Phosphorus Source Impacts on Soil Test Phosphorus Following Incubation. (S11-joern135044-Poster)

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Abstract:

Modifying animal diets by using high available phosphorus (HAP) corn and supplementing with microbial phytase increases the utilization of phytic acid P and reduces manure P excretion. Our objectives were to determine the impacts of P source on soil test P in benchmark soils from North Carolina, Missouri, and Indiana. A 224-day soil incubation study was performed with four rates (12.5, 25, 50, and 75 mg P/kg soil) of inorganic P (triple superphosphate), as well as swine and poultry manure from animals fed HAP corn and phytase diets or conventional diets. All manure treatments were applied on a nitrogen (N) basis (100 mg N/kg soil). Control and inorganic P treatments were supplied with N as urea at 100 mg N/kg soil. Samples collected over the duration of the incubation (1, 7, 14, 28, 56, 112, and 224 days) were analyzed for changes in Bray P1, Mehlich III P, and water soluble P. Soil test P generally declined over time with consistently lower concentrations of P in the manure from animals fed HAP corn and phytase diets relative to those fed conventional diets.

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