Effect of Suagrbeet Processing By-products on Wheat Yield, Nitrogen Mineralization, and Runoff Water Quality. (S11-kumar142537-Oral)

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Abstract:

Crop growth, soil nitrogen (N) mineralization, and run-off water quality were evaluated following land application of sugarbeet by-products. The treatments evaluated were: spoiled beets @ 224 and 448 t/ha fresh weight, and pulp @ 224 and 448 t/ha fresh weight, and the control (no by-product, no fertilizer). Waste was applied in March 2001. The test crop was spring wheat planted in June 2001. Wheat grain yield was significantly lower under all by-product treatments compared to the control. This was mainly due to immobilization of soil N under the by-product treatments. In general, nitrate-N concentrations in runoff water from the by-product treatments were lower than the control. The concentration of both total P and soluble P in runoff increased after the application of sugarbeet by-products and more than doubled under spoiled beet compared to pulp treatments. The BOD of runoff waters showed the same trend as total P and soluble P. It appears that the major impact of sugarbeet by-product application on heavy textured soils is in terms of P and BOD losses in surface runoff.

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