

The effect of feeding frequency on energy and amino acid digestibility by growing pigs

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An experiment was conducted to determine if the feeding frequency affects the digestibility of energy and AA by growing pigs. Six growing barrows (initial BW: 40.1 kg \pm 2.3 kg) had T-cannulas installed in the distal ileum and were randomly allotted to one of three dietary treatments in a repeated 3 X 3 Latin square design with three animals and three periods. Each period lasted 7 d and all pigs were fed the same corn-soybean meal based diet (18% CP) throughout the experiment. Pigs allotted to Treatments 1 and 2 were provided the diet at a level of three times the energy requirement for maintenance. The feed to pigs on Treatment 1 was provided in one daily meal while the feed to pigs on Treatment 2 was divided into two equal daily meals. Pigs on Treatment 3 were allowed to consume the diet on an ad libitum basis. Fecal samples were collected on d-5 and ileal samples on d-6 and d-7 of each period. The apparent ileal digestibility coefficients (AID) of DM, CP, AA, and energy and the apparent total tract digestibility coefficients (ATTD) of DM and energy were calculated. No differences among treatments were observed for the AID of DM, energy, CP, or any of the AA. In contrast, the ATTD of DM and energy were lower ($P < 0.002$) for pigs that were allowed to consume their feed on an ad libitum basis compared to pigs on the other two treatments (85.1 vs. 87.3 and 88.9% for DM and 83.3 vs. 86.0 and 87.7% for energy). The DE concentration of the diet was calculated as 3,436 kcal per kg for the pigs given free access to feed. This value was lower ($P < 0.001$) than the values calculated for the pigs fed once or twice daily (3,544 and 3,617 kcal per kg, respectively). In conclusion, results of this experiment suggest that the AID for DM, energy, CP, and AA are not influenced by the frequency of feeding, but the TTTD for DM and energy is lower if pigs are fed on an ad libitum basis than if they are fed a restricted amount of feed in one or two daily meals.