Turkey Litter as a Phosphorus Source for Corn. (S08-kovar173830-Poster)

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Abstract:

In this study, we compared turkey litter and commercial fertilizer as a phosphorus (P) source for corn. Samples of soil and litter were collected from four sites in the turkey-producing areas of Iowa. Four treatments (control; common litter on all soils; source litter on each soil; and commercial fertilizer) with a single P rate of 56 kg/ha were used. Available P, labile inorganic P, and phosphatase activity were determined at weeks 0, 3, and 7 during incubation at -33 kPa water content and 23C. After incubation, corn seedlings were planted in pots of each soil in a growth chamber. At harvest 17 days after planting, fresh and dry weight and N and P content of shoots and roots were recorded. Phosphorus availability increased during the 7 weeks following P application, regardless of source. Available P in all soils was adequate for optimum growth of corn, although levels were lower in litter-amended soils. Nutrient addition had little effect on early growth of corn during the first cycle. Plant P was below sufficiency level (0.25%) for all treatments in 3 of 4 soils in subsequent cycles. Nevertheless, results suggest that the residual value of litter may be its greatest benefit.

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