

181 Amino acid digestibility and energy concentration in full fat soybeans from conventional, high protein, or low oligosaccharide varieties and in soybean meal fed to weanling pigs. K. M. Baker*, B. G. Kim, and H. H. Stein, *University of Illinois, Urbana.*

Two experiments were conducted using 3 sources of full fat soybeans (FFSB) and 1 source of soybean meal (SBM). The FFSB were produced from conventional (FFSB-CV), high-protein (FFSB-HP), and low oligosaccharide (FFSB-LO) varieties of soybeans that contained 37.6, 44.6, and 39.0% CP, respectively. The SBM was produced from a conventional variety of soybeans and contained 49.7% CP. The standardized ileal digestibility (SID) of AA in the 4 ingredients was measured using 10 barrows (10.1 ± 1.82 kg BW) that were equipped with a T-cannula in the distal ileum and allotted to a replicated 5×5 Latin square design with 5 periods and 5 diets per square. Three diets contained FFSB-CV, FFSB-HP, or FFSB-LO and 1 diet contained SBM as the sole source of AA. An N-free diet 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. The SID for Leu, Lys and Phe in FFSB-CV were greater ($P \leq 0.05$) than in SBM, but no differences were observed in the SID of AA between FFSB-HP, FFSB-LO and SBM. The ME in the 3 sources of FFSB and SBM were measured using 40 barrows (18.5 ± 1.54 kg BW) that were placed in metabolism cages and randomly allotted to 5 diets. A corn-based diet and 4 diets containing corn and FFSB-CV, corn and FFSB-HP, corn and FFSB-LO, or corn and SBM were formulated. Urine and feces were collected over a 5-d period following a 7-d adaptation period. The ME in each source of FFSB and in SBM were calculated using the difference procedure. The concentration of ME in FFSB-CV, FFSB-HP, FFSB-LO, and in SBM was 4,990, 4,515, 4,769, and 3,970 kcal/kg DM, respectively. All these values were different ($P \leq 0.05$). We conclude that FFSB-CV has a greater SID of Leu, Lys, and Phe and a greater concentration of ME than SBM if fed to weanling pigs. Likewise, the ME in FFSB-HP and FFSB-LO is greater than in SBM.

Key Words: amino acids, energy, full fat soybeans