



## Pigs in Space

By Geoff Geddes, for Swine Innovation Porc

While the Muppet sketch “Pigs in Space” was full of humor, improper space allowance for pigs is no laughing matter. In fact, few aspects of a pork operation impact so many areas, including behavior, stress, social interaction and productivity. So it’s surprising that little research has been done on the effects of space allowance on nursery pigs. Fortunately, that void is now being filled by the project *Determining the optimum space allowance for nursery pigs*.

“This study was sparked by the recently revised ‘Code of Practice for the Care and Handling of Pigs,’” said Dr. Jennifer Brown, Research Scientist - Ethology at the Prairie Swine Centre.

Though a lot of good data exists on the impact of space allowance on grower-finisher pigs, the same can’t be said for weaners.

### Knowing your limits

“Conventional production gives weaners less space than grower-finishers based on body size, but is that adequate or should it be changed? The code assigns the same k factor to both; however, the wider allowance at the end of the nursery phase means that weaners can be crowded a bit more. We wanted to get additional science around this question to determine if the limits in the code are good or need to be changed.”

The study examined six different space allowances for nursery pigs and was performed in two phases: phase 1 at a research barn and phase 2 at two commercial farm sites. Data

was collected on productivity, piglet postures, injury and room climate.

### A tale of two phases

For phase I, the effects of space allowance were compared in large and small pen group sizes (10 and 40 pigs per pen) over four seasons. Additional data on piglet stress physiology and immune competence were also collected.

“Phase 1 showed no impact of different space allowances on average daily gain (ADG), but there was an effect on pig behavior. Most notably, pigs spent more time sitting at lower space allowances. That behavior is not common for pigs and is thought to indicate stress. Many studies suggest sitting shows discomfort and a feeling of being crowded, thereby impairing animal welfare.”



Aerial view of piglets. Photo: Prairie Swine Centre

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- DR. JENNIFER BROWN, PRAIRIE SWINE CENTRE

The clearest impact of crowding in phase 1 appeared in week 5 in the nursery.

### The underlying importance of overlying

“Part of the reason we thought nursery pigs could cope with less space compared with older pigs is that they tend to overlie. Over time, however, that overlying behavior dropped off so that in week 5, pigs that were given the highest space allowance did very little overlying. That suggests that overlying is not their preferred posture in the late nursery phase and that greater space allowance allows more normal behavior.”

While phase 2 (commercial farms) studies showed similar consequences for behavior, it also showed clear effects of space allowance on ADG. Pigs given the highest space allowance exhibited the best ADG, and pigs at the lower space allowances had lower gains, especially from the midpoint of their time in the nursery until they exited.

“Preliminary results from phase 2 suggest that the space allowance of  $k = 0.0335$ , as specified in the 2014 Code of Practice for the Care and Handling of Pigs, is reasonable. Overall, our findings indicate that the code is on track and if you have a lower space allowance than

the code designates, you should look closely at your operation to ensure pigs aren’t crowded or kept in the nursery longer than necessary. Otherwise, you can expect reduced gains, behavior problems and animal welfare issues with nursery pigs.”

Final results will be available later this year when all analyses are compiled. Still, it seems safe to conclude that while “Pigs in Space” is good for a chuckle, the impact of optimal space allowance on your pigs and your profits will leave you grinning from ear to ear.

### Learn more...

For more information about the work described in this article, please contact Dr. Jennifer Brown [jennifer.brown@usask.ca](mailto:jennifer.brown@usask.ca)

You may find additional resources related to the project *Determining the optimum space allowance for nursery pigs* by consulting our website:

[www.swineinnovationporc.ca/research-animal-welfare](http://www.swineinnovationporc.ca/research-animal-welfare)

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