1979

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Richard C. Wahlstrom
South Dakota State University

George W. Libal

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Richard C. Wahlstrom and George W. Libal

Department of Animal Science
Swine Section

South Dakota State University
A.S. Series 79-27

It is well known that fat is an excellent energy source with a value of approximately 2.25 times that of carbohydrates. Adding fat to swine diets has generally resulted in improvement of feed efficiency, but the effect on growth rate has been less consistent. Some work with the young pig indicates that fat enhances the palatability of young pig diets.

Recently, several dried fat products have appeared on the market. These products are much easier to mix into diets than fat products that have to be added in liquid form. This experiment was conducted to determine the effect of a dried fat product added to young pig diets at two levels. The diets were also fed in both meal and pellet form to obtain information on the effect of the physical form of the diet on pig acceptance and performance.

Experimental Procedure

Two trials were conducted using 96 pigs in each trial. Pigs were weaned at an average weight of 17.5 lb. and allotted to six treatments in each trial on the basis of ancestry and weight. The pigs were housed, four pigs per pen, in an environmentally controlled room during the 4-week trials.

The corn-soybean meal basal diet contained 21% protein and 1.12% lysine. The experimental diets contained a dried fat product that contained 60% fat. All diets were fed as both meal and pellets and were calculated to have a similar calorie:lysine ratio. The composition of the diets is shown in table 1. The data from the two trials were combined and analyzed as one experiment.

Treatments were as follows:

Treatment 1 - Basal diet (meal)
Treatment 2 - 4% added fat product (meal)
Treatment 3 - 8% added fat product (meal)
Treatment 4 - Basal diet (pelleted)
Treatment 5 - 4% added fat product (pelleted)
Treatment 6 - 8% added fat product (pelleted)

Results

The results of this experiment are summarized in tables 2 and 3. Table 2 gives the pig performance data for each of the six treatment groups, while table 3 combines the data to show the effect of type of diet (meal or pelleted) and the effect of level of fat irrespective of type of diet.

As the level of fat product was increased in the diet, feed consumption decreased and feed efficiency was improved in both the meal and pelleted diets (table 2). Pigs fed pelleted diets gained .70 lb. per day which was significantly faster ($P<.05$) than the .64 lb. per day gain of pigs fed the meal diet. The pelleted diets also resulted in a significant ($P<.05$) reduction in feed per gain. Meal-fed pigs required 1.69 and pigs fed pelleted diets 1.63 lb. of feed per pound of gain. The fat product did not affect daily gain significantly. Gains were .67, .69 and .64 lb. per day for pigs fed diets of 0, 4 or 8% fat product, respectively. However, feed consumption was reduced ($P<.05$) and feed/gain decreased significantly ($P<.01$) due to the fat product in the diet. Both feed consumption and feed/gain decreased with each level of fat increase in the diet.

The fat product (Ho-Milc 7-60) contained 7% protein and 60% fat. It mixed into the diet without problem and looked much like a dried milk product. In this experiment, a break-even price for the fat product was 19 cents per pound at the 4% level and 16 cents per pound at the 8% level.

Summary

Two trials were conducted using a total of 192 pigs to evaluate the effects of a dried fat product when fed to young weaned pigs in meal and pelleted diets.

The fat product significantly reduced feed consumption and feed/gain but had no effect on rate of gain. Pigs fed pelleted diets gained faster and required less feed/gain than pigs fed the diets in meal form.

Table 1. Composition of Diets (Percent)

	Basal	4% fat product	8% fat product
Ground corn	64.8	60.8	56.8
Soybean meal (48%)	31.6	31.6	31.6
Fat product[a]	--	4.0	8.0
Dicalcium phosphate	2.2	2.2	2.2
Ground limestone	.7	.7	.7
Trace mineralized salt	.3	.3	.3
L-lysine	--	.014	.027
Premix[b]	.4	.386	.373

[a] Ho-Milc 7-60. Contained 7% protein and 60% fat.

[b] Supplied per lb. of diet: vitamin A, 2000 IU; vitamin D, 200 IU; vitamin E, 3 mg; vitamin K, 1.2 mg; pantothenic acid, 6 mg; niacin, 9.6 mg; choline, 30 mg; vitamin B_{12}, 6 mcg; aureomycin, 50 mg; penicillin, 25 mg; sulfamethazine, 50 mg and Banminth, 454 milligrams.

Table 2. Effect of a Dried Fat Product on Performance of Young Pigs Fed Meal or Pelleted Diets

	Meal			Pellet		
Level of fat product, %	0	4	8	0	4	8
No. of pigs[a]	16	16	16	16	16	16
Avg. initial wt., lb.	17.6	17.4	17.5	17.4	17.5	17.5
Avg. final wt., lb.	35.8	36.2	35.2	37.3	37.9	36.1
Avg. daily gain, lb.	.63	.66	.62	.71	.72	.66
Avg. daily feed, lb.	1.13	1.10	1.00	1.23	1.17	1.07
Feed/gain	1.84	1.66	1.60	1.71	1.63	1.56

[a] Four replicate lots of 4 pigs each.

Table 3. Effect of Feed Processing and Fat Level on Performance of Young Weaned Pigs

	Type of diet		Level of fat product, %		
	Meal	Pellet	0	4	8
No. of pigs	48	48	32	32	32
Avg. initial wt., lb.	17.5	17.5	17.5	17.5	17.5
Avg. final wt., lb.	35.6	37.1	36.4	37.1	35.6
Avg. daily gain, lb.[a]	.64	.70	.67	.69	.64
Avg. daily feed, lb.[b]	1.08	1.15	1.18	1.13	1.03
Feed/gain[a,c]	1.69	1.63	1.77	1.64	1.58

[a] Significant difference (P<.05) due to processing.
[b] Significant difference (P<.05) due to fat level.
[c] Significant difference (P<.01) due to fat level.