Potential of the Illinois Soil Nitrogen Test for Improving Nitrogen Fertilizer Management for Corn Production. (S08-mulvaney173715-Poster)

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Abstract:

The Illinois soil N test estimates amino sugar-N to detect sites where corn does not respond to N fertilization. As originally developed, this test correctly identified 25 on-farm sites as being responsive or nonresponsive, and has been applied successfully to additional sites during the 2001 and 2002 growing seasons. Several field studies have provided ample evidence that crop growth and development is accompanied by a decrease in soil test N, which suggests that this test estimates a labile fraction of soil N. Moreover, these studies have demonstrated that this soil test detects (1) the rotation effect of a previous legume; (2) tillage effects on soil N availability; (3) plant-available N derived from manure, even if applied several years previously; and (4) spatial variability associated with previous cropping and management practices. Unlike nitrate testing, the Illinois soil N test is performed on surface samples, and indications are that this test may be successfully applied in conjunction with soil testing for pH, P, and K. The new N test is simple and convenient, and test values are unaffected if air-dried samples are stored at room temperature for several years.

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