

- 275 Comparison between a Novel Phytase and a Commercial Phytase on Growth Performance and Bone Measurements in Diets Fed to Growing Pigs.** C. J. Munoz Alfonso*¹, L. Blavi¹, J. N. Broomhead², H. H. Stein³, ¹*University of Illinois at Urbana-Champaign, Urbana, IL*, ²*Agrivida, Medford, MA*, ³*University of Illinois Urbana-Champaign, Urbana, IL*

An experiment was conducted to compare effects of a novel phytase (GraINzyme, Agrivida, Woburn, MA) with a commercial phytase (AstraPhy, Danisco Animal Nutrition, Marlborough, UK) on growth

performance and bone parameters. A total of 48 individually housed pigs (initial BW: 11.15 ± 0.85 kg) were randomly allotted to 6 diets with 8 replicate pigs per diet. Treatment diets were fed for 28 d and included a positive control diet (**PC**; 0.70% Ca and 0.59% P) that met requirements for all nutrients (NRC, 2012), a negative control (**NC**) diet that was similar to PC except that Ca and P were reduced to 0.50 and 0.41%, respectively, and NC supplemented with 500 or 1,000 phytase units (**FTU**) per kg diet of AxtraPhy or GraINzyme phytase. All pigs were euthanized on the last d of the experiment to collect the left femur. Means were calculated using the LSMeans statement in SAS and means were compared using contrast statements. The pig was the experimental unit. Pigs fed PC had greater ($P < 0.01$) final BW (32.26 vs. 27.17 kg), ADG (749 vs. 564 g), G:F (0.6 vs. 0.47), bone ash (16.71 vs. 7.24 g and 50.25 vs. 41.44 %), bone Ca (6.1 vs. 2.63 g) and bone P (2.83 vs. 1.22 g) than pigs fed the NC diet. There were no differences ($P > 0.05$) in final BW, ADG, ADFI, or G:F among pigs fed 1,000 FTU/kg of AxtraPhy or 1,000 FTU/kg GraINzyme or the PC diet. Differences for G:F among pigs fed 500 FTU/kg of AxtraPhy or 500 FTU/kg GraINzyme or the PC diets were also not observed (0.53, 0.56, and 0.60, respectively; $P > 0.05$). However, bone ash in g, bone Ca in g, and bone P in g in pigs fed diets with 1,000 FTU/kg of AxtraPhy (13.60, 4.99, and 2.32 g, respectively) or 1,000 FTU GraINzyme (11.16, 4.05, and 1.87 g, respectively) were lower ($P < 0.05$) than for pigs fed the PC diet (16.71, 6.10, and 2.83 g, respectively). In conclusion, by adding the novel GraINzyme phytase to a diet deficient in Ca and P, growth performance increased to the same degree as obtained by using a commercial phytase, but that was not the case for bone mineralization.

Key Words: phytase, growing, pigs