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It has been suggested by many investigations that certain ingredients contain unidentified growth factors of benefit to the growing pig. One of the ingredients that has been suggested as a source of unidentified growth factors is alfalfa meal.

This trial was part of a larger experiment participated in by several states in the North Central region. The objectives were to determine the effects of low levels of dehydrated alfalfa meal in a corn-soybean meal type ration fed to growing-finishing swine.

Experimental Procedure

Thirty-six Hampshire-Yorkshire crossbred pigs approximately 50 lb. in weight were randomly allotted into six lots of six pigs each. Equal numbers of barrows and gilts were in each lot. The three experimental treatments were:

1 - Corn-soybean meal basal
2 - Basal plus 2.5% dehydrated alfalfa meal
3 - Basal plus 5% dehydrated alfalfa meal

The composition of the rations fed is shown in table 1. The pigs were self-fed and water was provided ad libitum in 80 gallon tank-type waterers. Feed consumption was recorded. The pigs were fed on concrete with adjoining houses.

Table 1. Composition of Rations

Ingredient[a]	Basal (S-15)	2.5% alfalfa (S-16)	5.0% alfalfa (S-17)
Shelled corn	824.0	807.0	790.0
Dehydrated alfalfa meal[b]	--	25.0	50.0
Soybean meal (50%)	150.0	143.0	136.0
Dicalcium phosphate	8.5	8.5	8.5
Limestone	7.5	6.5	5.5
Trace mineral salt	5.0	5.0	5.0
Vitamin-antibiotic premix	5.0	5.0	5.0
Total	1000.0	1000.0	1000.0

[a] Thirty-five milligrams of zinc oxide were added to each lb. of ration.
[b] Guaranteed analyses were crude protein, minimum of 17%, crude fat, minimum of 3%, and crude fiber, maximum of 27%.

Results

Results of the experiment are shown in table 2. Although there were no real differences in performance when analyzed by statistical procedures, the following trends were observed. Pigs fed the corn-soybean meal basal ration and those fed 5% alfalfa gained 10.0 and 3.3% faster, respectively, than pigs fed 2.5% added alfalfa. The pigs fed 2.5% alfalfa meal in the first replicate did not gain as well as the other pigs in this experiment and account for the lowered average gain of this treatment. In replicate two they gained essentially as fast as those on the control ration. The slower gains of the pigs fed the 2.5% level of alfalfa appeared to be due to a lower feed intake by this group. In previous work at this station this trend had not been noted as pigs will generally compensate for a lower energy ration by eating more of the ration. The feed efficiency was slightly better when pigs were fed the corn-soybean meal ration. Efficiency of the corn-soybean ration was 2% and 5.2% better than the rations containing 2.5 and 5% added alfalfa meal, respectively.

These results are essentially in agreement with our previous work which indicated no consistent effect in rate of gain when alfalfa meal was included in rations at these levels. Levels of 5% or more do lower feed efficiency because of the higher fiber content and lower energy intake.

Table 2. Results of Feeding Dehydrated Alfalfa Meal to Growing Swine

	Replicate	Basal	2.5% alfalfa	5.0% alfalfa
Number of pigs	1	6	6	6
	2	6	6	6
Av. initial wt., lb.	1	51.2	50.5	50.5
	2	48.7	50.0	49.3
Av. final wt., lb.	1	203.7	200.5	201.7
	2	200.8	201.0	207.3
Av. daily gain, lb.	1	1.98	1.67	1.82
	2	1.98	1.96	1.90
	Av.	1.98	1.80	1.86
Av. daily feed, lb.	1	5.64	4.96	5.40
	2	5.82	5.77	5.96
	Av.	5.73	5.33	5.68
Feed per lb. gain, lb.	1	2.85	2.98	2.96
	2	2.94	2.94	3.13
	Av.	2.90	2.96	3.05