The Impact of Bt Corn on Soil and Rhizosphere Microbial Communities. (S03buyer075539-Oral)

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Abstract:

The large-scale use of transgenic plants may have unintended ecological consequences. While nontarget effects on plants and macrofauna are heavily discussed in the scientific literature and popular press, nontarget effects on soil microbial communities have received relatively little attention. There is evidence that Bt corn residue is degraded more slowly than non-Bt residue, which could be a result of the toxin's insecticidal activity, a direct effect of the Bt toxin on microorganisms, or a result of increased lignification in the transgenic plant. While Bt toxins produced by transgenic cotton and corn have been detected in soil, and certain transgenic corn varieties may release the Bt toxin in root exudates, there is little evidence of any effect on soil or rhizosphere microbial community structure and function. The evidence for effects of other transgenic plants on microbial community structure will be reviewed, and the possibility of gene transfer from transgenic plants to microorganisms will be discussed.

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Presentation Information:

Presentation Date: Wednesday, November 13, 2002 Presentation Time: 9:00 am

Keywords:

Bt corn, transgenic crops, microbial community