

## ANIMAL WELFARE

**Title:** Comparison of Management Factors Affecting Aggression in Group Housed Sows -  
NPB # 05-067

**Investigator:** Harold W. Gonyou

**Institution:** Prairie Swine Centre and University of Saskatchewan

**Date Submitted:** January 24, 2008

### Abstract

A study was conducted using 18 groups of 16 sows each to study the aggression and injuries resulting from group formation in an 80m<sup>2</sup> pen after breeding. The treatments (3-4 groups/treatment) included 'Control', 'Familiar' (previously housed together), 'Dominant' (regrouped with three dominant sows to the study animals), 'Exposed' (mixed for 48h prior to being stalled for breeding), and 'Protected' (access to protective stalls). Data were analyzed using Proc Mixed in SAS with group as the experimental unit. Overall, the number of fights and injuries did not differ among the treatments. Salivary cortisol concentration also did not differ among the treatments. More fights tended to occur on the first day of regrouping compared to the following two days (Day 1: 10.2, Day 2: 4.7, Day 3: 7.5; P<0.1). The duration of fights also decreased over time, with the longest fights occurring on the first day (Day 1: 17.3s, Day 2: 5.9s, Day 3: 3.6s; P<0.05). At 24h post-regrouping, injuries were greater in the Control (5.0) and Dominant (4.9) compared to the Exposed (3.4) (P<0.05), and tended to be greater than in the Familiar (3.8) treatment (P<0.1). At 48 and 72h post-regrouping, injuries were greater in the Control (5.3) compared to Dominant (3.9), Exposed (3.3), Familiar (3.3) and Protected (3.9) (P<0.05). After 10d, injuries were greatest in the Control (3.1) and Dominant (3.2) compared to the Exposed (2.0), Familiar (2.2) and Protected (1.9) treatments (P<0.05). Cortisol increased following regrouping, and remained higher than pre-regrouping values (Pre:3.9nmol/L, Post-24h:5.9nmol/L, Post-48h:6.6nmol/L, Post-72h:5.6nmol/L, Post-10d:6.5nmol/L; P<0.05). Although there were no overall treatment effects on the measured variables, differences in injuries appeared over time. This could indicate that more subtle aggression and chronic stress persisted in the Control and Dominant treatments, and social stability occurred faster in the Familiar and Exposed treatments. Overt fighting persisted in the Protected treatment, even though injuries decreased over time.

*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*

### For more information contact:

**National Pork Board, P.O. Box 9114, Des Moines, Iowa USA**

800-456-7675, Fax: 515-223-2646, E-Mail: [porkboard@porkboard.org](mailto:porkboard@porkboard.org), Web: <http://www.porkboard.org/>