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Space requirements of finishing pigs fed to a heavier weight (removed individually)

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SPACE REQUIREMENTS OF FINISHING PIGS FED TO A HEAVIER WEIGHT (REMOVED INDIVIDUALLY)

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D. A. Nichols, and J. D. Hancock*

Summary

Space allowances of 6, 8, 10, and 12 ft² were evaluated for pigs fed from 120 to 250 lb. The management system used was to remove pigs individually as they reached 250 lb, which provided increasing space per pig. Using this management system, average daily gain, average daily feed intake, and feed efficiency improved linearly with increasing space allowance. Pigs allowed 6 ft² gained slower, ate less, and required more feed per lb of gain compared to pigs allowed 8, 10, and 12 ft². Pigs permitted 8, 10, and 12 ft² were similar in rate of gain, feed consumption, and feed efficiency, suggesting that 8 ft² is adequate space for the finishing pig, if pens are topped out as pigs individually reach 250 lb. If pigs are fed to a pen average of 250 lb without removing pigs individually, 10 ft² is required to maximize performance, as reported in Report of Progress 581. In this trial, space allowance of 6 ft²/pig impaired pigs performance from 120 to 200 lb. These results have been observed in previous studies, suggesting that finishing pigs need a minimum of 8 ft² in the finishing phase.

(Key Words: G-F, Performance, Space, Heavy Wt.)

Introduction

In the 1989 KSU Swine Day Report of Progress 581, we reported the effect of space allowance for finishing pigs fed to an average pen weight of 250 lb. In those studies, average daily gain and average daily feed intake increased linearly ($P < .05$) as space allowance increased by 2 ft²/pig from 6 to 12 ft²/pig.

However, pigs permitted 10 or 12 ft² of space were similar in performance, indicating that 10 ft² was adequate space for feeding hogs to a 250 lb average pen weight.

This study was conducted to evaluate 6, 8, 10, and 12 ft² per finishing pig with pigs fed to a heavier market weight but removed individually as they reached 250 lb when weighed weekly. This management procedure is similar to that used by swine producers who stock pens at 6 to 7 ft² and then remove pigs as they reach market weight.

Procedures

Pigs were allotted to one of four replicated treatments (6, 8, 10, or 12 ft²/pig space allowance) on the basis of weight, litter, and sex. Feeder and waterer space was subtracted from the total pen square footage to determine allowable space per pig. Pigs were housed in a modified open front building with 16 ft long pens adjusted for width to develop the desired square footage. Each pen had 8 ft of concrete slats and 8 ft of solid floor. Each pen housed 15 pigs and was equipped with one nipple waterer and a round feeder. All pigs were fed ad libitum a sorghum grain-soybean meal fortified diet that had a calculated analysis of 14.7% crude protein, .65% lysine, .65% calcium, and .50% phosphorous. No antibiotic was added to the finisher ration.

Pigs were weighed biweekly for the first 42 d of the trial and weekly thereafter. Pigs were removed each week as they individually reached 250 lb. When at least 50% of the pigs had been removed from the pen individually,

the remainder of the pen of pigs were fed to an average group weight of 250 lb, at which time the experiment was terminated.

Results and Discussion

The effect of space allowance on pigs fed to a heavier weight are shown in Table 1. During the first 42 d of the trial, those pigs allowed 10 and 12 ft² of space were significantly more efficient ($P < .05$) than those pigs permitted 6 ft². Pigs allowed 8 ft² grew slightly faster and were more efficient than those permitted 6 ft²; however, the difference was not significant. At the end of 42 d on trial, the average weight of the pigs was approximately 198 lb, suggesting that 6 sq ft was not enough space for pigs as they grew from 120 to 200 lb. The impaired performance observed for this weight pig was also reported in 1989 Report of Progress 581 for pigs permitted only 6 ft² of space/pig.

In the overall trial, average daily gain and average daily feed intake increased linearly ($P < .05$) as pigs were permitted more space. In addition, feed/gain ratio improved linearly ($P < .05$) with more space allowance per pig. Average daily gain was significantly reduced ($P < .05$) for those pigs permitted 6 ft² when compared to those allowed 8, 10, or 12 ft². Average daily feed intake was significantly less ($P < .05$) and F/G was significantly poorer ($P < .05$) for pigs permitted 6 ft² compared to those permitted 12 ft².

Average daily gain, average daily feed intake, feed efficiency, and days on test were similar for pigs allowed 8, 10, or 12 ft², suggesting that 8 ft² is adequate space if the pigs are removed individually as they reach 250 lb.

Table 1. Effect of Space Allowance on Performance of Finishing Pigs Fed to 250 lb. (Removed Individually)

Item	Space allowance, ft ² /pig			
	6	8	10	12
<u>Day 1 - 42^a</u>				
Avg daily gain, lb ^b	1.77 ^c	1.91 ^{cd}	1.96 ^d	2.02 ^d
Avg daily feed intake, lb	5.99	6.18	6.16	6.24
Feed/gain ^b	3.38 ^c	3.25 ^{cd}	3.15 ^d	3.09 ^d
<u>Overall</u>				
Avg final wt, lb	251.7	251.3	254.9	253.7
Avg no. d on feed	79.2	72.1	73.3	71.0
Avg daily gain, lb ^b	1.70 ^c	1.86 ^d	1.88 ^d	1.96 ^d
Avg daily feed intake, lb ^b	6.00 ^c	6.26 ^{cd}	6.36 ^{cd}	6.40 ^d
Feed/gain ^b	3.54 ^c	3.37 ^{cd}	3.39 ^{cd}	3.26 ^d

^aFifteen pigs per pen with four pens/treatment; avg initial wt = 121 lb.

^bLinear effect of space allowance ($P < .05$).

^{cd}Means on same line with different superscripts differ significantly ($P < .05$).