Influence of pH on the Extraction of Soluble Phosphorus from Poultry Litter. (A05-tasistro082505-Oral)

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Abstract:

Poultry litter pH usually ranges between 8.0 and 9.0, but may decrease rapidly when litter is applied to soil. A decrease in pH may increase the amount of water-soluble P released from the litter. This study looked at the effect of pH and shaking time on water-soluble P in poultry litter, and at pH changes and water-soluble P released from broiler litter after surface application to a pasture. Acidifying poultry litters suspensions to approximately pH 7.0 and 6.0 increased Molybdate Reactive Phosphorus (MRP) between 24 and 69%, and Total Dissolved Phosphorus (TDP) between 34 and 72%, when compared to the original pH. Furthermore, pH modification made shaking unnecessary. Monitoring pH changes in thatch and soil top centimeter for 4 months after a February application to pasture showed slight changes in the soil and a decrease to base values in thatch within 15 days. Field variations of MRP and TDP concentrations were not clearly related to pH decreases mainly because of the variable soil cover by thatch and P fixation by soil. Increases in MRP were observed in thatch and soil around 2 months after the application that might be explained by mineralization of forms of organic P.

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