

144 Phosphorus and energy digestibility in enzyme treated soybean meal. K. P. Goebel* and H. H. Stein, *University of Illinois, Urbana.*

Two experiments were conducted to measure P and energy digestibility in soybean meal (SBM) that had been enzyme treated to remove antigens in the meals. The apparent total tract digestibility (ATTD) of P was measured in Exp. 1 in conventional SBM (SBM-CV) and in 2 enzyme treated SBM (HP-310 and HP-340; Hamlet Protein, Horsens, Denmark). During production, HP-310 had been treated with an enzyme mixture containing no phytase while HP-340 was treated with an enzyme mixture that contained microbial phytase. Three diets containing SBM-CV, HP-310, and HP-340 as the only source of P were formulated. Three additional diets were formulated by adding 500 units of microbial phytase (Optiphos 2000; Enzyvia, Sheridan, IN) to each of the original diets. Thirty-six barrows (BW: 21.9 kg) were placed in metabolism cages and randomly allotted to the 6 diets. Pigs were fed experimental diets for 14 d and feces were collected during the final 5 d. The ATTD of P in all SBM was greater ($P \leq 0.05$) as phytase was included in the diet (79.5 vs. 65.5, 77.7 vs. 59.8, and 87.7 vs. 83.8% for SBM-CV, HP 310, and HP 340, respectively). The ATTD of P in HP-340 was greater ($P \leq 0.05$) than in the other 2 meals. In Exp. 2, the DE and ME in corn, SBM-CV and in 2 sources of enzyme treated SBM (HP-200 and HP-300) were measured using 28 barrows (BW: 16.8 kg). A corn-diet (96.45% corn) and 3 diets containing corn and each source of SBM were formulated. Vitamins and minerals were included in all diets. Pigs were placed in metabolism cages and randomly allotted to the 4 diets. The experiment lasted 14 d and feces were collected during the last 5 d. The DE in SBM-CV, HP-200, and HP-300 was 4,347, 4,333, and 4,316 kcal/kg DM, respectively. These values were not different, but they were greater ($P \leq 0.05$) than the DE in corn (3,891 kcal/kg DM). The ME was 3,980, 3,926, 3,914, and 3,780 kcal/kg DM in SBM-CV, HP-200, HP-300, and corn, respectively. These values were not different. It is concluded that enzyme treatment of SBM to remove antigens does not change the digestibility of P or energy in the meals, but if microbial phytase is included in the enzyme treatment, P digestibility is increased.

Key Words: digestibility, pigs, soybean meal