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A PROGRESS REPORT ON THE PERFORMANCE OF GROWING-FINISHING SWINE UNDER DIFFERENT ENVIRONMENTAL CONDITIONS

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Another series of trials have been completed on the effects of various floor types, number of pigs per pen and open versus insulated, ventilated housing on the performance of growing-finishing pigs. The floor types were: 100% slotted, 50% slotted, 25% slotted, and concrete with a narrow, deep gutter across the end of the pen. The slats were 5 inch wide reinforced concrete. Pits under the floor accumulated the manure. Pen sizes were either 5 x 15 feet or 10 x 15 feet. Eight or 9 pigs were placed in the smaller pens and the number of pigs was doubled in the larger pens. The pigs used in these trials were SPF Hampshire, Yorkshire, and Duroc crossbred pigs.

A 22 x 22 foot house with an adjoining outside concrete pen was used to compare the performance of pigs reared in this environment with the pigs in the insulated, ventilated house. Bedding was used in this house during both trials and the pigs were watered outside. One of two groups in this house was fed inside and the other was fed outside.

The rations used in these trials are shown in table 1. The high protein ration was fed up to 75 lb. body weight, then the 14% crude protein ration was fed to 125 lb. and then the 12% crude protein ration was fed to the end of the trials.

Table 1. Swine Rations Used at the Southeast Experimental Farm[a]

	Lb.	Lb.	Lb.
Shelled corn	766	820	872
Soybean meal (44%)	200	150	100
Dicalcium phosphate	15	10	10
Limestone	7	8	8
Trace mineral salt	5	5	5
Premix[b]	2.5	2.5	2.5
Calculated analysis:			
Crude protein, %	16	14	12
Calcium, %	0.72	0.61	0.58
Phosphorus, %	0.59	0.48	0.51

[a] The 16% crude protein ration is fed from weaning to 75 lb., the 14% ration from 75 lb. to 125 lb. and the 12% ration is fed to market weight.

[b] Each pound of premix provided 2 gm. oxytetracycline, 600,000 U.S.P. units of vitamin A, 60,000 I.C. units of vitamin D_3, 400 mg. of riboflavin, 1,000 mg. of pantothenic acid, 3,000 mg. of niacin, 20,000 mg. of choline and 2 mg. of vitamin B_{12}.

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Results and Discussion

Results of the two trials are shown in tables 2 and 3. The type of flooring did not significantly affect the daily gain of the pigs in the winter or summer trials. Pigs on the concrete floors did gain slightly faster than pigs on slotted floors in both trials. However, differences in daily gain between types of floors were small and supported the previous results (A.S. Series 65-19) that pigs gained about the same on the various types of floors.

Feed efficiency was rather consistent between pigs on the various floor types. These same results were reported in the previous trials.

Pigs housed in uninsulated open housing gained as rapidly as pigs in the insulated house in both the winter and summer trials. They required approximately 4% more feed per pound of gain in the winter, but their utilization of feed was equally as good in the summer trial.

The size of pen (and number of pigs per pen) did not affect the performance of the pigs in either trial (table 3). The larger pens with twice as many pigs as the smaller pens appeared to be less crowded and provided more freedom of movement than the smaller pens, but this did not apparently influence the performance of the pigs. There was some tail biting in all pens, yet the biting appeared to occur earlier and more often in the smaller pens. Tail biting did not occur in the uninsulated house.

The labor requirement was essentially the same for the three floors with slotted area. Feeders were moved to the middle of the pen and used as partitions to control the pen area when the pigs were smaller. Feeders were moved toward the end of the pen as more space was needed by the pigs. This was an effective way of keeping the pen clean. The concrete pens with the narrow gutter were usually dirty and had to be scraped two to three times a week, which increased the labor and cost of production on this type of flooring.

This is a progress report. The data in all trials will be combined and reported as a complete summary in the future.

Table 2. Results of Winter Trial (1965-66) and Summer Trial (1966)

	Floor type									
	Completely slotted		50% slotted		25% slotted		Narrow gutter		Uninsulated house	
Winter Trial										
No. of pigs	8	16	8	16	8	16	8	16	16	15
Av. initial wt., lb.	69	68	68	70	70	69	67	71	71	70
Av. final wt., lb.	195	191	194	192	197	199	198	201	198	203
Av. daily gain, lb.	1.55	1.51	1.56	1.51	1.56	1.60	1.61	1.60	1.57	1.64
Av., lb.	1.52		1.52		1.59		1.61		1.60	
Av. daily feed, lb.	5.93	5.63	5.53	5.68	6.10	5.93	5.92	6.20	6.17	6.48
Feed per lb. gain, lb.	3.82	3.73	3.55	3.77	3.90	3.71	3.67	3.87	3.94	3.94
Av., lb.	3.76		3.69		3.78		3.80		3.94	
Summer Trial										
No. of pigs	9	18	9	18	9	18	9	18	9	9
Av. initial wt., lb.	37	37	37	37	38	37	38	38	37	38
Av. final wt., lb.	218	217	215	217	219	221	211	225	205	216
Av. daily gain, lb.	1.47	1.46	1.54	1.55	1.56	1.59	1.53	1.65	1.61	1.71
Av., lb.	1.47		1.55		1.58		1.61		1.66	
Av. daily feed, lb.	4.83	4.63	4.66	4.73	4.83	4.96	4.77	5.12	5.22	5.20
Feed per lb. gain, lb.	3.28	3.17	3.03	3.05	3.09	3.12	3.12	3.10	3.24	3.04
Av., lb.	3.21		3.04		3.11		3.11		3.13	

Table 3. Effect of Pen Size

	5 x 15 ft. pens	10 x 15 ft. pens
Winter Trial		
No. of pigs per pen	8	16
Av. daily gain, lb.	1.57	1.56
Feed per lb. gain, lb.	3.73	3.77
Summer Trial		
No. of pigs per pen	9	18
Av. daily gain, lb.	1.52	1.56
Feed per lb. gain, lb.	3.13	3.11