Effects of Manure Amendments and Diet Treatments on Soil Test Phosphorus with Time. (S11-smith215041-Poster)

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Abstract:

Recent data indicate that dietary modification may increase potential phosphorus (P) losses when manure is applied to pastures. This study was conducted to determine the effects of feed and manure treatments on P in soil with time. Manure was collected from studies of swine and poultry fed modified diets, aluminum amended manure was also used. Manure from these studies was added to either high or low soil test P (STP) soils, and samples were analyzed for Mehlich 3 (M3) and soluble P (SRP) for 16 weeks. Little change was noted for M3 P for high STP soil fertilized with manure, while as much as 68% reductions were noted for M3 P for manure added to low STP soil by the end of the 16 week study. While SRP decreased with time in swine manure treatments, increases were noted as great as 40% by the end of the 16 week study for poultry litter added to soil. Swine manure from pens fed phytase resulted in higher SRP in both high and low STP soils when compared to manure from normal diets. Treatment of manure with aluminum reduced both M3 P and SRP. This study demonstrates that use of dietary modification and manure amendments may prolong the ability of soil to accept manure applications.

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