

Apparent and standardized ileal crude protein and amino acid digestibility coefficients in four sources of dried distillers grain by growing pigs.

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ABSTRACT: An experiment was conducted to determine the apparent (AID) and standardized (SID) ileal digestibility coefficients for CP and AA in four different samples of dried distillers grain with solubles (DDGS) by growing pigs. The AID for ADF, NDF, and phosphorus was determined as well. The four samples of DDGS were collected from four different ethanol plants located in SD and MN. The four plants are using different processing techniques in the production of DDGS. Four diets based on each of the four samples of DDGS were formulated. In these diets, DDGS was the sole source of CP and AA. A nitrogen-free diet was also included in the experiment. Five growing pigs (initial BW 71.4 kg) were equipped with a T-cannula in the distal ileum and arranged in a 5 x 5 Latin square design with pigs and periods comprising the rows and columns, respectively. In each period, each pig was fed one of the five diets and digesta were collected from the distal ileum. The chemical composition of the four samples of DDGS was relatively similar. However, the AID for CP and all AA except pro in DDGS from two of the plants were higher ($P < 0.05$) than in the samples from the other two plants. The differences in digestibility between the lowest and the highest source were between 12 and 20% dependent on the AA. The endogenous losses of CP and AA were estimated after feeding the N-free diet and SID were calculated. The differences in SID for CP and AA were similar to the differences observed for AID. Relatively large variations in the AID of NDF were also observed for the DDGS from the four sources. The AID for ADF were

between 31 and 50%, while the AID for phosphorus were between 31 and 52%. The results from the experiment indicate that there are large variations in the digestibility of CP and AA in DDGS obtained from different ethanol plants in MN and SD. These differences are likely caused by differences among plants in processing and handling technologies. Because of these differences, it is necessary that the origin is known if DDGS is included in the formulations for swine.

Keywords: Amino acids, Digestibility, Dried distiller's grain with solubles, Phosphorus, Pigs.