

The Effect of Dietary Fiber Source on Apparent Digestibility of Specific Fiber Components and Other Nutrients

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Swine producers have always maintained an interest in the utilization of by-products in their feeding program as a means of reducing feed cost. Many of the by-products available for use in swine rations are higher in fiber than more traditional feedstuffs. While earlier studies have demonstrated the efficacy of feeding these fibrous feedstuffs to swine, little is known about the digestibility of specific fiber components and their effect on digestibility of other nutrients. We have initiated a series of studies to determine effect(s) of dietary fiber source on digestion of specific fiber components using ileally cannulated pigs.

In an initial trial wheat bran and beet pulp were selected because they are readily available to producers and consist of widely differing fiber components. In this trial three ileally cannulated pigs weighing 160-180 lb were fed diets consisting of a corn-soybean meal basal, basal plus 25 percent wheat bran and basal plus 25 percent beet pulp. Chromic oxide was added as a digesta marker. The experimental design was a 3x3 Latin square with each treatment period consisting of 10 days. Each pig was maintained in an individual metabolism crate and fed twice daily in two equal feedings. Ileal samples were collected 3 hours after feeding until 100 ml of digesta was collected. Fecal samples were collected daily.

In a second trial 10 ileally cannulated pigs were used in a 5x5 Latin square design to determine the effects of semi-purified fiber sources on the apparent digestion of different fiber components and other nutrients. The rations used in this study consisted of: control (corn-soybean meal); control + 10 percent Solka floc, a source of cellulose; control + 10 percent mucilose flakes, a hemi-cellulose source; control + 10 percent guar gum; and control + 10 percent lignin.

Analysis of these samples should provide data on the effects of digestion and absorption of fiber on other nutrients when different fiber sources are added to swine rations. These data should be useful for producers considering fibrous by-product feeds for swine.