Runoff Quality from Bermudagrass Plots Treated with Poultry Litter . (A05-johnson071233-Oral)

Authors:

- A.B.Johnson Alcorn State University
- M.O.Jordan Alcorn State University
- D.E.Rowe USDA-ARS
- T.Tsegaye Alabama A and M University

Abstract:

The objective to this study was to quantify runoff volumes, concentrations of As, Ca, Cu, Fe, Mg, P, and Zn, and near-surface hydrology of bermudagrass plots treated with poultry litter under simulated rainfall. Poultry litter with application rates of 0, 4.48, 8.96, 17.92, and 35.84 Mg ha-1 was applied to micro-plots (1.72 x 2 m) on a 5% slope. Rainfall simulator was used to produce two runoff events immediately and 1.55 h after poultry litter application. Soil profile water content increased with rainfall application. Cumulative runoff volumes for the 0, 4.48, 8.96, 17.92, and 35.84 Mg ha-1 plots for the first event were 114.6, 84.3, 102.3, 155.4 and 88.9 L, respectively. The second event produced 116.8, 106.9, 121.1, 167.3 and 130.7 L, respectively. Average P concentration from the 8.96 Mg ha-1 plots was significantly smaller than the 4.48 plots. Ca, Mg and K concentrations increased hyperbolically with poultry litter application rate. The concentrations of As, Cu, Fe and Zn were below 0.001 mg L-1 for the two rainfall events.

Corresponding Author Information:

Alton Johnson Alcorn State University 1000 ASU Dr. 750 Alcorn State, MS 39096 phone: (601) 877-6529 fax: (601) 877-3743 e-mail: bjohnson@lorman.alcorn.edu

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