

232 Digestibility of GE and TDF in diets containing novel carbohydrates fed to growing pigs. S. K. Cervantes-Pahm* and H. H. Stein, *University of Illinois, Urbana.*

An experiment was conducted to determine the apparent ileal (AID) and apparent total tract (ATTD) digestibility and the hindgut disappearance (HGD) of total dietary fiber (TDF) and GE in pig diets containing 4 novel carbohydrates. The novel carbohydrates included 2 starches with 60 or 75% resistant starch (RS 60 and RS 75, respectively), soluble corn fiber (SCF), and biogum (BG). Solka floc was included as a control. A basal diet based on maltodextrin and casein was formulated and 5 diets were formulated by substituting 10% maltodextrin with 10% RS 60, RS75, SCF, BG, or solka floc. Twelve pigs (20.0 ± 0.98 kg) with ileal canulas were used in a replicated 6 × 6 Latin square design with 6 diets and 6 9-d periods in each square. Fecal and ileal samples were collected on d 6–7 and d 8–9, respectively. There were 12 observations per diet. Results indicated that the AID of TDF in the BG diet (46.4%) was not different from that in the diet containing RS 60 (37.7%), but greater ($P < 0.001$) than in all other diets (range: -11.4 to 25.3%). The ATTD of TDF (range: 30.5 to 61.8%) in diets containing solka floc, RS 60, RS 75, and BG were not different, but these values were greater ($P < 0.05$) than the ATTD of TDF in the control diet and the diet containing SCF (-68.1 and -24.2%, respectively). The HGD of TDF in the control diet (-56.2%) was also less ($P < 0.05$) than in all other diets and the HGD of TDF was greater ($P < 0.05$) in the diets containing RS60 and RS75 than in the SCF-diet. The AID of GE in diets containing RS 60, RS 75, SCF, and BG (range: 88.5 to 92.2%) were less ($P < 0.05$) than in the control diet (96.9%), but the AID of GE in the diet containing solka floc (85.9%) was the least ($P < 0.001$) among all the diets. The ATTD of GE in diets containing RS 60, RS 75, SCF, and BG (range 92.6 to 95.7%) were not different from the ATTD of GE in the control diet (94.6%), but the ATTD of GE in the solka floc diet (91.1%) was less ($P < 0.05$) than in the control diet and in diets containing RS 60 or SCF. The HGD of GE was also less ($P < 0.05$) in the control diet (-2.2%) and the BG diet (0.3%) than in all other diets (4.3 to 5.2%). In conclusion, addition of 10% RS 60, RS 75, SCF, or BG to a maltodextrin-based diet reduced the AID, but not the ATTD, of GE in the diets.

Key Words: carbohydrates, energy, pigs, total dietary fiber