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# Effect of Pen Space on Performance of Growing-Finishing Pigs

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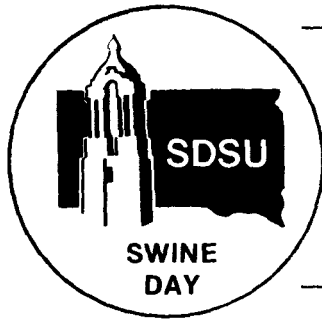
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EFFECT OF PEN SPACE ON PERFORMANCE OF  
 GROWING-FINISHING PIGS  
 G. W. Libal And R. C. Wahlstrom  
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For a number of years, the recommended space allowance for pigs has been 4 square feet and 8 square feet for the growing and finishing periods, respectively. Some producers have provided less pen space in an attempt to spread high facility costs over more pigs and thus lower per pig overhead costs. Some animal welfare spokesmen have expressed the opinion that even the recommended pen space allotments are too restrictive for both the pigs' performance and welfare.

The study reported herein was designed to evaluate performance of pigs housed in groups of 12, 16 or 20 pigs per pen and providing 4.73 and 9.47, 3.55 and 7.10 or 2.84 and 5.68 square feet per pig during the growing and finishing periods, respectively.

Experimental Procedure

Ninety-eight crossbred pigs were allotted to two replications of three management treatments on the basis of ancestry and sex. The three management treatments during the growing-finishing periods were:

	<u>No. of pigs per pen</u>	<u>Pen space per pig (sq ft)</u>
Treatment 1 -- Growing	Groups of 12	4.73
Finishing	Groups of 6	9.47
Treatment 2 -- Growing	Groups of 16	3.55
Finishing	Groups of 8	7.10
Treatment 3 -- Growing	Groups of 20	2.84
Finishing	Groups of 10	5.68

The pigs were housed in an environmentally modified building with totally slatted floors. Feeders and waterers were provided in numbers adequate for the pigs in the pens with the greatest pig density. All pigs were fed a 14% protein corn-soybean meal fortified diet for the entire experiment. Starting weight of the pigs was approximately 66 pounds and the experiment was conducted from January until May.

Results

Average daily gain, average daily feed and feed/gain data are summarized in table 1. Significant differences were found for average daily gain in growing, finishing and overall periods. In the growing period pigs with the greatest pen space gained significantly faster than the other groups. In the finishing period pigs with 7.1 sq ft of pen space gained faster ( $P < .05$ ) than

TABLE 1. RESULTS OF MANAGEMENT TREATMENTS

	Pen space (sq ft/pig)		
	4.73	3.55	2.84
Growing	4.73	3.55	2.84
Finishing	9.47	7.10	5.68
Initial weight, lb	66.1	66.4	66.2
6-week weight, lb	127.2	120.6	117.1
Final weight, lb	219.7	221.5	219.4
Average daily gain, lb			
Growing <sup>a</sup>	1.47 <sup>c</sup>	1.31 <sup>d</sup>	1.23 <sup>d</sup>
Finishing <sup>b</sup>	1.53 <sup>cd</sup>	1.56 <sup>c</sup>	1.45 <sup>d</sup>
Overall <sup>a</sup>	1.51 <sup>c</sup>	1.46 <sup>c</sup>	1.37 <sup>d</sup>
Average daily feed, lb			
Growing <sup>a</sup>	4.99 <sup>c</sup>	4.36 <sup>d</sup>	4.25 <sup>d</sup>
Finishing	6.02	5.64	5.46
Overall	5.58	5.13	5.00
Feed/gain			
Growing	3.38	3.30	3.52
Finishing	3.92	3.58	3.75
Overall	3.70	3.48	3.67

<sup>a</sup>P<.01 due to treatment.

<sup>b</sup>P<.05 due to treatment.

<sup>c, d</sup>Means on the same line with different superscripts are different (P<.05).

pigs with 5.68 sq ft but not faster than the pigs with 9.47 sq ft of pen space. Overall, pigs raised in pens which were least crowded gained significantly faster than pigs in the most crowded pens, with pigs in the recommended pen space groups gaining intermediate to the other two groups. During the growing-finishing period, feed consumption followed the pattern of daily gain and differences were significant. However, differences in feed consumption between treatment groups were not significant for the finishing or overall periods. Feed/gain values were not significantly affected by pig density. Numerically, the intermediate space allotment group had the more desirable feed/gain ratio. It would appear from these results that the pen space presently recommended (4.0 and 8.0 sq ft/pig) is adequate for growing-finishing pigs. More crowded conditions produced poorer gains and less crowded conditions produced only slight advantages in gain and no advantage in efficiency of gain.

#### Summary

Ninety-eight crossbred pigs were allotted to three pen space treatments which provided 4.73, 3.55 or 2.84 and 9.47, 7.10 or 5.68 sq ft per pig during the growing and finishing periods, respectively.

Pigs with the most pen space ate more feed and gained significantly faster during the growing period while the intermediate pen space group out-gained the pigs with the least pen space during the finishing period. Overall, pigs with more pen space gained significantly faster than pigs with the least pen space. No differences in feed consumption or feed efficiency were observed.