0974 Effect of increasing concentrations of digestible calcium and digestible phosphorus on apparent total tract digestibility of calcium and phosphorus by pigs. J. C. González-Vega*[1], C. L. Walk[2], M. R. Murphy[1], and H. H. Stein[1], *[1] University of Illinois at Urbana-Champaign, Urbana, [2]AB Vista, Marlborough, United Kingdom.*

Two experiments were conducted to determine effects of increasing concentrations of digestible Ca and digestible P on apparent total tract digestibility (ATTD) of Ca and P in diets fed to pigs. In Exp. 1, 6 diets were formulated to contain 0.36% standardized total tract digestible (STTD) P and 0.32, 0.40, 0.48, 0.56, 0.64, or 0.72% STTD Ca, by including increasing quantities of calcium carbonate at the expense of cornstarch. Two additional diets contained 0.72% STTD Ca and 0.33% or 0.40% STTD P. A total of 80 pigs (initial BW: 13.12 ± 1.79 kg) were placed in metabolism crates and randomly allotted to the 8 diets with 10 replicate pigs per diet in a randomized complete block design. Results indicated that the ATTD of Ca and the ATTD of P decreased (linear, $P < 0.001$) as dietary STTD Ca increased. However, increasing dietary STTD P did not affect ATTD of Ca, but the ATTD of P increased (linear, $P < 0.05$) as dietary STTD P increased. In Exp. 2, 20 corn-soybean meal based diets were formulated with diets containing 4 concentrations of STTD P (0.15, 0.31, 0.39, or 0.47%) and 5 concentrations of STTD Ca (0.13, 0.27, 0.42, 0.57, or 0.72%). A total of 120 pigs (initial average BW: 29.45 ± 2.15 kg) were placed in metabolism crates and randomly allotted to the 20 diets in 6 blocks with 1 pig per diet in each block. Results indicated that ATTD of Ca in diets linearly increased ($P = 0.009$) as concentration of STTD Ca increased, but was not affected by the concentration of STTD P. However, the ATTD of P linearly decreased ($P < 0.001$) as the concentration of STTD Ca increased, but linearly increased ($P < 0.001$) as the concentration of STTD P increased. In conclusion, for pigs between 11 and 50 kg, the ATTD of Ca varies by the concentration of STTD Ca in diets, but is not affected by the concentration of STTD P. However, the ATTD of P is negatively affected by increasing concentration of STTD Ca, but increases as concentration of STTD P increases.

Key Words: calcium, phosphorus, pigs