

# Moving forward with improved sow housing: Current progress and prospects



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“I’m the new Jen, the name doesn’t even change!” joked Jen-Yun Chou, the new ethology and welfare research scientist at Prairie Swine Centre, as she introduced herself to the crowd at the 2024 PSC Producer Meetings. Jen started her work at PSC in February of this year and succeeds Jennifer Brown who retired last year. As the Producer Meetings was the first opportunity for Jen to introduce herself and her work

to Canadian producers, she gave an overview of her previous research focus and travels through the pig world, including research on sow housing and environmental enrichment.

Jen started her presentation with a definition of animal welfare based on the five domains model, which shows that good animal welfare is the culmination of a good environment, good nutrition, good health, and the ability to perform natural behaviours, all of which result in an animal with a good mental state. The mental state is sometimes overlooked but is very important as it connects all the basic needs of the animal. Jen was born and raised in Taiwan, a small island with a large human population. The pork industry is the number one

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livestock industry on the island. Jen originally started her career in the social sciences. She then started working for a NGO that was the first one to address the importance of farm animal welfare in Taiwan, where she translated European research on sow stalls. She enjoyed the field of pig welfare so much that she moved to Edinburgh for a MSc on sow enrichment. She continued her education with a PhD at the University of Edinburgh and Teagasc in Ireland, where she looked at tail biting. She followed that up with a post-doctoral fellowship at the University of Pennsylvania, where she researched sow housing, and then did another post-doc back in Ireland, Austria and France looking at pigs' social environment. After all that, she landed the position of research scientist in ethology and welfare at the Prairie Swine Centre where she will continue the great work done by Jennifer Brown and Harold Gonyou before her and start new projects.

As European producers are no longer allowed to dock tails, they are trying to find ways to manage tail biting in grow-finish pigs in fully slatted systems. Jen investigated wood as the primary enrichment and discovered that wood is generally safe for pigs, but the level of interaction with the wood depends on the type of wood. In a trial looking at a single enrichment in combination with a high fibre diet, a high level of tail biting occurred, which made her look at other types of meaningful enrichment that are slat compatible. She provided multiple enrichments at the same time, including grass in a rack, wood on the wall, and several hanging and loose items on the floor, and tail biting was much reduced in these pigs. A summary of this research will be included in the 2024 PSC Annual Research Report for anyone interested in more details.

Many producers in the USA and Canada are already using group housing for gestating sows, but most farms still use sow stalls



*Future projects will focus on the development of replacement gilts and their impact on sow mortality.*

for a period after weaning to facilitate breeding and pregnancy checking. As Proposition 12 in California does not allow sows to be housed in stalls after weaning, farms will need to change their systems to become prop-12 compliant. At the University of Pennsylvania, Jen was involved in a research trial with sows in individual stalls, individual pens or group pens for 8 days post-weaning and looking at a range of welfare measures, such as lesions, postures and different behaviour assessments. Their results showed that group housing is not just about the space but also about providing the opportunity to have proper social interactions. A summary of this study will also be included in the 2024 PSC Annual Research Report.

**“ Providing multiple forms of enrichment resulted in a reduced level of tail-biting.”**

Switching gears to sow housing in Canada, Jen provided an overview of the Code of Practice for the Care and Handling of Pigs review that was done in 2019-2021, which recommended that all sows should be housed in groups by July 2029. Because we see higher sow mortality during the transition, one of Jen Brown's recommendations last year was to focus on the development of replacement gilts. This will be looked at further in an upcoming research project.

Another project at PSC that recently finished looked at environmental enrichment to pigs either in early life (2-9 weeks of age), late life (9 weeks to slaughter), or both. Pigs receiving enrichment in late life or in both periods had higher weight gain at 18-21 weeks of age than pigs not receiving enrichment. Damaging behaviours such as pen mate manipulations were reduced when pigs received enrichment, showing that enrichment is indeed effective.

Looking forward to the coming year, a new project starting soon will look at thermal profiles of pigs and how that related to feed efficiency and stress response. Another project will analyze data from a commercial operation that has some barns with group-housed sows and others still in stalls to see the difference in sow performance under similar management. This data will also be used to study the feeding patterns and social behaviour with the ESF system and how that relates to sow productivity. Based on the results, a set of interventions will be designed and evaluated to improve gilt development in ESF systems on commercial farms. Another exciting new project will look at loose lactation systems compared to conventional farrowing crates. There are now loose lactation systems available on the market in Canada, so this is a good time to look at piglet performance and welfare in these systems and to gain feedback from staff working with these systems. Last but not least, an ongoing study on creep feed will look at different types of creep feed and effects on piglet growth and development.

