NONRUMINANT NUTRITION:
FAT, FIBER, FERMENTATION, AND RESIDUAL FEED INTAKE

0465 Effect of fiber and fat on calculated values for standardized total tract digestibility of calcium in fish meal. J. C. González-Vega*[1], C. L. Walk[2], and H. H. Stein[1], *[1]University of Illinois at Urbana-Champaign, Urbana, [2]AB Vista Feed Ingredients, Marlborough, UK.*

The objectives of the experiment were to determine the effect of fiber and fat on the standardized total tract digestibility (STTD) of Ca in fish meal and to evaluate the effect of type

of diet (cornstarch-based diet vs. corn-based diet) and digestibility procedure (direct procedure vs. difference procedure) on calculated values for STTD of Ca in fish meal. Seventy growing pigs (BW: 19.4 ± 1.0 kg) were randomly allotted to 7 diets with 10 pigs per treatment. Two diets were formulated to determine the effect of fiber on STTD of Ca in fish meal: (1) cornstarch-based diet + fish meal and (2) cornstarch-based diet + fish meal + Solka floc. Two additional diets were formulated to determine the effect of fat on STTD of Ca: (3) corn-based diet + fish meal + 1% fat and 4) corn-based diet + fish meal + 7% fat. To evaluate the effect of type of diet on the STTD of Ca in fish meal, diets 1 and 3 were compared. The STTD of Ca in fish meal was also determined using the difference procedure with a corn-soybean meal diet (0.33% Ca) and a corn-soybean meal-fish meal diet (0.89% Ca). A Ca-free diet was used to determine basal endogenous losses of Ca. Results indicated that fiber increased ($P < 0.001$) the STTD of Ca, but the STTD of Ca was not affected by inclusion of fat in the diet. The STTD of Ca (88.99%) in the corn-based diet was greater ($P < 0.05$) than in the cornstarch-based diet (45.79%). When comparing the direct and the difference procedure, the greatest ($P < 0.05$) values for the STTD of Ca in fish meal were obtained in pigs fed the corn-based diet using the direct method, followed by values calculated by difference procedure (77.66%; $P < 0.05$), and the least ($P < 0.05$) values were obtained in pigs fed the cornstarch-based diet using the direct method. In conclusion, fiber increased the STTD of Ca, but inclusion of fat did not affect the STTD of Ca. Values for the STTD of Ca were influenced by the type of diet and by the digestibility procedure used. These data indicate that values for the ATTD or the STTD of Ca obtained in synthetic diets may not always be representative for the ATTD and the STTD of Ca in practical corn-soybean meal diets.

Key Words: calcium digestibility, fish meal, pigs