

Effects of Farrowing System on Agonistic Behaviors of Growing Pigs at Mixing

L. Wang¹ and Y. Li²

¹College of Animal Science and Technology, Qingdao Agricultural University, Shandong, China

²West Central Research and Outreach Center, University of Minnesota, Morris, MN

Previous studies indicated that rearing environment in early life affects behavioral development, which consequently modifies behavioral response of pigs to stressful environments in later stages of the production. A study was conducted to compare agonistic behavior of growing pigs that were reared in a group-farrowing system with pigs reared in a confinement system at mixing. In the group-farrowing system, pigs were farrowed in bedded individual pens, and mingled into a group of 8 litters at about 10 d of age. After weaning (5 wk), pigs remained in groups of 81 (± 2.6) pigs in the farrowing barn until 8 wk of age. In the confinement system, pigs were born in farrowing crates, mixed and moved to pens of 9 pigs in a confinement nursery barn at weaning (5 wk). At 8 wk of age, a total of 216 pigs were allocated into 24 pens of 9 pigs in a confinement grow-finish barn, with 12 pens from each previous housing system. To maintain a constant degree of familiarity among pen-mates between the two previous housing systems, each finishing pen consisted of 3 pigs from each of 3 group-farrowing rooms or 3 nursery pens. Aggressive interactions among pigs in 6 pens of each previous housing system were video-recorded immediately after mixing for 24 h. The videos were viewed continuously to register all fighting events, including total duration and frequency of fighting among familiar and unfamiliar pigs, and fighting occurring at feeders, drinkers, and open areas of a pen. Data was analyzed by using the Glimmix procedure of SAS with pen as the experimental unit. Total duration (19.4 vs. 119.5 s/h, SE = 14.1; $F_{1,10} = 21.26$, $P = 0.001$) and frequency (1.5 vs. 3.8 fights/h, SE = 0.26; $F_{1,10} = 16.33$, $P = 0.002$) of fighting was less among pigs from the group-farrowing system than pigs from the confinement system. Approximately 95% of fights occurred among unfamiliar pigs, with 65%, 30%, and 5% of total fights being observed in open areas, at feeders, and at drinkers, respectively, regardless of previous housing system (all $P > 0.05$). These results suggest that pigs reared in the group-farrowing system maintained the ability to discriminate between pen mates and non-pen mates, and were more tolerant of unfamiliar pigs when mixed in small groups compared to pigs reared in the confinement system.

20% - mortality - group farrowing
10% - mortality - confinement farrowing