
297 Effects of Inclusion Rate of High Fiber Dietary Ingredients on Apparent Ileal, Hindgut, and Total Tract Digestibility of Dry Matter and Nutrients in Mixed Diets Fed to Growing Pigs. D. M. D. L. Navarro^{*1}, E. M. A. M. Bruininx², L. de Jong², H. H. Stein¹, ¹*University of Illinois at Urbana-Champaign, Urbana, IL*, ²*Agrifirm Innovation Center, Royal Dutch Agrifirm, Apeldoorn, Netherlands*

The objective was to determine the apparent ileal digestibility (AID), apparent hindgut disappearance (AHD), and the apparent total tract digestibility (ATTD) of DM, energy, and nutrients by growing pigs fed mixed diets containing increasing concentrations of dietary fiber. Twenty ileal-cannulated pigs (BW: 30.64 ± 2.09 kg) were allotted to a replicated 10 × 4 incomplete Latin Square design with 10 diets and 4 26-d periods. A basal diet based on corn and soybean meal (SBM) and a corn-SBM diet with 30% corn starch were formulated. Six diets were formulated by replacing 15 or 30% corn starch by 15 or 30% corn germ meal (CGM), sugar beet pulp (SBP), or wheat middlings (WM). Two additional diets were formulated by including 15 or 30% canola meal (CM) in a diet containing corn, SBM, and 30% corn starch. Effects of adding 15 or 30% of each fiber source to the corn starch diet were analyzed using orthogonal polynomial contrasts. Results indicated a linear reduction ($P < 0.001$) of AID of DM from 76.8% in the corn starch diet to 73.7 and 65.6%, 65.9 and 56.0%, 61.4 and 48.6%, and 66.1 and 62.1% in diets containing 15 and 30% CM, CGM, SBP, or WP. The ATTD of DM linearly decreased ($P < 0.05$) from 93.6% in the corn starch diet to 90.3 and 87.7%, 89.7 and 86.2, 90.7 and 86.8%, and 89.5 and 85.7% as CM, CGM, SBP, or WM were included by 15 or 30% in the diets. The AID of CP was linearly reduced ($P < 0.05$) by the inclusion of 15 and 30% CM (76.8 and 70.1%), CGM (73.6 and 66.6%), SBP (74.6 and 70.0%), and WM (74.9 and 71.0%) compared with the corn starch diet (79.6%). The ATTD of CP was also reduced (Linear, $P < 0.05$) with increasing inclusion of test ingredients in the diet. The AHD of DM linearly increased ($P < 0.05$) from 16.6% in the corn starch diet to 16.5 and 22.2%; 24.0 and 30.1%, 29.2 and 38.1%, and 23.3 and 21.3% as CM, CGM, SBP, or WM were included by 15 or 30% in the diets. In conclusion, increasing concentrations of fiber in the diet may result in increased hindgut fermentation of some nutrients but this may also reduce AID and ATTD of DM and CP.

Key Words: Digestibility, Inclusion rate, Pigs