

Pelleting Milo and Wheat for Growing-Finishing Swine

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Story in Brief

Three hundred twenty-four pigs were fed during the summer of 1970 at the Fort Reno Livestock Research Station to compare pelleted and ground all milo, 50 percent milo-50 percent wheat and all wheat-soybean meal diets for growing-finishing swine. The pigs were self-fed in confinement from an average weight of 52.9 to 210.8 pounds.

Pelleting significantly improved average daily gains and feed efficiency for either the milo, wheat or milo-wheat mixture when compared to the ground diets. The wheat or wheat-milo mixture supported similar gains and feed utilization as the milo ration.

Introduction

The influence of different processing methods of milo and wheat for swine on performance and feed utilization have not been fully established. Information involving pelleting is needed in order to most efficiently utilize milo and wheat in growing-finishing swine rations.

Milo has been considered the traditional swine feed in Oklahoma, but in recent years, wheat has been competitively priced with other cereal grains and used as a feed for swine. This has created the need for more information on the effect of substituting wheat for milo in growing-finishing rations.

The purposes of this study were to compare pelleting with grinding and to study the effect of substituting wheat for milo in diets for growing-finishing swine.

Materials and Methods

Three hundred twenty-four Duroc, Beltsville, and crossbred pigs from the swine breeding project at Fort Reno were self-fed in confinement during the summer of 1970 from an average weight of 52.9 to 210.8 pounds. Eighteen pigs were randomly allotted within breed, sex, litter, and weight to each pen (nine barrows and nine gilts; three Durocs, three

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Beltsvilles and three crossbreds). The study included three replications, each started one week apart, of the six treatments involving 18 pens.

The pigs were fed 16 percent crude protein all milo, 50 percent milo-50 percent wheat or all wheat-soybean diets as shown in Table 1. Each diet was fed in both ground and pelleted form. The milo and wheat analyzed 8.3 and 12.3 percent crude protein, respectively. A proximate analysis of the complete rations showed 87.7, 88.9, and 88.0 percent dry matter and 16.3, 15.4, and 16.5 percent protein for the milo, wheat and 50 percent milo-50 percent wheat diets, respectively. The pigs were started on one of the six experimental diets one week after being placed in 10' x 24' feeding pens with concrete floors. This allowed pigs time to adjust to the new surroundings before the trial started. The pigs had access to feed and water at all times.

All grains were ground by using a hammermill with a 0.125 inch screen. The three ground diets were fed in this finely ground form, while the pelleted diets were fed as 3/16 inch pellets.

The pigs were individually removed from the six treatments at approximately 210 pounds. Average daily gain, daily feed intake, feed efficiency, and probed backfat thickness adjusted to 200 pounds were calculated at the completion of each trial.

Table 1. Ration Composition.

Ingredients, percent	Ration Number ¹		
	1 and 2	3 and 4	5 and 6
Milo (8.3%)	72.25	-----	38.25
Wheat (12.3%)	-----	81.50	38.25
Soybean meal (44%)	22.75	13.60	18.50
Molasses (wet)	1.50	1.50	1.50
Dicalcium phosphate	1.50	1.30	1.40
Calcium carbonate	0.80	0.90	0.90
Salt	0.50	0.50	0.50
Vitamin-trace mineral premix ²	0.50	0.50	0.50
Tylan 10	0.20	0.20	0.20
Total	100.00	100.00	100.00
	Calculated Percent		
Composition			
Protein	16.00	16.00	16.00
Calcium	0.70	0.70	0.70
Phosphorus	0.60	0.60	0.60

¹ Rations 1, 3, and 5 were fed in ground form. Rations 2, 4, and 6 were fed in pelleted form.
² Vitamin-trace mineral premix supplied 1500 I.U. Vitamin A, 150 I.U. Vitamin D₃, 2 mg. riboflavin, 15 mg. niacin, 10 mg. pantothenic acid, 500 mg. choline, 7.5 mcg. Vitamin B₁₂, 0.22 ppm iodine, 99 ppm iron, 22 ppm manganese, 11 ppm copper, and 99 ppm zinc per pound of feed.

Results and Discussion

The results of this trial are shown in Table 2. The pigs receiving the ground or pelleted diets were fed an average of 96.3 and 90.8 days, respectively. The average daily gains and feed efficiencies of the pigs fed the pelleted diets were significantly superior to those of pigs fed the ground diets. Pigs fed pelleted diets also tended to have a lower average daily feed intake. No significant differences in performance were found due to the grain within the ground or pelleted diets. Treatments also had little apparent effect on probed backfat thickness.

Table 2. Effect of Pelleting on Performance of Growing-Finishing Swine.

Item	Milo		Ration Designation		50% Milo- 50% Wheat	
	Gr.	Pel.	Gr.	Pel.	Gr.	Pel.
	1	2	1	2	1	2
Pens per treatment, no.	3	3	3	3	3	3
Pigs per pen, no.	18	18	18	18	18	18
Av. initial weight, lb.	53.5	52.3	53.1	52.8	52.0	53.7
Av. final weight, lb.	210.0	211.1	209.9	211.2	207.3	215.3
Av. daily gain, lb.*	1.64 ¹	1.77 ²	1.61 ¹	1.74 ²	1.67 ¹	1.75 ²
Av. daily feed intake, lb.**	5.73 ³	5.60 ^{2a}	5.42 ^{1a}	5.29 ¹	5.66 ^{2a}	5.34 ¹
Feed per lb. of gain, lb.*	3.51 ²	3.17 ¹	3.42 ²	3.07 ¹	3.50 ²	3.12 ¹
Av. adjusted backfat, in.	1.48	1.49	.148	1.49	1.50	1.51

* Any two means without a common superscript differ significantly ($P < .01$).

** Any two means without a common superscript differ significantly ($P < .05$).

Myodegeneration Syndrome In Swine

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Story In Brief

In recent years there has been noted an increased death rate of swine as a result of medical treatment, weighing, lot movement, exercise, and hauling. This increase in death rate has been attributed to a muscle abnormality known as Myodegeneration Syndrome. The purpose of this