

## ANIMAL WELFARE

**Title:** Weaning sows directly into group housing: Effects on aggression, physiology and productivity  
– NPB #13-091

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### Scientific abstract

Social stress from mixing has the potential to negatively affect sow reproduction and welfare. Housing sows in stalls from weaning until five weeks after breeding is a common strategy used to prevent aggression and ensure control over individual feed intake during breeding, conception and implantation. However, pressure to reduce stall use will likely continue, and alternative management options should be explored. This study compared the effects of three mixing strategies on sow performance in fully-slatted pens. A total of 252 sows were studied over six replicates, in groups of 14 sows/pen (2.2 m<sup>2</sup>/sow). Treatments consisted of: i) Early mixing (EM)- sows mixed into groups at weaning; ii) Late mixing (LM)- sows stall-housed at weaning and mixed at five weeks gestation; and iii) Pre-socialisation (PS)- sows mixed for two days after weaning, then stall housed for breeding up to five weeks gestation, after which they were mixed (same groups). Sows were fed once daily in free-access stalls, after which they were locked out of the stalls, ensuring that sows spent up to 22 hours per day in the loafing area. Breeding and farrowing performance were recorded, as well as sow aggression for two days after mixing, sow lameness, injury score and saliva cortisol before and after mixing. Conception rates differed among treatments, with EM sows having the highest conception rate (98%), followed by PS sows (94%), and LM sows had the lowest conception rate (86%). There were significantly fewer stillborn piglets in the EM treatment, but no other production differences were found. There were no significant differences among treatments in the amount of aggression displayed after mixing, changes in lameness before and after mixing, and over the course of gestation. After the first mixing, the PS treatment had significantly lower skin injuries compared to the EM and LM treatments. There were no significant differences in cortisol levels before and after mixing among the treatments. The lower conception rate in the LM sows may reflect sub-optimal stimulation of oestrus during stall housing. In comparison, the EM and PS groups received mixing stress immediately after weaning, which may have stimulated follicular growth and clearer oestrus expression. A tendency for fewer stillborn piglets in EM sows may result from improved fitness and/or activity levels during early gestation. The lack of difference in aggression, cortisol or lameness score between the treatments suggests that sow welfare was not compromised by any of the treatments. These results indicate that, under good management conditions, mixing sows at weaning does not negatively impact sow performance or welfare.

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