Production and Environmental Impacts of using Alum-amended Poultry Litter as a Fertilizer Source for Corn. (S11-warren073023-Oral)

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Abstract:

Elevated phosphorus (P) in agricultural soils, caused by long-term applications of poultry litter, results in increased concentrations of P in surface runoff. The resulting transport of P to nutrient-sensitive water bodies results in eutrophication and a decline in water quality. Alum, when mixed with litter, has been found to decrease the bioavailability of P and thus P concentrations in runoff from fields treated with alum-amended litter. A study was initiated at Painter, VA in the spring of 2000 to evaluate the use of alum-amended poultry litter as a fertilizer for corn (Zea mays). The experimental design is a randomized complete block. Sources include triple super phosphate (TSP), poultry litter(PL) and poultry litter amended with 10 % alum by weight(PLA). Application rates were based on 1-year crop removal, 3-year crop removal, and N based application of litter. In 2000 PLA applied on a N basis resulted in significantly lower yields than PL applied on a N basis which in turn was lower than all other treatments. In 2001 no significant difference was found between PL and PLA applied on a N basis although both were significantly lower than the remaining treatments.

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Presentation Information:

Presentation Date: Monday, November 11, 2002

Presentation Time: 10:30 am

Keywords:

Alum, Poultry Litter, Corn, Phosphorus