Visual Indicators for Hydric Soils. (S10-jenkinson150519-Poster)

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Abstract:

In saturated soils anaerobic microorganisms substitute other compounds such as nitrate, manganese oxides and iron oxides for oxygen in respiration processes. A byproduct of this microbial activity is the increased mobility of Mn and Fe in the soil solution. We learned that a solid polyvinyl chloride tube coated with ferrihydrite, when installed in soils that are saturated and reduced, had some of the coating dissolved by microbial activity thereby providing a visual indicator in the field that hydric conditions were present. We installed these tubes in nine soils in Indiana in the winter of 2000. Only two soils were saturated with water close to the surface and the tubes installed at these sites had part of the coating removed. The coatings on the tubes at the unsaturated sites were not affected. The test was repeated in Winter and Spring 2001 at three of the sites used in 2000 and in one additional soil in Indiana. Additional tubes were installed in Minnesota and North Dakota. All tubes installed in soils periodically saturated with water and reduced exhibited various-sized areas where the coating was stripped.

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