Sprouted Sorghum Grain for Finishing Swine

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Summary

In a three-week feeding trial for 30 growing pigs (70 lbs.), we compared diets formulated by using 1973 sprout damaged sorghum grain from two Kansas areas. No palatability problems were noted, weight gains were similar to those of pigs fed undamaged 1972 sorghum. Feed consumption of diets based on sprout damaged sorghum grain was higher, consequently, resulted in poorer feed conversion. Though the data may indicate slightly higher feed requirements, they should be considered only as preliminary, because results were based on only a short feeding period and few animals.

Introduction

Owing to weather conditions in September 1973, large quantities of sorghum grain in Kansas fields sprouted. Much of that grain was placed in sample grade because total damaged kernels exceeded 15%. Livestock feeders were concerned about the feeding value of the sprout damaged grain. The study reported here was designed to help the producer answer questions on acceptability and subsequent performance of swine fed sprouted grain.

Procedure

General. Pigs randomly assigned to treatments based on litter and initial weight were confined in slatted floor pens in the KSU finishing barn. Pigs had free access to both feed and water throughout the experiment. Composition of the basal experimental diet is shown in table 6.1.

Table 6.1. Composition of Swine Grower Diets.

Ingredients	%
Gr. sorghum grain	76.1
Soybean meal (44%)	20.0
Dicalcium phosphate	1.4
Gr. limestone	1.0
Salt	.5
Vitamin, trace mineral, and antibiotic premix	1.0

Feeding trial. Thirty pigs averaging 70 lbs. were randomly assigned to one of the three diets: (A) 1972 sorghum grain; (B) 1973 sprouted sorghum grain, Manhattan area; (C) 1973 sprouted sorghum grain, Seneca area. Test pens each holding 10 pigs were not replicated.

In addition, fifteen pigs averaging 70 lbs. were assigned to a palatibility test pen where they had a choice of the three diets. Feeders were relocated daily to prevent habit or nearness to waterers from biasing the results.

Because of limited supply of the test grains, feeding trials lasted only three weeks.

Results and Discussion

Results of study are shown in table 6.2. Pigs fed sprouted sorghum C gained slower than those on unsprouted A or sprouted B. The formulation of the diets was based on equal quantities of sorghum, and sorghum used in diet C contained less protein than did that used in the other diets, resulting in a 2% lower protein in the final feed. Pigs on ration A and B showed no significant difference in gain, but average daily intake by pigs receiving sproutdamaged sorghum (B) was greater. Thus, feed conversion values were poorer for the sprout damaged sorghum(B). Similar effects could be found by comparing different sorghum samples during a normal crop year. Therefore, one should not conclude definitely that these results indicated poor use of sprout damaged sorghum, since the trial was for only three weeks and not replicated.

Table 6.2. Performance of Pigs Receiving Feed Formulated Using 1972 Crop or 1973 Sprout-damaged Sorghum[a]

Ration	1972	1973 Sprout-damaged	
	A	B	C
Daily gain, lbs.	1.62	1.68	1.39
Daily feed intake, lbs.	4.36	5.37	4.45
Feed/gain	2.69	3.19	3.19

[a]Each value is the mean of 10 pigs weighing 70 lbs. initially.

Results of the palatability study are shown in table 6.3. No acceptability problem was observed, in that consumption of feed formulated with sprout damaged grain was equal to or greater than that formulated with the 1972 harvested grain.

Table 6.3. Consumption in Pounds of Feed Formulated Using 1972 Crop or 1973 Sprout-damaged Sorghum[a]

Ration	Total feed consumed	Feed consumed per pig
1972 Crop Sorghum - A	334	22.3
1973 Sprout-damaged - B	566	37.7
1973 Sprout-damaged - C	337	22.5

[a]Pen contained 15 pigs and three feeders. (rotated daily).