

Evaluation of the Illinois Soil Nitrogen Test (ISNT) on Turfgrass Soils

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ABSTRACT

Current soil tests are not a reliable measure of nitrogen levels within the turf profile. Dynamic chemical and physical processes occur continuously, causing highly fluctuating readings for NH_4^+ -N and NO_3^- -N. There is a labile fraction of soil N that is more stable, however, making it a more reliable predictor of plant available N and therefore fertility requirements. Amino sugar-N is an organic fraction that becomes readily available as it mineralizes throughout the year. The Illinois Soil Nitrogen Test (ISNT) quantifies this amino sugar-N pool. Developed for production agriculture, specifically corn, the ISNT is more consistent, convenient and reliable than previously available tests. It establishes a critical value of amino sugar-N above which additional N fertilization shows no yield response. The impact of this test could lead to better efficiency and precision when applying N fertilizer thus reducing management costs and nitrate leaching potential. Continuing research at The Ohio State University and other Midwest universities will determine the spatial and temporal variation of soil amino nitrogen in turfgrass systems.