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1981

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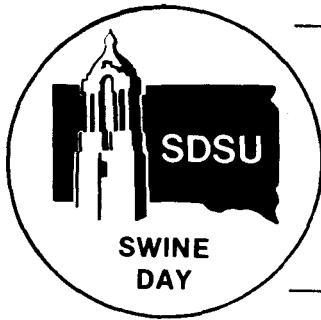
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Libal, G. W. and Wahlstrom, R. C., "Effect of Sorting Pigs into Uniform Weight Groups at Birth" (1981). *South Dakota Swine Field Day Proceedings and Research Reports, 1981*. Paper 10.
http://openprairie.sdstate.edu/sd_swine_1981/10

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EFFECT OF SORTING PIGS INTO UNIFORM WEIGHT
GROUPS AT BIRTH
G. W. Libal And R. C. Wahlstrom
DEPT. OF ANIMAL SCIENCE REPORT
SWINE 81-9

It has been demonstrated that larger pigs at birth have a greater survival rate than do small pigs, particularly in large litters. It is assumed that part of the death loss is because smaller pigs are weaker and do not compete well in establishing the peck order for position of nursing. It would seem logical that lessening the competition due to size differences at birth would lead to less death loss before weaning. The experiment reported herein was designed to evaluate the effect on pig performance and survivability of sorting pigs into groups of similar weight.

Experimental Procedure

Three trials were conducted utilizing 91 sow and gilt litters consisting of 797 crossbred pigs. The experimental treatments were:

- (1) Unsorted - litters left as farrowed.
- (2) Sorted - three to four litters sorted into weight groups based on birth weight and then returned to the sow so that only pigs of the same approximate weight were in competition.

Birth weights were taken when the sow had completed parturition. Pigs were always less than 18 hours of age when sorted and placed in uniform groups. Litter size was equalized among the sows whose litters were sorted on any given day. However, no attempt was made to equalize litter size among the sows whose litters were left unsorted. Weights of pigs were obtained at 10 days of age and at 21 days of age when the pigs were weaned. The pigs received creep feed in only the third trial. The three trials were combined for statistical analysis. The pigs were arbitrarily divided into six birth weight groups to evaluate the effect of the management treatments on survival of pigs of different birth weights.

Results

The performance of the pigs in the six birth weight groups is shown in table 1. This summary disregards the management treatments imposed and demonstrates the increase in survival rate with increased birth weight. Weights at birth, 10 days and 21 days were significantly different among weight classes. The weight advantage of the heavier pigs was maintained and increased between birth and 21 days of age.

TABLE 1. PERFORMANCE OF PIGS IN SIX BIRTH WEIGHT GROUPINGS

	Pig birth weight groups, lb					
	<2.2	2.22-2.64	2.65-3.08	3.10-3.63	3.65-4.18	>4.20
No. of pigs	84	125	170	219	145	54
Average birth weight, lb	1.89	2.46	2.86	3.37	3.87	4.55
Average 10-day weight, lb	4.64	5.63	6.21	7.24	8.18	9.06
Average 21-day weight, lb	9.37	11.00	12.12	12.89	13.93	15.69
Percent survival	35.7	48.0	56.5	70.8	85.5	97.0

Table 2 summarizes the effect of the two management treatments on pig performance and pig survivability. No differences were observed in pig weights due to management techniques imposed. Sorting pigs into weight groups and thus decreasing competition due to weight failed to increase pig weights significantly. Overall, there was an advantage in percent pig survival (61.0 vs 67.8%) due to sorting litters. However, it can be noted in the table that the significant advantage in survivability due to sorting was obtained for the heavier pigs with relatively little advantage with the lighter pigs. It would appear that death loss may be more related to size at birth than competition due to weight differences. It is difficult to explain why survival rate was significantly increased by sorting in the heavier pig groups but not in the lighter pig groups. It should be noted that of the pigs that survived in the three lightest weight groups heavier weaning weights were observed in the sorted group.

TABLE 2. EFFECT OF MANAGEMENT TREATMENTS ON PIG PERFORMANCE AND PIG SURVIVABILITY

	Treatments	
	Unsorted	Sorted
No. of pigs	415	382
Average birth weight, lb	3.08	3.20
Average 10-day weight, lb	6.91	7.26
Average 21-day weight, lb	12.56	13.09
Pig survival percentage		
Overall	253/415 = 61.0	259/382 = 67.8
By weight groups, lb		
<2.2	15/46 = 32.6	15/38 = 39.5
2.22-2.64	32/72 = 44.4	28/53 = 52.8
2.66-3.08	54/92 = 58.7	42/78 = 53.8
3.10-3.63*	85/117 = 72.6	70/102 = 68.6
3.65-4.18*	53/69 = 76.8	71/76 = 93.4
>4.20	14/19 = 73.7	33/35 = 94.0

*Significant effect of sorting into uniform weight groups at the .05 level.

Summary

Three trials were conducted utilizing 797 pigs from 91 sow and gilt litters to evaluate the practice of sorting pigs into uniform weight groups at birth compared to leaving the litters unsorted during the nursing period. No significant differences were found in 10-day or 21-day weights based upon these management practices. However, survivability of pigs was increased by sorting into uniform weight groups, with most of the increase in survival rate found in the heavier pigs. Survival rate increased with increased weight of the pigs regardless of management technique imposed.