SUPPLEMENTING HOG RATIONS WITH SOYBEAN OILMEAL OR SPECIFIC AMINO ACIDS

Soybean oilmeal is an excellent protein supplement for hog rations formulated from oats and barley. This is because soybean oilmeal is high in two amino acids that oats and barley are deficient in. The two amino acids, lysine and methionine are available commercially. Since both oats and barley have crude protein contents close to the National Research Council levels recommended for pigs, the addition of specific amino acids known to be deficient could be expected to give results comparable to supplements based on soybean oilmeal. The advantages of using specific amino acid supplementation are: (1) to reduce transportation costs, (2) to allow more utilization of home grown feeds since oats and barley will supply the nutrients in soybean oilmeal except of lysine and methionine and are available at less cost, (3) to remove the variability of the supply of soybean oilmeal due to a bad crop year.

With this in mind, a trial was initiated in May, 1970 to compare rations based on oats and barley, supplemented with either 44 percent soybean oilmeal or commercial lysine and methionine. A check ration not supplemented was also fed.

In this first year's trial, two lots of different weight pigs were fed and confined in drylot on concrete. A third lot was fed under pasture conditions. Pastures used were spring seeded winter wheat. All rations were processed in a grinder-mixer equipped with a 3/16 inch screen and were self-fed in the meal form. A check lot not supplement with protein was also included. The rations as fed are shown in Table 14.

Table 14. Feed Ingredients of Swine Rations Fed.

	16% Barley-oats Soybean oilmeal	**Lysine methionine barley-oats**	**No protein supplement**
Oats	285 lbs.	320 lbs.	325 lbs.
Barley	565 lbs.	642.5 lbs.	645 lbs.
Soybean oilmeal	120 lbs.	-	-
Di calcium phosphate	12 lbs.	12 lbs.	12 lbs.
Limestone	12 lbs.	12 lbs.	12 lbs.
Trace mineral salt	5 lbs.	5 lbs.	5 lbs.
Fortafeed	1 lb.	1 lb.	1 lb.
Lyamine (50% - L. Lysine)	-	6 lbs.	-
DL –Methionine (99%)	-	1.5 lbs.	-
Vitamin A	30 grams	30 grams	30 grams
Vitamin D	14 grams	14 grams	14 grams
Zinc sulfate	180 grams	180 grams	180 grams
	1000 + lbs.	1000 + lbs.	1000 + lbs.

Table 15. Results of Feeding Rations Not Supplemented or Supplemented With Soybean Oilmeal or Lysine and Methionine.

	Average Initial weight	Average final weight	Days fed	Average daily gain	Feed per hundred-weight gain	Cost per hundred-weight gain
16% Barley-Oats						
Concrete drylot	48.5	215.3	108	1.54	436.3	$ 9.82
Concrete drylot	35.2	205.7	127	1.34	407.0	9.16
Pasture	35.0	217.1	119	1.53	363.5	8.18
Lysine-Methionine						
Concrete drylot	48.6	214.4	108	1.53	443.4	10.20
Concrete drylot	35.5	203.3	127	1.32	382.3	8.79
Pasture	35.9	207.3	126	1.36	384.4	8.84
No Protein Supplement						
Concrete drylot	48.4	196.8	108	1.37	469.7	8.41
Concrete drylot	34.6	169.2	127	1.06	500.7	8.96
Pasture	35.0	218.9	147	1.25	456.8	8.18

Summary

On the basis of one year's results, only general conclusions can be drawn. Soybean oilmeal is an excellent protein supplement for barley oat rations. Using the specific amino acids, lysine and methionine gave results very similar to soybean oilmeal. There was a slightly higher percentage of fiber in the lysine-methionine ration which could effect the pigs at a young age because they would be limited on energy.

Although the non-supplemented rations gave economical gains, the extra time necessary to finish these pigs could be disastrous in times of a falling market.

Continued research in specific amino acid supplementation is planned.