Effects of CRW transgenic corn and tefluthrin on the soil microbial community: activity, diversity and abundance. (S03-thies161301-Poster)

Authors:

- M.H.Devare *Cornell University*
- J.E.Thies Cornell University
- C.M.Jones Cornell University
- S.W.Culman Cornell University

Abstract:

The effects of transgenic Bt corn resistant to the corn rootworm on the activity, diversity, and abundance of soil bacteria, fungi, and protozoa are being evaluated in a field trial planted to CRW (Bt) corn, a non-transgenic isoline (NoBt), and NoBt corn with the insecticide tefluthrin applied at planting. In 2001, soil samples were collected before planting, at anthesis and at harvest. For the latter two sampling points, each composite sample was separated into bulk and rhizosphere components. Biomass C in the rhizosphere from Bt plots was significantly higher than from NoBt plots at harvest. Short-term nitrification rate in NoBt plots without insecticide applied was lower than in those with insecticide. There were no other differences between treatments in biomass C, mineralizable N, soil respiration, short-term nitrification rate or in the abundance of protozoa at any sampling point. Data on diversity of soil bacterial and fungal communities evaluated by terminalrestriction fragment length polymorphism (T-RFLP) and internal transcribed spacer (ITS) analyses, respectively, and their abundance determined by direct counts using fluorescence microscopy will also be presented.

Corresponding Author Information:

phone: 607-255-5099 Janice Thies Cornell University 722 Bradfield Hall Ithaca, NY 14853

fax: 607-255-8615 e-mail: jet25@cornell.edu

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• C.E.Martinez - Cornell University

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