
089 Two days of adaptation period may be enough for measuring ileal amino acid digestibility using chromium or titanium as an indigestible index in swine diets. B. G. Kim¹, S. A. Lee^{*2}, and H. H. Stein²,
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The objective was to determine a minimum adaptation period in ileal AA digestibility experiments. Eight barrows with an initial BW of 58.1 kg (SD 4.3) fitted with a T-cannula in the distal ileum were randomly allotted to a 2-period crossover design with 2 diets and 8 pigs in each period. A soybean meal-based diet and an N-free diet were prepared. Both diets contained 0.4% chromium oxide, 0.4% titanium dioxide, and 0.4% Celite as indigestible indexes. A washout diet with no index was provided ad libitum for 7 d before each 9-d experimental period. The diets were provided at 3 times the estimated daily maintenance requirement for energy. In the same experiment, we found that the minimum adaptation period before ileal digesta collection to have constant index concentrations was 3 to 4 d. Therefore, the digestibility and endogenous loss of AA data were pooled from d 5 to 9 (i.e., true values) to compare with the data from d 1, 2, 3, or 4. On d 1, the apparent ileal digestibility (AID) and the standardized ileal digestibility (SID) of all indispensable AA except Met and Trp calculated using Cr were less (mean difference = 4.1 and 3.9% for AID and SID, respectively; $P < 0.05$) than the true values. Except for His on d 2 and Phe on d 4, the AID and SID of all indispensable AA on d 2, 3, and 4 did not differ from the Cr-based true values. On d 1, the AID and SID of all indispensable AA except Ile, Lys, Met, Thr, and Trp calculated using Ti were less (mean difference = 3.2 and 2.5% for AID and SID, respectively; $P < 0.05$) than the true values. Except for His on d 2 and Phe on d 4, the AID and SID of all AA on d 2, 3, and 4 did not differ from the Ti-based true values. The AIA-based AID and SID of all indispensable AA did not differ from the true values, likely due to the large variability in the AIA-based AID and SID of AA (mean SEM of indispensable AA = 7.9%) compared with Cr- or Ti-based AA digestibility (mean SEM of indispensable AA = 1.5 or 1.2%, respectively). In conclusion, 2 d of adaptation period may be sufficient for ileal AA digestibility experiments with Cr or Ti as an indigestible index.

Key Words: adaptation period, ileal digestibility, indigestible index
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