Spatial Variability of Soil Amino Sugar Nitrogen. (S04-ellsworth154314-Poster)

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Abstract:

The spatial variability of soil amino sugar N was measured in three fields in central Illinois (two high-organic matter soils and one low-organic matter soil). In each field, four 7.7 m by 13 m plots were established, each plot consisting of four subplots. Eight of the plots (32 subplots), which had received no recent fertilizer application, were used in the spatial study. In the first spatial sampling, three subplots (one in each field) were sampled in a 7x8 grid. In all three fields soil amino sugar N measurements were more highly correlated in the direction of the previous crop row than perpendicular to this direction, indicating strong anisotropy in the spatial structure. In the second spatial sampling, the same three subplots were again each sampled in a 7x8 grid, and the other 29 subplots were each sampled in a 4x3 grid. The extent to which the coarse-grid information can be used to characterize the spatial structure of the eight plots was explored, as well as the extent to which the spatial information can be utilized in understanding temporal variations in soil amino sugar N data for composited samples taken at various locations within the subplots.

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Presentation Information:

Presentation Date: Tuesday, November 12, 2002

Presentation Time: 2:00-4:00 pm
Poster Board Number: 1640

Keywords:
Amino Sugar, Nitrogen, Spatial Variability, Anisotropy