P094 **Effects of including microbial phytase in diets fed to pigs and broilers.** J. E. Lowell*, M. Song, J. K. Mathai, H. H. Stein, *Animal Science, University of Illinois, Urbana-Champaign.*

Improved utilization of plant P in feed ingredients has been reported when diets are fortified with microbial phytase. Variability among trials in results has been reported. The objective of this study was to review articles for quantitative responses of pigs and broilers fed diets with microbial phytase. A total of 128 peer-reviewed scientific articles were reviewed and summarized and their data for effects of microbial phytase fed to growing pigs or broilers were recorded and summarized. Data were analyzed using the linear regression procedure to describe relationships between dietary microbial phytase and each reported response. For both species, reported responses to dietary microbial phytase were bone ash (%), ADG, G:F, and apparent ileal digestibility (AID) of P, Ca, N, and AA. For pigs, apparent total tract digestibility (ATTD) of P, Ca, and N were also reported. When microbial phytase was added to diets fed to growing pigs, a linear increase ($P < 0.05$) in bone ash, G:F, and ATTD of P and Ca was observed. There was no effect of microbial phytase on ADG, ATTD of N, and AID of AA. For broilers, a linear increase ($P < 0.05$) in G:F and AID of P, Ca, N, and AA was observed when microbial phytase was added to the diet. There was no effect of phytase on bone ash and ADG. Digestibility of P was found to be the most sensitive to microbial phytase in growing pigs and broilers. Both AID of P in broilers and ATTD of P in pigs should be used to determine the microbial phytase response. However, bone ash is not always an accurate predictor of effects of microbial phytase. If microbial phytase is added to broiler diets, values for AID in feed ingredients should be elevated. If microbial phytase is added to growing pig diets, it is not necessary to elevate AID values. The increase in G:F in pigs and broilers indicates possible energy release when using microbial phytase. More research is needed to confirm this hypothesis and to quantitate the response.

Key Words: bone ash, digestibility, growth rate