Amino acid digestibility and energy concentration in soybean meal produced from high protein, high digestible, or conventional varieties of soybeans and fed to weanling pigs. K. M. Baker* and H. H. Stein, University of Illinois, Urbana.

Two experiments were conducted using 3 sources of soybean meal (SBM). The SBM were produced from high-protein (SBM-HP), high digestible (SBM-HD), and conventional (SBM-CV) varieties of soybeans. The 3 SBM contained 54.9, 53.6 and 47.5% CP, respectively. The standardized ileal digestibility (SID) of AA in the 3 ingredients was measured using 8 barrows (initial BW: 14.3 ± 1.23 kg BW) that were equipped with a T-cannula in the distal ileum and allotted to a replicated 4 × 4 Latin square design with 4 periods and 4 diets per square. Three diets contained SBM-HP, SBM-LO or SBM-CV as the sole source of AA. The fourth diet was a N-free diet that was used to determine basal ileal endogenous losses of AA. Each period lasted 7 d and ileal digesta were collected on d 6 and 7 of each period. Results showed that the SID for all AA, except Pro, was not different (P < 0.05) among the 3 sources of SBM. The DE and ME in the 3 sources of SBM were measured using 24 barrows (initial BW: 11.9 ± 1.24 kg BW) that were placed in metabolism cages and randomly allotted to 4 diets. A corn-based diet and 3 diets containing corn and SBM-HP, corn and SBM-LO, or corn and SBM-CV were formulated. Urine and feces were collected over a 5-d period following a 7-d adaptation period. The DE and ME in each source of SBM were calculated using the difference procedure. The concentration of DE in SBM-HP, SBM-LO and SBM-CV was 4,349, 4,283, and 4,367 kcal/kg DM, respectively. These values were not different from the DE of corn (4,100 kcal/kg DM). The concentration of ME was 4,138, 4,047, and 4,244 kcal/kg DM in SBM-HP, SBM-LO, and SBM-CV, respectively. These values were not different. The ME of corn (4,053 kcal/kg DM) was not different from the ME of any of the SBM. It is concluded that the SID values for SBM-HP and SBM-LO are similar to the SID values for SBM-CV and there is no difference in DE and ME values among the 3 meals.

Key Words: amino acid digestibility, energy concentration, soybean meal