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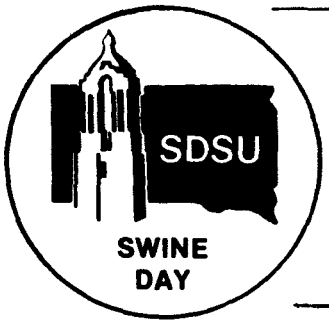

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During the past year there has been renewed interest in the feeding value of by-products of alcohol production. Previous research has dealt primarily with feeding of distillers dried grains or distillers dried grains with solubles (DDG/S). Research conducted at South Dakota State University had shown that growing-finishing pigs could be fed diets containing as much as 20% DDG/S without significantly affecting rate of gain. However, feed conversion was significantly poorer with this level of DDG/S in the diet. Protein and dry matter digestibility were also reduced when diets contained 20% of DDG/S.

The experiment reported herein was conducted to evaluate different levels of DDG/S in pig starter diets that were equalized in lysine content.

Experimental Procedure

Two trials were conducted with 120 crossbred pigs in each trial. Pigs were weaned at an average age of approximately 4 weeks and placed on the experimental diets. Pigs averaged 17.8 pounds initially. Six replicated lots were assigned to each of four treatments in each trial. The pigs were housed in the swine laboratory room in the Animal Science Complex and continued on experiment for 4 weeks.

The dietary treatments were as follows:

1. Basal diet, 0% distillers dried grains with solubles (DDG/S)
2. 10% DDG/S
3. 20% DDG/S
4. 30% DDG/S

The basal corn-soybean meal diet was formulated to contain 19.6% crude protein and 1.05% lysine. The diets containing DDG/S were formulated to contain the same amount of protein and lysine as the basal diet by altering the ratio of corn and soybean meal and supplementing with synthetic L-lysine monohydrochloride. The composition of the experimental diets is shown in table 1.

Results

The data for both trials were combined and are presented in table 2. There was a significant difference in average daily gain among treatments. Daily gains decreased in a linear fashion as the level of DDG/S in the diet was increased. Pigs fed diets of 0, 10, 20 or 30% DDG/S gained .77, .74, .70 and .65 pound per day, respectively. There were no statistically significant differences among treatments in average daily feed consumption or in feed

TABLE 1. COMPOSITION OF DIETS (PERCENT)

Ingredients	Distillers dried grains/solubles (%) 0	10	20	30
Corn, 8.8% crude protein	65.4	60.5	55.6	50.8
Soybean meal, 43.5% crude protein	31.9	26.8	21.7	16.6
DDG/S, 26.5% crude protein	--	10.0	20.0	30.0
Dicalcium phosphate	1.2	.9	.7	.4
Ground limestone	.9	1.08	1.16	1.24
Trace mineral salt	.3	.3	.3	.3
Premix[a]	.3	.3	.3	.3
L-lysine monohydrochloride	--	.12	.24	.36
Chemical analysis				
Crude protein, %	19.85	19.75	21.05	20.06
Lysine, %	1.20	1.16	1.23	1.16

[a] Supplied per pound of diet: vitamin A, 2000 IU; vitamin D, 200 IU; vitamin E, 3 IU; vitamin K, 1.2 mg; riboflavin, 1.5 mg; pantothenic acid, 6 mg; niacin, 9.6 mg; choline, 30 mg; vitamin B_{12}, 6 mcg; selenium, .05 mg; penicillin, 25 mg; aureomycin, 50 mg and sulfamethazine, 50 milligrams.

TABLE 2. DISTILLERS DRIED GRAINS WITH SOLUBLES IN YOUNG PIG DIETS

	Distillers dried grains/solubles (%) 0	10	20	30
Avg initial wt, lb[a]	17.8	17.8	17.7	17.7
Avg final wt, lb[b]	39.4	38.3	37.3	35.9
Avg daily gain, lb[c]	.77	.74	.70	.65
Avg daily feed, lb	1.34	1.34	1.28	1.23
Feed/gain	1.75	1.82	1.84	1.90

[a] Twelve lots of five pigs each per treatment.
[b] Significant difference among treatments ($P<.05$).
[c] Significant difference among treatments ($P<.01$).

required per unit of gain. However, less of the diets containing 20 and 30% DDG/S was consumed compared to the diets of 0 or 10% DDG/S. Also, the trend was for more feed/gain as the level of DDG/S in the diet increased.

Summary

Two hundred forty young weaned pigs of an average weight of 17.8 pounds were used in two trials to study the effect of 0, 10, 20 or 30% distillers dried grains with solubles in diets fed for 4 weeks. Diets were equalized in lysine content at a level above the suggested requirement for pigs of this size.

Average daily gains were significantly decreased as dietary level of DDG/S increased. Feed consumption and feed efficiency decreased with increasing levels of DDG/S. However, the differences were not significant. The data indicate that the young pig can utilize this by-product, but it appeared to affect palatability and the higher fiber content may have been involved in the reduced gains and increased feed/gain.