



COMPARISON OF DAWE'S BIOGRO SUPER WITH FISHMEAL

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OBJECTIVE:

The objective of this study was to compare the use of Dawe's Biogro Super as a replacement for Fishmeal in finisher diets containing 5% Wheat Bran for pigs from approximately 150 lbs. to 240 lbs.

EXPERIMENTAL DESIGN:

One hundred and forty crossbred pigs (Yorkshire x Duroc x Hampshire) were allotted by litter, sex, and weight to one of 12 pens at weaning. Pigs were allotted at weaning to eliminate any effect from pig handling once the finisher study was started. The pigs were started on a 16% grower diet and when the average pen weight reached approximately 150 lbs., they were switched to a 15% finisher diet. The pigs remained on the finisher diet until they reached 240 lbs. The treatments were as follows:

- 1) Grower: 16% corn/soybean meal based diet containing 5% wheat bran

Finisher: 15% corn/soybean meal based diet containing 5% wheat bran and 2% fishmeal

- 2) Grower: 16% corn/soybean meal based diet containing 5% wheat bran

Finisher: 15% corn/soybean meal based diet containing 5% wheat bran, 1.0% fishmeal and 0.5% Biogro Super

- 3) Grower: 16% corn/soybean meal based diet containing 5% wheat bran

Finisher: 15% corn/soybean meal based diet containing 5% wheat bran and 1% Biogro Super

HOUSING and MANAGEMENT:

The pigs were housed in a monosloped, naturally ventilated, modified open front facility. During the study the pigs were housed in pens that were 6' x 12' which provided an average of 6 sq. ft./pig. There were 16 pens in the room. Six pens on each side of the building were utilized for the study. There were no experimental treatments in any of the end pens, although non experimental pigs were housed in these pens. Pigs had ad libitum access to feed and water.

Pigs were weighed every two weeks at which time the feeders were weighed so that feed intake and feed efficiency could be calculated. As the pigs approached either the 150 lb. weight (switch from grower to finisher) or 240 lbs. (market weight) the pigs were weighed on a weekly basis.

DATA ANALYSIS:

All data were analyzed by Analysis of Variance Procedure. Because the pigs were allotted by weight, the replications were blocked. Means were separated by both Tukey's Studentized Range Test and Scheffe's Test.

RESULTS AND DISCUSSION:

Of the 140 pigs that were originally assigned to this study, three pigs had to be removed. One pig died and the other two were removed because of lack of growth. All three pigs were removed during the time when the pigs were still receiving grower feed. They were not replaced because of lack of pigs of similar size.

Table 1 shows the beginning weight of the pigs by treatment and replication as well as the average pig weight at the time of the switch from grower to finisher diet and the average pig weight at the end of the study. As you can see, there were no differences in weights for any of the treatments at the beginning, time of switch to finisher diet, or at slaughter.

Tables 2, 3 and 4 present the average daily feed intake (lbs/day), average daily gain (lbs/day), and the feed efficiency data, respectively, for the Fishmeal, Fishmeal + Biogro Super, and Biogro Super treatments.

There were no statistical differences ($P>.05$) between any of the treatments for the parameters measured.

Although, it was not significant ($P>.05$), the average daily feed intake for the Biogro Super treatment was numerically greater than that of either the Fishmeal or Fishmeal + Biogro Super treatments. This difference represents a 1.9% improvement in feed intake. As a result of this increase in average daily feed intake, average daily gain was improved by 0.058 lbs/day or 3.4% in Biogro Super treatment as compared to either the Fishmeal or

Fishmeal + Biogro Super treatments. The improvement in average daily gain for the Biogro Super treatment resulted in a numerical improvement (3%) in the feed efficiency for this treatment compared to the Fishmeal treatment.

As mentioned previously, there were no differences ($P>.05$) for any of the parameters measured. Although, there were no significant differences in average daily gain and feed efficiency for the three treatments, the Biogro Super diet increased average daily gain by 3.4% and was 3% more efficient in putting weight onto the pigs. Although, these numbers are not statistically different, it may be that the difference is economically significant. It may be that the 3.4% improvement in average daily gain and 3% improvement in feed efficiency may result in an economic savings.

