much difference for pregnancy rates. However, this can/does make a difference for one's ability to sort by size and properly condition animals.
- Square footage: We normally start groups at 17-20 ft^2., depending on pen layout and the size/parity of sows.
- Pens require at least two moves and one mix, whereas the majority of crated systems that snake the entire breeding/gestation barn move only one time, or two times if a sow is not pregnant at first check.
- We have had three clients with transponder feeding stations in their pen gestation. All experienced maintenance and operational problems. The price of these

systems was always close to crated barns, so we always recommended crates.

Summary

Some of our producers are making pen gestation work successfully for animals > 35-40 days. We are designing and plan to build some new gestation barns, since nearly all pen gestation barns that we have in existence today are older or were remodeled finishers. These new barns will be added to existing farms as they expand (converting present breeding/gestation barns to breeding barns, and constructing new pen gestation barns).