Histosol Dynamics in North Central Iowa. (805larabee161014-Poster)

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Abstract:

Histosol soils are derived from organic parent material rather than mineral parent material. These organic rich soils sequester more organic carbon per volume than any mineral soil. Palms and Klossner series Histosols were chosen because of their similarity and wide distribution across the Des Moines Lobe of the Wisconsinan Glaciation in Iowa. Typical Palms and Klossner pedon sites chosen by the National Cooperative Soil Survey (NCSS) were revisited and three samples were taken at random within a fifty-centimeter radius of the documented location. These were compared to the descriptions made at the time the soil survey was completed. Changes in horizon depths and carbon content over time are of particular interest when determining whether the Palms/Klossner soils are sequestering or releasing carbon. Three sites were also studied using cross sections to determine if the area originally mapped around the typical pedon site by the NCSS had remained static. Carbon losses from soil may contribute to the rise in carbon dioxide in the atmosphere not accounted for from other sources. Quantifying change in carbon content over time may aid in determining the extent of carbon is being lost to the atmosphere from Histosols and mineral soils.

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Presentation Information:

Presentation Date: Monday, November 11, 2002 Presentation Time: 9:00-11:00 am Poster Board Number: 1914

Keywords:

Histosol, pedology, carbon sequestration, hydric soils