

Bhum-eak Promhitatorn 2010: Influences of Stall and Grouping Management on Behavior, Fertility and Performance of Sows. Master of Science (Agriculture), Major Field: Animal Science, Department of Animal Science. Thesis Advisor: Assistant Professor Jamroen Thiengtham, Ph.D. 57 pages.

Two experiments were conducted to compare 2 types of pen systems of breeding sows (parity 2-6) on behavior and reproductive and productive performance. In experiment I, 24 crossbred sows with similar weight were divided into 2 groups. Each group comprised of 3 replicates with 4 sows in each replicate. The animals in Group I were put in individual sow stall ($0.61 \times 2.21 \text{ m}^2$) immediately after weaning, while those in Group II were grouped in a pen of 4 sows/pen ($4 \times 4 \text{ m}^2$) with 6 individual feeding stalls. Animals in all treatments were observed during 4 sampling intervals (0-3 h, 4-7 h, 25-28 h and 30-33 h; 0 h =time start mixing) and recorded for fighting bouts displayed either towards sows near by stalls or among pen mates. The results showed that the sows in both groups displayed similar fighting bouts during sampling periods ($P>0.05$). Sows in Group I showed significantly longer weaning-to-oestrus interval than those in Group II (4.67 vs 4.00 day; $P<0.05$). They also had significantly smaller litter size (12.3 ± 0.47 vs 13.8 ± 0.40 born/litter; $P<0.05$) and had less born alive piglets than those in group pen 11.3 ± 0.43 vs 13.7 ± 0.34 born/litter; $P<0.05$) with significantly higher incidence of mummified piglets than those in group pen (0.5 ± 0.22 and 0 pigs/litter; $P<0.05$). Faecal cortisol concentrations of the sows in Group I were significantly higher than of those in Group II (6.95 ± 0.64 vs 3.78 ± 0.38 ng/g; $P<0.05$). The results indicate some effects of housing systems on stress responses, reproductive performance and productivity of sows.

Experiment II was conducted to compare 2 types of pen systems similar to Experiment I on behavior and production performance of sows. But the animal in both groups were put in treatment 6 weeks after AI. Animals in all treatments were observed and recorded for fighting bouts displayed as in Experiment I. The results showed that the sows in Group I displayed significantly higher total numbers of fighting bouts during sampling periods than those in Group II (5 ± 0.42 vs 2 ± 0.33 ; $P<0.05$). Sows in Group I had significantly smaller litter size than those in group pen (11.25 ± 0.8 and 13.50 ± 0.64 born/litter; $P<0.05$). They also had significantly less born alive piglets than those in Group II (10 ± 0.73 and 13.33 ± 0.63 born/litter; $P<0.05$). Faecal cortisol concentrations of the sows in Group I were significantly higher on Day 2, 5 and on average than those in Group II (Day 0 = day of grouping; $P<0.05$). These results from both experiments indicate that grouping sows in pen either just after weaning or 6 weeks after mating has no detrimental effect on stress, fighting behaviour, fertility and fecundity.

Student's signature

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