Effects of cross fostering on growth rate and within litter variability during nursing

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It was the objective of this experiment to test the hypothesis that cross fostering of nursery pigs will reduce the within litter variability of pigs at weaning. The experiment was conducted as a 2 x 3 factorial with two litter sizes (9 or 12 pigs) and three strategies for creating litter weights (light, heavy, or variable). A total of 107 litters were included in the experiment and all cross fostering took place within 48 h after birth. The light and the heavy litters were created by creating litters consisting of with a similar BW whereas the variable litters consisted of a mixture of light and heavy pigs. For the litters with 9 pigs, initial BW were 1.17 ± 0.2, 1.80 ± 0.21, and 1.49 ± 0.38 kg for light, heavy, and variable groups, respectively. For the litters with 12 pigs, initial BW were 1.20 ± 0.21, 1.81 ± 0.22, and 1.50 ± 0.39 kg for light, heavy and variable groups, respectively. The initial BW were different ($P < 0.001$) among the three weight groups, but within each group, they were similar across the two litter sizes. The SE for the light and the heavy groups were similar, but the variable groups had greater ($P < 0.001$) SE than the other two groups. Individual BW were recorded on d 7, 14, 21, and 28 and the SE and the coefficient of variation (CV) of the BW were calculated within each group. Results of the experiment showed that the differences in BW among the light, heavy, and variable groups remained constant throughout the experiment and the ADG for pigs were not influenced by the weight groups. However, pigs raised in litters with nine pigs were 390 g heavier ($P < 0.001$) at weaning compared with pigs raised in litters with 12 pigs. Within

each litter size, the SE and CV for the variable group was greater ($P < 0.001$) on the d of cross fostering than the SE and the CV for the light and the heavy groups. However, at d 14, 21, and 28, no differences in SE or CV were observed among treatment groups within each litter size. It is concluded from the present experiment that the use of cross fostering to create litters consisting of pigs with a uniform BW at birth does not reduce the variability in BW among litter mates at weaning.

Key words: Cross Fostering, Pigs, Variability, Weaning Weight