Agrochemicals in Soil and Groundwater under Potato Irrigation. (S06-elliott144139-Oral)

Authors:

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Abstract:

Four fertilizer management systems for irrigated potatoes (single applications of 300 kgN/ha (SH) and 200 kgN/ha (SL), a split application of 100 kgN/ha prior to seeding and 100 kgN/ha prior to hilling (ST), and a fertigated treatment where 100 kgN/ha starter fertilizer was supplemented by fertigation (FT)) were compared in terms of their effects on yield, nitrate in groundwater and soil N. Shallow groundwater was also monitored for the pesticides applied to the potato field. The additional N on the SH treatment did not increase tuber yield and in one year of the study, total yield on the SH treatment was lower than on the FT and ST treatments (p=0.05). The water table rose under all plots while potatoes were growing but under the other crops in the rotation, the water table fell throughout the growing season. The nitrate content of shallow groundwater increased when potatoes were grown and, under the SH treatment, continued to increase when canola was grown. On the other treatments, nitrate in shallow groundwater decreased under the canola crop. Nitrate accumulated in the soil profile in all plots during potato production but profile N decreased under canola and wheat. Pesticides were seldom detected in the shallow groundwater.

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Decomposition of Broiler Litter in Selected Alabama Soils. (S06-elliott144139-Oral)

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Abstract:

Decomposition rates of organic C in soils amended with broiler litter (BL) are required for predicting CO2 contribution of BL to the global CO2 balance. Ten non-calcareous agricultural soils (Appling, Cecil, Cobert, Decatur, Dothan, Harsells, Linker, Maytag, Sucamooche, and Troup soil) collected in Alabama were used. A 20-g sample (OD) of a field-moist soil was mixed with sufficient BL to contain 9 g organic C/kg soil in a 250-mL French sile in all plots during potato production but profile N decreased under canola and wheat. Pesticides were seldom detected in the shallow groundwater.

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