Influence of a Herbicide Resistance Gene on Nutrient Uptake. (S04-dodds143148-Poster)

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Abstract:

There has been an increasing awareness of manganese (Mn) deficiency following the application of glyphosate to glyphosate-resistant soybeans since their introduction in 1996. Foliar chlorosis may indicate a reduced uptake or physiological immobilization of micronutrients. This research evaluated nutrient uptake by six cultivars (three conventional and three glyphosate-resistant) of both soybeans and corn (isogenic). Cultivars were grown on a low manganese Sebewa loam (Fine-loamy over sandy or sandy skeletal, mixed, mesic Typic Argiaquolls) in Northwestern Indiana and a nutrient sufficient Chalmers silt loam (Fine-silty, mixed, mesic Typic Hapludolls) soil in West Central Indiana. Glyphosate was applied post-emergence to the glyphosate-resistant cultivars at a rate of 1.12 kg ai/ha. Samples of the youngest, fully expanded leaf were taken four weeks after application, dried, and analyzed by ICP-AA for nutrient content. Data were subjected to ANOVA and mean separation. The gene that codes for glyphosate resistance appears to affect nutrient uptake and potential susceptibility to disease and overall health of the plant on low manganese soils.

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