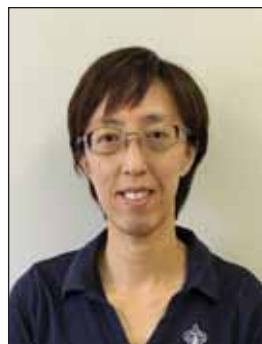


# Sow housing during the post-weaning and early pregnancy periods

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Jen-Yun Chou is the Research Scientist, Ethology at Prairie Swine Centre. This article consists of results from work that she performed as part of her post-doctoral fellowship, when she was affiliated with the University of Pennsylvania in Philadelphia, PA, USA. This article is included to introduce readers to Jen-Yun's previous work, which is also relevant to Canadian pork producers.



## APPLICATION FOR PRODUCERS

Post-weaning sow housing recommendations and requirements may change in the future. This research helps us understand the welfare aspects of different housing systems.

## SUMMARY

Research to date is limited on how best to house and manage sows during the post-weaning and early gestation periods from a welfare perspective. A systematic literature review (part 1) on this topic found only a small number of studies ( $n = 27$ ) that met our systematic search criteria. Compared to stalls, group housing requires mixing of animals and always triggers more aggression and skin lesions at the time of mixing. What type of housing yields the best overall welfare outcome remains unclear as none of the studies explored the mental wellbeing of sows during this period.

## INTRODUCTION

Sows and boars are an important focus in farm animal welfare assessments as they typically live the longest lives. For sows, the time between the end of lactation (post-weaning) and the implantation of embryos (early gestation) is very dynamic from both a physiological and husbandry perspective. However, research to date is limited on how best to house and manage sows during this critical period of their production cycle from a welfare perspective. Post-weaned sows are still commonly housed in individual stalls for at least a week, and often longer, on most farms. Housing sows individually during this critical period ensures adequate feed intake, reduces the risk of injuries due to mixing aggression with unfamiliar sows when their physicality is more fragile, and facilitates insemination. However, the impact of this confinement on sow behaviour and welfare is not well understood as the stall deprives the sow of both adequate movement and social contact.



*"The impact of confinement on sow behaviour and welfare is not well understood."*

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## EXPERIMENTAL PROCEDURES

A systematic review used Web of Science to make in-depth comparisons among welfare-based studies that focus on sow housing during the post-weaning and early pregnancy period to identify important knowledge gaps. This review describes in more detail the studies that used sow-based welfare measures, such as lesions, stress, behaviours and any other psychological evaluation.

## RESULTS AND DISCUSSION

Our systematic review found relatively few studies ( $n = 27$ ) on the effects of housing post-weaning and during early pregnancy that address its impact on sow welfare. The majority of the relevant literature has focused on reproductive performance. Those papers examining welfare found that group housing after weaning usually generated more agonistic interactions (social behaviour related to fighting) and elevated cortisol concentration compared to individual housing, especially when feeding method generates competition, such as floor feeding, an unprotected feeding stall, or queuing in front of ESF stations.

Body lesions also were more prevalent due to mixing, but some studies showed increased space allowance during regrouping can reduce aggression and the subsequent lesions. Other studies found no difference in terms of aggression or skin lesions between different group structures (static or dynamic) and a limited number of studies addressing the timing of mixing did not report consistent differences. Social rank and parity had some influence on agonistic interactions and consequently the severity of lesions.



## IMPLICATIONS

The systematic review defined a critical knowledge gap regarding the full impact of housing on the welfare of post-weaning and early gestation sows. This gap, and thus the true welfare impact of sow housing, will only be addressed by the use of novel, more holistic assessment methods that also capture the psychological state of the sow.

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