

PKM. In summary, the digestibility of AA and energy is less in copra and palm kernel ingredients than in SBM.

Key Words: amino acids, alternative feedstuffs, energy, pigs

164 Phosphorus and amino acid digestibility in fermented and conventional soybean meal fed to weanling pigs. O. J. Rojas* and H. H. Stein, *University of Illinois, Urbana.*

Two experiments were conducted to measure the apparent AA and P digestibility in US-produced fermented soybean meal (FSBM) fed to weanling pigs. In Exp 1, 30 barrows (initial BW: 14.0 ± 2.28 kg) were allotted to randomized complete block design with 5 diets and 6 pigs per diet. Four diets were formulated to contain FSBM or conventional soybean meal (SBM-CV) and either 0 or 500 units/kg of microbial phytase (Optiphos 2000, Enzyvia, Sheridan, IN). The only sources of P in these diets were FSBM and SBM-CV. A P-free diet that was used to estimate basal endogenous losses of P was also formulated. Feces were collected for 5 d after a 5 d adaptation period. The standardized total tract digestibility (STTD) of P increased ($P < 0.001$) from 65.5 to 71.9% and from 46.1 to 71.4% in pigs fed FSBM and SBM-CV, respectively, when phytase was added to the diets. The STTD of P was also greater ($P < 0.001$) in FSBM than in SBM-CV if no phytase was used, but that was not the case if phytase was added to the diet (soybean meal \times phytase interaction; $P < 0.001$). In Exp 2, 8 barrows (initial BW: 10.4 ± 0.47 kg) were equipped with a T-cannula in the distal ileum and randomly allotted to a replicated 4×4 Latin square with 4 diets and 4 periods per square. Three cornstarch-based diets were formulated with FSBM, SBM-CV, or fish meal as the only source of AA in each diet. An N-free diet that was used to estimate basal endogenous losses of CP and AA was also formulated. Each experimental period lasted 7 d and ileal digesta were collected on d 6 and 7. The standardized ileal digestibility (SID) of all indispensable AA except Lys, Thr, and Trp was greater ($P < 0.001$) in FSBM than in fish meal. The SID of Met and Val were also greater ($P < 0.05$) in FSBM than in SBM-CV, but for the remaining indispensable AA, no differences between FSBM and SBM-CV were observed. In conclusion, the STTD of P in FSBM is greater than in SBM-CV, but the SID of most AA is not different between the 2 ingredients.

Key Words: AA digestibility, fermented soybean meal, p digestibility, soybean meal

163 Amino acid digestibility and energy content of copra expellers, palm kernel expellers, palm kernel meal, and soybean meal fed to growing pigs. R. C. Sulabo,* W. S. Ju, and H. H. Stein, *University of Illinois, Urbana.*

Two experiments were conducted to determine the apparent (AID) and standardized (SID) ileal digestibility of AA (Exp. 1) and the concentration of DE and ME (Exp. 2) 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). In Exp. 1, 6 barrows (BW: 34 ± 1.4 kg) were randomly allotted to a 6×6 Latin square design with 6 diets and 6 periods. Five diets contained CE, PKE-IN, PKE-CR, PKM, or SBM as the sole source of AA. A N-free diet was used to calculate endogenous losses of AA and protein. Soybean meal had greater ($P < 0.05$) SID of CP and all indispensable AA than CE, PKE-IN, and PKM. The SID of CP and all indispensable AA except Leu, Met, Phe, Trp, and Val was also greater ($P < 0.05$) in SBM than in PKE-CR. The SID of CP and most indispensable AA in CE, PKE-IN, and PKE-CR were not different, but the SID of Arg, Ile, Leu, Lys, Met, Phe, and Val was less ($P < 0.05$) in PKM than in PKE-CR, but not different from the values obtained for CE and PKE-IN. In Exp. 2, 48 barrows (BW: 35 ± 3.0 kg) were housed individually in metabolism cages and allotted to a randomized complete block design with 6 diets and 8 replicate pigs per diet. A corn-based basal diet and 5 diets containing 70% of the basal diet and 30% of CE, PKE-IN, PKE-CR, PKM, or SBM were formulated. Soybean meal had greater ($P < 0.05$) ATTD of energy (91.2 vs. 87.2, 83.2, 81.5, and 81.6%) and a greater concentration of DE (4,612 vs. 4,013, 3,628, 3,316, and 3,232 kcal/kg DM) and ME (4,380 vs. 3,804, 3,488, 3,199, and 3,092 kcal/kg DM) than CE, PKE-IN, PKE-CR, and PKM, respectively. Copra expellers also had greater ($P < 0.05$) ATTD of energy and DE than all 3 sources of PKM and greater ($P < 0.05$) ME than PKE-CR and PKM. The ME in PKE-IN and PKE-CR was also greater ($P < 0.05$) than the ME in