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## FarmAnimalCare

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**Research shows switching from stalls to pen gestation can work**

*System design needs to be matched to the needs of the individual farm or farm system, says Tom Parsons*

**Posted: August 22, 2013**

Faced with increasing pressure from consumers and retailers more pork producers are considering a switch from stalls to pens.

Those producers have two main questions. Can they achieve the same production efficiency with pen gestation? And what are the best options to make sure they "have it right this time" in terms of acceptable housing systems?

No question that transition can leave pork producers in uncharted territory says Dr. Tom Parsons, a researcher at the University of Pennsylvania School of Veterinary Medicine and industry leader studying the industry switch to pens.

"We have found a pen system that we know will work for some people," Parsons says. "I don't know that it's optimal, just that we've found a way to make it work. We need to be able to look at these things in a more systematic way to give producers better information about their choices.

"For better or for worse, the change that we're going through is not being driven by science but by the emotions of some consumers and by the ethical concerns of those that sell the pork to those consumers. In the end, I think this will be about pork producers matching their product offerings to what people who will buy and/or consume their pork think they want or need."

**Helping producers switch**

Over a decade ago, based on changes to gestational housing occurring in Europe, the University of Pennsylvania started a research herd of 100 gestational sows housed in pens using electronic sow feeding (ESF) technology. To date, they've helped about 40 farms, ranging in size from 100 to 10,000 sows in 12 different states, make the switch from stalls to pen gestation using ESF.

Currently, research at the university includes using feeding technology, mixing strategies to reduce aggression and improve animal care in the pen system and studying behavioral attributes of sows to determine the type of animal most likely to be successful in pens.

Here's a snapshot of what they've learned so far.



**Feeder design.** The electronic sow feeder must be reliable and durable to ensure that every sow is feeding every day, because when the feeder is not working sows are not eating. The feeder needs to be well-engineered in order for the ESF system to withstand both the harshness of the barn environment and daily rigors of feeding a large sow herd.

**Pen design.** To ease challenges associated with aggression and the establishment of a social hierarchy, a rectangular-shaped pen works best. A dominant sow will only chase a timid one for about 20 to 30 feet, so that shape allows a timid animal room to escape. It also facilitates barn workers observing animals.

**Static versus dynamic groups.** If the farm is sufficiently large enough, animals are bred in a short enough time window (one week or less) to readily fill a pen in one shot and fully utilize the capacity of feeding stations. In static pens, social hierarchy is established once and animals will stay together as a group during gestation.



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"Smaller farms don't breed enough animals each week to fully utilize the single station and utilize static pens. Their flow is dynamic as a small number of bred animals are put in each week and a small number of animals taken out to go farrowing," says Parsons.

These dynamic flow systems work better when there is a larger number of sows in the pen as the social hierarchy is less rigorous and thus it is less disruptive when animals are added or removed.

**Training barn staff.** Well trained barn staff are key to successful pen gestation. In a stall barn, tracking individual animals is easier than in pens as animals are always in the same location for observation. Staff training for pens focuses on achieving the same level of individual care in a pen as in a stall. The task must be broken down into its smaller components, such as understanding animal behavior and learning how to identify, locate and focus on specific animals that require attention. As well, workers need to learn how to manage the ESF technology.

"People is where we've seen the biggest amount of variability across farms which made the switch," Parsons says. "The physical plans of these farms are not identical but systems are fairly similar. We've seen a spectrum of results, and usually it's related to how well and how quickly the barn staff has adapted to change."

#### **Further studies needed**

Even though Canadian pork producers are actively participating in the development of Codes of Practice, Parsons says the industry would benefit from further studies on larger farms, including how various systems can impact economics, productivity, animal welfare and worker safety and training of an operation.

"We don't have good comparative information to give to farmers on different systems that have been looked at in a controlled way," Parsons says. "I think farmers would have more confidence with some of these issues if we could go ahead and give them better information on comparisons."

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