test ingredients, and CE had greater STTD of P than PKE, PKM, and SBM when fed to growing pigs.

Key words: alternative feedstuffs, phosphorus, pigs

93 Effects of phytase on standardized total tract digestibility of P in copra expellers, palm kernel expellers, and palm kernel meal fed to growing pigs. B. L. Almaguer*[1], R. C. Sulabo[2], and H. H. Stein[2], [1]*Universidad Autónoma de Querétaro, Mexico,* [2]*University of Illinois, Urbana.*

A total of 66 barrows (initial BW: 27 ± 3 kg) were used to determine the effects of phytase on standardized total tract digestibility (STTD) of P in copra expellers (CE), Asian palm kernel expellers from Indonesia (PKE-IN), African palm kernel expellers from Costa Rica (PKE-CR), African palm kernel meal from Costa Rica (PKM), and in soybean meal (SBM). Pigs were housed individually in metabolism cages and allotted to a randomized complete block design with 11 diets and 6 replicate pigs per diet. Five diets were formulated by mixing cornstarch and sucrose with CE, PKE-IN, PKE-CR, PKM, or SBM. Five additional diets identical to the initial 5 diets with the exception that they contained 500 units of phytase (OptiPhos 2000, Enzyvia, Sheridan, IN) were formulated. A P-free diet was used to measure basal endogenous P losses (EPL). Feces were collected for 5 d based on the marker to marker approach after a 5-d adaptation period. Analyzed total P in CE, PKE-IN, PKE-CR, PKM, and SBM was 0.52, 0.51, 0.53, 0.54, and 0.67%, respectively. Phytate P was calculated to be 0.22, 0.35, 0.38, 0.32, and 0.44% in CE, PKE-IN, PKE-CR, PKM, and SBM, respectively. Addition of phytase increased ($P < 0.05$; SEM = 5.0) the ATTD of P from 60.6 to 80.8, 39.1 to 56.5, 38.2 to 59.9, 48.9 to 64.1, and 48.7 to 73.5% in CE, PKE-IN, PKE-CR, PKM, and SBM, respectively. The basal EPL was estimated to be 216 ± 70 mg/kg DMI. The STTD of P increased ($P < 0.05$; SEM = 5.7) from 70.6 to 90.3, 49.4 to 66.4, 48.7 to 69.9. 57.9 to 73.5, and 57.3 to 81.1% in CE, PKE-IN, PKE-CR, PKM, and SBM, respectively, with added phytase. In summary, added phytase increased P digestibility of all the