245 Xylanase responses on apparent ileal digestibility of nutrients, fiber and Energy in growing pigs fed corn, 30% corn co-products and soybean meal based diets as influenced by microbial phytase and ccclimatization period. E. Kiarie[1], Y. Liu[2], M. C. Walsh[1], H. H. Stein[2], L. Payling[*1], *[1]Danisco Animal Nutrition, DuPont Industrial Biosciences, Marlborough, UK, United Kingdom, [2]University of Illinois at Urbana-Champaign, Urbana.*

Effects of fiber degrading enzymes on improving nutrient utilization are not well understood in the context of phytase and acclimatization period to the experimental diet. A total of 16 pigs (initial BW: 60.1 ± 2.8 kg) equipped with a terminal ileum T-cannula were used to evaluate the xylanase response as influenced by phytase and acclimatization period. Two basal corn, corn distillers grains with solubles, corn germ meal and soybean meal based diets were formulated, either with mono calcium phosphate or phytase (500 FTU/kg Axtra® PHY). The diets were fed with or without xylanase (4000 U/kg). Enzymes were supplied by Danisco UK Ltd. All diets had TiO2 as indigestible marker. The experiment was conducted in a 2 period changeover design. Periods 1 and 2 were 11 and 19d long respectively, and the last 2d in each period were for collection of ileal digesta samples. There were 4 replicates per diet in each period. Digesta samples were used to calculate apparent ileal digestibility (AID) of dry matter (DM), gross energy (GE), crude protein (CP), acid detergent fiber (ADF), neutral detergent fiber (NDF) and starch. Data were subjected to GLM procedures of SAS in a model that included the main effects of phytase, xylanase, acclimatization period, and associated 2-way interactions. The 3-way interactions proved nonsignificant ($P > 0.10$) so were dropped from the model. Interactions were observed between period and xylanase for AID of CP (*P*

= 0.013) and phytase; and xylanase on AID of ADF ($P = 0.04$). Xylanase improved AID of CP in period 2 but not period 1, and AID of ADF was lower for the diet without additives. The AID of DM (66.5 vs. 63.1%, $P = 0.01$) and GE (68.0 vs. 64.5%; $P = 0.01$) were higher in period 1 than period 2. Phytase fed pigs had higher ($P < 0.05$) AID of DM, NDF and ADF relative to non-phytase fed pigs, but had no effect on AID of GE. Compared to control pigs, xylanase fed pigs showed 4.5% higher AID of GE (68.5 vs. 64%, $P = 0.002$) linked to increased AID of DM (66.2 *vs.* 63.4%, $P = 0.04$), CP (70.4 vs. 67.4%, $P = 0.04$), NDF (38.4 vs. 31.8, $P = 0.02$) and ADF (30.1 vs. 22.2, $P = 0.02$). In conclusion, the results showed that responses of supplemental xylanase on improvement of apparent ileal energy and fiber digestibility were independent of supplemental phytase and duration of the acclimatization period.

Key Words: digestibility, phytase, xylanase