Overall, the results of this study indicate that Biogro Super can be substituted for fishmeal in the diet for finisher pigs without a decrease in performance. In addition, Biogro Super may improve average daily gain and feed efficiency, which may result in an economic savings.

GENERAL COMMENTS:

The objective of the study was to compare the use of Dawe's Biogro Super to that of Fishmeal in the diet of pigs from approximately 150 lbs. to 240 lbs. containing 5% wheat bran. The diets were designed to be similar to those diets being fed in main land China today. The reason that main land China diets were simulated was that Dawe's is looking at China as a potential market for their Biogro Super product.

I have had the opportunity to travel in China on five different occasions for the U.S. Grains Council. During my travels, I had the opportunity to visit several swine farms and feed mills. I found that the typical finisher diet in China will be corn/soybean meal based, but it will also contain fishmeal and/or other protein sources. In addition, Chinese diets will have a relatively high fiber content because of the common practice of using rice and wheat bran in them.

The results of this study indicate that Biogro Super can indeed be substituted for fishmeal in high fiber diets. In addition, an improvement in average daily gain and feed efficiency may result. Although, we tried to simulate Chinese swine diets, we were not completely able to do so. From what I have seen in China on my visits, I would speculate that the fishmeal that we used in our study was of much better quality than that which is commonly fed in China. Most of the fishmeal that I have seen in China is of poor quality and has not been stored under what I consider would be proper conditions. On many occasions I saw fishmeal that contained a lot of trash and was being stored under high humidity conditions. In the feed mills that I visited, it was common to find bags (usually cloth or burlap) containing fishmeal that had large lumps in it, definable bone residue and fish scale residue, and some of it was even rancid. Based upon these observations and the results of this study, I feel that Biogro Super would make an excellent substitute for fishmeal in China assuming that the cost of Biogro Super is economically competitive with fishmeal.

TABLE 1

BEGINNING WEIGHT

Rep.	1	82.45	82.10	82.05
	2	72.65	73.13	71.71
	3	53.28	53.48	53.48
	4	<u>46.11</u>	<u>45.86</u>	<u>46.79</u>
Ave.		63.62	63.64	63.51

WEIGHT AT START OF STUDY

		<u>Fishmeal</u>	<u>Fishmeal + Biogro Super</u>	<u>Biogro Super</u>
Rep.	1	160.36	156.36	149.82
	2	168.73	169.64	163.83
	3	166.00	155.83	166.33
	4	<u>158.50</u>	<u>150.00</u>	<u>148.91</u>
Ave.		163.40	157.96	157.24

ENDING WEIGHT

		<u>Fishmeal</u>	<u>Fishmeal + Biogro Super</u>	<u>Biogro Super</u>
Rep.	1	242.55	242.64	239.64
	2	245.27	246.40	246.40
	3	249.27	241.00	253.33
	4	<u>246.00</u>	<u>245.33</u>	<u>242.45</u>
Ave.		245.77	243.84	245.46

TABLE 2
AVERAGE DAILY FEED INTAKE
(Finisher)

	<u>Fishmeal</u>	<u>Fishmeal + Biogro Super</u>	<u>Biogro Super</u>
Rep. 1	5.69	4.84	4.60
2	5.20	5.56	5.64
3	5.55	6.31	6.05
4	<u>5.63</u>	<u>5.42</u>	<u>6.22</u>
Ave.	5.52	5.53	5.63

TABLE 3
AVERAGE DAILY GAIN
(Finisher)

	<u>Fishmeal</u>	<u>Fishmeal + Biogro Super</u>	<u>Biogro Super</u>
Rep. 1	1.677	1.584	1.604
2	1.664	1.609	1.852
3	1.530	1.774	1.755
4	<u>1.823</u>	<u>1.799</u>	<u>1.786</u>
Ave.	1.691	1.692	1.749

TABLE 4
FEED EFFICIENCY
(Finisher)

	<u>Fishmeal</u>	<u>Fishmeal & Biogro Super</u>	<u>Biogro Super</u>
Rep. 1	3.39	3.06	2.87
2	3.13	3.33	3.05
3	3.63	3.56	3.45
4	<u>3.09</u>	<u>3.01</u>	<u>3.48</u>
Ave.	3.31	3.24	3.21