
0924 Effects of microbial phytase on the apparent and standardized total tract digestibility of calcium in milk co-products fed to growing pigs. Y. She*¹, D. Li², and H. H. Stein¹, ¹*University of Illinois Urbana-Champaign, Urbana*, ²*CAU, Beijing, China*.

The objective of the experiment was to determine effects of microbial phytase on the apparent total tract digestibility (ATTD)

and the standardized total tract digestibility (STTD) of Ca in milk co-products fed to growing pigs. Sixty-four growing barrows (average initial BW: 15.97 ± 3.11 kg) were allotted to a randomized complete block design with 8 diets, 2 blocks, and 4 pigs per treatment in each block. A basal diet based on corn, potato protein isolate, and soybean oil was formulated. Three additional diets were formulated by adding whey powder, whey permeate, or skim milk powder to the basal diet. All diets were formulated without or with 1000 units per kilogram of microbial phytase for a total of 8 diets. All diets were formulated to contain the same concentration of Ca and total P. The basal endogenous loss of Ca was assumed to be 0.123 g/kg DMI. Feces were collected quantitatively for 5 d based on the marker-to-marker approach after a 7-d adaptation period. Results indicated that the STTD of Ca in whey powder, whey permeate, and skim milk powder were 96.18, 52.52, and 95.94% without phytase, respectively, and 94.43, 73.12, and 98.90% with phytase, respectively. Regardless of inclusion of microbial phytase, the ATTD and STTD of Ca in whey powder and skim milk powder were greater ($P < 0.05$) than in whey permeate. Inclusion of microbial phytase increased ($P < 0.05$) the ATTD and STTD of Ca in the whey permeate diet. Microbial phytase also increased ($P < 0.05$) the ATTD of P in the whey powder diet from 79.31 to 81.29%, in the whey permeate diet from 64.17 to 73.05%, and in the skim milk powder diets from 80.15 to 86.40%. Regardless of inclusion of microbial phytase, the ATTD of P was greater ($P < 0.001$) in whey powder and skim milk powder diets than in whey permeate diets. In conclusion, skim milk powder and whey powder had greater ATTD and STTD of Ca than whey permeate, but microbial phytase increase digestibility of Ca in whey permeate. The ATTD of P was also greater in skim milk powder and whey powder diets than in the whey permeate diet.

Key Words: calcium, milk co-products, pigs