

ANIMAL WELFARE

Title : Improving the welfare of group housed sows fed via electronic sow feeding **NPB#12-083**

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Scientific Abstract:

Introduction

Both legislative initiatives and market forces are requiring producers to transition gestating sows from individual stalls to group housing. One major challenge with group housing is managing aggression during the initial period of hierarchy formation (Giersing, 1998). Several factors have been reported to impact the degree of aggression during group formation in electronic sow feeding ESF pens, but their effects can vary (Durrell, 2002; Gonyou, 2008; Jensen, 2000; Van Putten, 1990). Here we examine how the pre-mixing of sows prior to introduction and method of subsequent introduction of animals to the established dynamic group via the ESF feeder impact animal measures indicative of aggression.

Materials and methods

The experiment used a 2 x 2 factorial arrangement with the degree of familiarity (DF) among the new sows as the first factor and the method by which new sows are introduced (MI) into the established, dynamic group as the second factor. The cohort of new sows is either familiar with each other because of pre-mixing (PMIX) or not pre-mixed and unfamiliar with each other (UMIX). U MIX sows remained in breeding stalls prior to introduction, whereas the PMIX group was fed in breeding stalls but otherwise housed as a group from weaning to introduction. The cohort of incoming sows was introduced either as a batched unit, in which all new sows were introduced into the dynamic group in the ESF pen together (BAT), or individually, in which the new sows were introduced into the dynamic group singly (IND). This created 4 treatment structures: PMIX-BAT, PMIX-IND, U MIX-BAT, and U MIX-IND. Seven replications that included 1 sow cohort of each of the 4 treatment structures (experimental unit) served as the blocks in a complete, randomized block design. Each cohort consisted of 8 weaned sows.

Results –

Sows exhibited a prolonged recovery/adjustment period following weaning and then being rebred and introduced to pen gestation. Body weight decreased and lameness and lesion scores increased until mid-gestation before reversing. However treatment group had no effect on the outcome of these measures. While statistically significant, these negative changes were likely of limited biological significance.

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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There were also no significant effects of treatment on sow behavior immediately following introduction to pen gestation. Sows spent most of their time either standing or lying down. Overt aggression was rare (3 times per hour on average) and typically carried out by only a few animals. There was also no treatment effects on productivity outcomes measured in the farrowing house. Industry standard performance was achieved with each treatment (>85% farrowing rate, >14 total born, > 12 born alive).

Discussion and Conclusions

These findings highlight the ability to achieve or exceed standard levels of productivity in a well-managed pen gestation system. This results in part from the successful management of inter-animal aggression at the time of mixing. Although weight loss, lameness and skin lesions increased after sows were entered in to the pen, these changes were sufficiently small as not to have significant long term biological and or productivity impact. The minimum negative impact on sow productivity and welfare by introduction to this pen gestation system likely explains why there were only very limited treatment effects.