Impact of Genetically-Modified Crops and their Management on Plant Nutrient Transformations. (S03-motavalli191227-Oral)

Authors:

- P.P.Motavalli* - *University of Missouri*
- R.J.Kremer - *USDA-ARS*
- N.E.Means - *University of Missouri*

Abstract:

Alterations in plant nutrient transformations due to changes in soil physical, chemical and biological properties by the growth and management of genetically-modified (GM) crops may affect soil fertility and the fate of nutrients in the environment. Among the cited potential mechanisms for the impact of GM crops are changes in the composition and activity of soil microbial populations resulting from root exudates, residue inputs, gene transfer and pesticide applications. Other possible positive or negative impacts of GM crops on the environmental fate of nutrients include increased cultivated area in conservation tillage, cultivation of marginal and degraded lands, and changes in fertility and other cultural practices for specific crops. Little long-term research is currently available that has examined the potential agronomic and environmental impacts of GM crops and their management on nutrient transformations. A suggested strategy for future research on GM crops will be presented that stresses examination of long-term changes in soil nutrient transformations under varying soil and climatic conditions.

Corresponding Author Information:

Peter Motavalli
University of Missouri
302 ABNR Building
Columbia, MO 65211

phone: (573)884-3212
fax: (573)884-5070
e-mail: motavallip@missouri.edu

Presentation Information:

Presentation Date: Wednesday, November 13, 2002
Presentation Time: 10:20 am

Keywords:

Genetically-Modified Crops, Plant Nutrients, Crop Management,

Rhizosphere