RESEARCH ABSTRACT

ANIMAL WELFARE

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Title: Effects of Mixed and Uniform Parity Groupings on Feeding Behaviour, Welfare and Productivity of Sows in ESF Housing – **NPB #11-067**

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Scientific Abstract

Electronic sow feeder (ESF) systems are an effective method for managing sows in group housing, as they provide an automated system for controlling individual feed intake. However, low-ranking sows have been found to receive more aggression and injuries, and have poorer productivity compared to high-ranking sows. Low-ranking sows also tend to gain entry to the ESF later in the feeding cycle, and are more frequently displaced. Information on how to manage low-ranking sows is needed, and will benefit sow welfare and production.

This study compared different grouping strategies for sows in ESF systems, looking at mixed parity groups versus uniform groups of low, medium and high parity sows, to determine their effects on sow feeding behaviour, injury scores and productivity. Six replicate trials were performed with approximately 240 sows per replicate. Following confirmation of pregnancy, groups of 60 sows were formed based on parity (low, medium, high parity, and one mixed parity group as a control). Sows were weighed, body condition scored (BCS), and skin lesions and lameness were assessed. Ultrasonic backfat measures were collected on a sub-sample of 288 sows. Automated ESF records were collected for individual sows throughout gestation. Skin lesion scoring was repeated at 3 days post-mixing and 7 days after final grouping as a measure of aggression, and productivity was recorded at farrowing.

Backfat results showed that younger sows (parities 1 to 4) housed in uniform groups fared better than in mixed parity groups over the course of gestation, and were able to increase backfat depth in the uniform groups, but lost backfat when housed in a mixed parity group. This was especially true for parity 1 and 2 sows, which lost an average of 4.12 mm backfat in the mixed parity treatment. Sows of parity score 3 in the uniform medium parity treatment faired the best overall, gaining 1.99 mm of backfat over gestation. A greater risk of lameness following mixing was also found when sows were housed in mixed parity groups, and housing sows in uniform groups helped to reduce the severity of lameness that developed. There was a strong effect of the mixing pen used, suggesting that additional external factors (eg flooring or pen configuration) also contributed to differences lameness scores. Body lesion scores increased in severity following mixing in all treatments. The

uniform low parity group incurred a significantly greater number of body lesions than all other treatments, and the uniform high parity group had the fewest. Body lesion data thus suggest an effect of age rather than grouping treatment, with younger sows being more aggressive at mixing. No production differences were found between sows in uniform groups as compared to mixed groups.

It is already a common practice to house gilts separately during gestation, and the results of this work show that parity 1 and 2 sows may also benefit from more uniform grouping practices. Future work to improve socialization in younger sows is recommended.