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Influence of Fiber Sources on Weaned Pigs' Performance

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Summary

Yorkshire pigs weaned at 5 to 6 weeks and averaging 25 lb were used to determine effects of diets with increased fiber from ground oats, wheat bran, alfalfa meal, or dried beet pulp on performance and diarrhea. The basal diet (corn-soybean meal fortified) contained 2.2% crude fiber; the diets using more fibrous feeds contained 3.9% fiber.

Average daily gains on the basal and fiber diets were similar, as were the pounds of feed per pound of gain. Pigs fed the ground oats and wheat bran diets had slightly better fecal scores than those fed the other diets. None of the differences in performance or in daily fecal scores was statistically significant. Fiber added by ground oats, wheat bran, dried beet pulp, or alfalfa meal was neither beneficial nor detrimental to the performance of the weaned pigs.

Introduction

Adding fiber to diets of the weaned pig has been suggested as a way to reduce weaning stress and to avoid the lag period in performance normally associated with weaning. Previous research here indicated that weaned pigs can effectively use rations with 40% oats (5.6% fiber) without impairing performance. This experiment evaluated other fiber sources (dried beet pulp, wheat bran, and dehydrated alfalfa meal).

Experimental Procedures

The 135 Yorkshire pigs averaging 25.3 lb were randomly assigned to 15 pens, three replications of five diets. The pigs were housed, nine to a pen, in an environmentally controlled, slatted floor nursery. Each pen (5'x11') contained a two-hole self feeder and a nipple waterer. The fiber sources (ground oats, dried beet pulp, wheat bran, and dehydrated alfalfa meal) were substituted for corn in the basal diet. The basal corn-soybean meal diet contained 22% crude protein, 1.00% lysine, 0.79% calcium, 0.69% phosphorous, and 2.2% crude fiber. Fiber sources were added to the basal diet to provide an additional 1.7% crude fiber (or a total of 3.9% fiber) in the experimental diets.

The feeding trials were conducted 28 days and included the following dietary treatments:

- A. Corn-soybean meal fortified basal diet (2.2% crude fiber)
- B. Corn-soy + 20% ground oats (3.9% crude fiber)
- C. Corn-soy + 10% dried beet pulp (3.9% crude fiber)
- D. Corn-soy + 21.2% wheat bran (3.9% crude fiber)
- E. Corn-coy + 7.6% dehydrated alfalfa meal (3.9% crude fiber)

Results and Discussion

Effects of fiber sources on pig performances are shown in Table 17. Adding fiber to the basal diet did not significantly affect the pigs' gains. Daily feed intake was the same for the basal diet and those diets containing dried beet pulp, wheat bran, and alfalfa meal. Pigs receiving the diet with 20% ground oats ate slightly more than those receiving any of the other diets. Feed efficiency was similar for all treatments. Although diarrhea did not appear to be a major problem during the trial, pigs receiving the oat and wheat bran diets had slightly better fecal scores.

Table 17. Effects of Fiber Source on Performances of Weaned Pigs

Diets:	Basal corn-soy	20% ground oats	10% Dried beet pulp	21.2% wheat bran	7.6% alfalfa meal
No. pigs	27	27	27	27	27
Int. wt., lb	24.2	25.7	26.3	25.9	25.3
Final wt., lb	58.1	60.1	59.3	58.6	59.3
ADG, lb	1.20	1.23	1.18	1.16	1.22
ADFI, lb	2.11	2.31	2.14	2.10	2.18
Feed/gain	1.76	1.87	1.81	1.80	1.79
Diarrhea score ¹	1.80	1.50	1.85	1.55	1.95

¹Average daily pen diarrhea scores based on: 1=firm feces, 2=soft feces, 3=loose feces, and 4=watery feces.