Nitrate Leaching and Corn Yields on a Coastal Plain Soil as Influenced by the Timing of Poultry Litter Applications. (S04-mullins101310-Poster)

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Abstract:

Virginia's guidelines recommend that poultry litter should not be applied more than 30 d before planting of annual crops. The objective of this field experiment was to evaluate nitrate leaching following application of poultry litter at 80 and 30 d prior to planting corn (Zea mays L). Litter was applied at 6.9 Mg/ha on 18 Jan and 7 March. A commercial N fertilizer treatment was also included. Total plant available N applications were 225, 204 and 205 kg N/ha for the Jan litter, March litter and commercial fertilizer treatments, respectively. Suction lysimeters were installed at a depth of 91 cm prior to the Jan litter application. Leachate samples were collected from late Jan to the end of May. Nitrate concentrations were relatively constant (15-20 mg NO3-N/L) in leachate samples in the March litter and commercial fertilizer treatments through the end of May. In the Jan litter treatment, nitrate levels increased significantly in March and continued to increase by approximately three fold (42 mg NO3-N/L) by the final sampling in May. Results of this study demonstrate that poultry litter applied more than 30 d prior to planting corn on a coastal plain soil increased the risk for N losses through leaching.

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