

Research: Mixing Times for Sows

Currently, the most common management strategy for group housing in North America is to place sows in groups at 4-5 weeks after breeding. This avoids aggression during the implantation period, allows for individual feeding and observations during breeding and implantation, and allows pregnancy checking to be done in stalls. However, further reductions on stall use are possible and other mixing times may offer some different advantages. For example, mixing directly after weaning would reduce the amount of time sows spend in stalls, increase the amount of space available for gestation pens, and would allow the majority of aggressive encounters to occur before breeding.

The Prairie Swine Centre (PSC) recently concluded a study looking at different timing for mixing of group housed sows. The strategies tested included early mixing (EM: mixing at weaning), late mixing (LM: mixing at 5 weeks), and pre-socialization (PS: mixed 2 days, then stalled until mixing at 5 weeks after insemination). The pre-socialization treatment was tested as a way to reduce aggression when pregnant sows were regrouped. Each treatment used groups of 14 sows, fed in free-access stalls, with sows allowed into stalls only for feeding.

The results showed that there was little difference in production figures or the level of aggression among the different strategies. The conception rate was highest for early mixing, and lowest for the late mixing treatment, with pre-socialization in between. Early mixed sows also had fewer still-borns when compared to late mixing or pre-socialization (Table 1), which could reflect the increased fitness of sows from the additional time spent in groups. There were no significant differences in aggression between treatments, and the pre-socialized sows experienced aggression at both mixing times, so it did not show any advantage over the other treatments.



Free-access stalls at PSC: Sows were allowed into the stalls only for feeding

Table 1. Production characteristics of sows in three mixing treatments: Early Mixing (EM); Pre-Socialization (PS); and Late Mixing (LM).

Variable	Treatment			
	EM	PS	LM	P
Conception rate (%)	97.62	94.05	86.9	0.028
Total born	15.16	15.63	15.47	0.700
Born Alive	13.66	13.27	13.18	0.691
Still born	0.95 ^a	1.54 ^b	1.58 ^b	0.003
Mummies	0.47	0.44	0.53	0.766

Overall, the production figures among treatments were similar and indicate that the timing of group formation is flexible. Mixing at weaning can allow producers to reduce the amount of space taken up by stalls, and may be preferred for those wishing to decrease stall use. Mixing in the standard way at 5 weeks after breeding can allow for reduced labour at breeding, heat checks, pregnancy checks, daily health checks, and individualized feeding throughout the implantation period. Pre-socialization is not recommended due to sows experiencing initial mixing aggression twice, and the increased labour for stockpersons. Further studies to examine the effects of mixing after insemination are now underway at both PSC and the University of Manitoba.

The mixing at weaning study received international recognition as Dr. Jennifer Brown, research scientist at Prairie Swine Centre, was presented with an innovation award from the U.S. National Pork Board at the American Society of Animal Science Midwest meeting in Des Moines Iowa, in March 2015. The research was a collaboration between the Prairie Swine Centre and the University of Minnesota, and was supported by funding from the National Pork Board.