

Amino acid and energy digestibility in NutriDense® corn and other cereal grains fed to growing pigs

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Two experiments were conducted to measure the AA and energy digestibilities in NutriDense® corn and compare these values to values obtained for other cereal grains. In Exp. 1, six growing barrows were fitted with a T-cannula in the distal ileum and used to measure apparent (AID) and standardized (SID) ileal digestibility values for CP and AA in NutriDense® corn, yellow dent corn, barley, wheat, and sorghum. Five diets based on each of the cereal grains were formulated and a N-free diet was used as well. Pigs were allotted to a 6 x 6 Latin square design and fed one of each of the six diets during one experimental 7-d period. Digesta were collected from the cannulas for ten h on d 6 and 7. The AID and the SID for CP and AA were calculated for each grain. Results showed that the AID for most indispensable AA are greater ($P < 0.05$) in NutriDense® corn and wheat than in the other cereal grains. The SID for Lys in NutriDense® corn (77.6%) was greater ($P < 0.05$) than in yellow dent corn (68.5%), and sorghum (56.9%), but not different from wheat (75.1%) and barley (71.7%). The SID for Arg and Met in NutriDense® corn also were greater ($P < 0.05$) than in yellow dent corn (88.1 and 87.2% vs. 84.5 and 82.8%, respectively). For the remaining indispensable AA, no differences in SID between NutriDense® corn and yellow dent corn were observed. In Exp. 2, 12 growing barrows were placed in metabolism cages and used to measure the DE and ME of NutriDense® corn and normal corn. Both grains were used in diets that were formulated either without or with supplemented crystalline AA. Therefore, a total of four diets were formulated. Each diet was fed to six pigs in a 2-period switch-over design. Results of this experiment showed that the DE and ME in NutriDense® corn (3,964 and 3,869 kcal/kg DM, respectively) were greater ($P < 0.006$) than in normal corn (3,872 and 3,781 kcal/kg DM, respectively). However, the DE and ME were not influenced by the addition of AA to the diets. It is concluded that NutriDense® corn has a greater value than normal corn in diet formulations because of increased concentrations of digestible Lys, Met, and energy.

Key words: Amino acid digestibility, Energy digestibility, NutriDense® corn.