87 Effects of formulating diets for weanling pigs on a standardized total tract digestibility (STTD) of P basis. F. N. Almeida* and H. H. Stein, *University of Illinois*, *Urbana*.

Two experiments were conducted to test the hypothesis that pigs fed diets that are equal in standardized total tract digestible (STTD) P will perform equally well regardless of the total P concentration in the diets, and that the addition of microbial phytase, distillers dried grains with solubles (DDGS), or a combination of phytase and DDGS will result in a reduction in P excretion from the pigs. Diets were formulated on the basis of the STTD of P for each ingredient that had been measured in a previous experiment. Four corn-soybean meal (SBM) based diets were formulated to contain 0.32% STTD P and used in a 2 x 2 factorial design with 2 levels of phytase (0 or 500 units/kg; Optiphos 2000, Enzyvia, Sheridan, IN) and 2 levels of DDGS (0 or 20%). Dicalcium phosphate (DCP) was included in the diets at levels of 1.15 and 0.35% (corn-SBM diets without and with phytase, respectively), and 0.65 and 0% (corn-SBM-DDGS diets without and with phytase, respectively). In Exp. 1, 160 pigs (initial BW: 11.25 ± 1.95 kg) were fed the 4 diets for 21 d and results showed that inclusion of phytase in the diet containing no DDGS tended ($P \leq 0.10$) to decrease G:F, but inclusion of 20% DDGS to the diets tended ($P \leq 0.10$) to increase ADG, ADFI, and final BW. In Exp. 2, 24 pigs (initial BW: 14.6 ± 1.4 kg) were placed in metabolism cages and fed the 4 diets that were used in Exp. 1. Feces and urine were collected quantitatively for 5 d after a 5 d adaptation period. The apparent total tract digestibility (ATTD) of P increased ($P \leq 0.01$) from 56.1 to 71.5% in the corn-SBM diet and from 62.3 to 74.1% in the corn-SBM-DDGS diet when phytase was added to the diet. The inclusion of DDGS to the corn-SBM diet also increased ($P \leq 0.01$) the ATTD of P. Phytase, DDGS, or the combination of phytase and DDGS, reduced ($P \leq 0.01$) P excretion. In conclusion, diets for weanling pigs may be formulated based on STTD values for P without compromising pig performance, and the combination of phytase and DDGS eliminates the need for the inclusion of DCP in the diet. Dietary phytase, DDGS, and the combination of phytase and DDGS will reduce P excretion from weanling pigs.

Key Words: excretion, phosphorus, pigs