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IFAS EXTENSION

Free-Choice Feeding of Whole Corn and Supplement to Growing-Finishing Swine ¹

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Most hogs are fed rations or diets containing ground corn mixed with protein, vitamin, and mineral supplements. These mixed, complete rations usually are self-fed to growing-finishing swine (from 50 pounds to market weight). An alternative feeding method for these hogs would be to feed whole, shelled corn and a complete protein-vitamin mineral supplement free-choice. In this feeding method, whole corn and supplement are placed in separate compartments of a hog self-feeder, or supplement can be placed in one self-feeder and corn in another in the same hog pen. Thus, instead of a mixed, balanced ration being provided, the hog would balance his own ration by eating whole corn and supplement separately.

Research Results

Results of an experiment to evaluate the free-choice method of feeding growing-finishing swine are summarized in Table 1. This experiment was conducted at the University of Florida's Agricultural Research and Education Center at Marianna. Pigs fed free-choice whole corn and complete supplement required 4 percent more total feed per unit of weight gain than did pigs fed the

mixed, ground, complete ration. Pigs fed free-choice also grew slower, requiring an additional two weeks to reach market weight of 230 pounds. Results of this experiment agree with similar experiments done at other agricultural colleges.

Though pigs fed free-choice required more feed per unit of gain, cost of gain was very similar to that of pigs fed the mixed ration. This was because of the additional cost of \$10 per ton for grinding and mixing that was included in the cost of the mixed ration.

A natural concern of producers is the amount of complete protein-vitamin-mineral supplement that pigs will eat when fed whole corn and a supplement separately, in free-choice form. In the Florida experiment, pigs fed free-choice consumed sufficient proportions of corn and supplement to receive a ration containing 14.6 percent protein. This was very similar to the value of 14.7 percent for pigs fed the mixed ration.

Factors to Consider

When deciding whether to use the free-choice or the complete, mixed, ground ration method of feeding hogs, the following factors need to be considered:

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1. Costs of grinding and mixing the ration, including transportation costs. These costs vary from feed mill to feed mill. Transportation costs depend on the distance between the farm and the mill. An alternative would be to purchase a grinder-mixer for the farm. However, cost of operation, including depreciation and maintenance, will need to be considered.
2. Longer time required for pigs fed free-choice to reach market weight. Producers with large, intensively managed facilities may not be able to afford the luxury of keeping their pens "tied up" for the additional time it takes free-choice fed hogs to reach market weight.
3. The free-choice system is best suited for growing-finishing swine (from 50 pounds to market weight). Younger swine should be fed a balanced, mixed, ground ration.
4. Good quality corn should be fed. If corn is of poor quality (e.g., moldy), over consumption of supplement may occur. This would increase the cost of the free-choice system, since supplement is more expensive than corn.
5. The free-choice system is not recommended for other whole grains, such as wheat or grain sorghum. Because of their small size, these grains are more likely to be eaten whole, rather than chewed by hogs.

Guidelines for the Free-Choice System

When using the free-choice system for feeding swine, the following guidelines should be followed:

1. At least 20 percent of the available feeder space should be for supplement (i.e., at least one feeder hole with supplement for every four with whole corn). If a separate compartment is not available in the self-feeder, a second self-feeder will be needed (one for supplement and one for whole corn).
2. In the free-choice system, corn and supplement should be offered in self-feeders at all times to the hogs.
3. A complete protein-vitamin-mineral supplement containing 38 to 40 percent crude protein should be used. These supplements are available commercially at most feed mills. An example of the list of ingredients and of the nutrient analysis of a commercially available supplement is presented in Table 2 . Be sure that the supplement is a complete supplement, in that it should provide supplemental minerals and vitamins, as well as protein.
4. Either meal or palette supplement will work. Because of its lower cost, meal is preferred. However, more wastage may occur with meal, especially if feeders are adjusted poorly.

Summary

Growing-finishing swine fed free-choice whole corn and supplement will usually require two more weeks to reach market weight than hogs fed a complete, ground, mixed ration. Free-choice fed hogs also will require slightly more feed per unit of weight gain. However, under most conditions, the cost of this gain will be competitive to the cost of gain of pigs fed a complete, ground, mixed ration. In all, the free-choice system of feeding growing-finishing swine would be best suited for the smaller swine producer with inexpensive facilities, who produces and stores his own corn.

Table 1.

Table 1. Performance of pigs fed free-choice corn and supplement or ground, mixed complete ration ^a .		
	Mixed ration	Free-choice
Number of pigs	36	36
Days on test	91	91
Starting weight, lbs.	56	56
Ending weight, lbs.	231	211
Feed/gain	3.1	3.3
Feed cost/100 lb. gain ^b	\$31.70	\$32.00
<p>a From Jilek, A.F. (1981), University of Florida, Department of Animal Science, Marianna Agricultural Research and Education Center Research Report No. MA-1981-1.</p> <p>b Corn valued at \$3.50/bu., supplement at \$14.50/cwt. and grinding and mixing charges (for mixed ration only) of \$10/ton of ration.</p>		

Table 2.

Table 2. Guaranteed analysis and ingredients of sample 40 percent hog supplement ^a .	
Guaranteed analysis	
Crude protein, min.	40.00%
Crude fat, min.	1.50%
Crude fiber, max.	10.00%
Calcium (Ca), min.	3.25%
Calcium (Ca), max.	4.25%
Phosphorus (P), min.	1.25%

Table 2.

Salt (NaCl), max.	3.25%
Salt (NaCl) min.	2.75%
Total added mineral ingredients, max.	9.00%
Ingredients	
Soybean meal, meat and bone scraps, dehydrated alfalfa meal, wheat middlings, riboflavin supplement, vitamin A palmitate, niacin, D-pantothenic acid, choline chloride, cane molasses, D-activated sterol (vitamin D-3), vitamin B ₁₂ supplement, salt, defluorinated phosphate, ground limestone, manganese oxide, magnesium oxide, copper sulfate, sodium selenite, cobalt carbonate, ferrous sulfate, zinc oxide, and calcium iodate.	
a Similar to that used in the Florida experiment.	