GLYPHOSATE EFFICACY WHEN TANK MIXED WITH FOLIAR APPLIED MN FERTILIZERS IN GLYPHOSATE TOLERANT SOYBEAN. Terry W. Semmel, Jeff Hinen, Greg Elmore, Phil Boeve, Jeff Taylor, Erika Ehler, Brad Miller. Technology Development Managers, Monsanto Company, St. Louis, MO 63167.

Manganese nutrient deficiencies in soybean (Glycine Max) occur in many Midwestern states. In Indiana, Mn deficiencies are frequently observed in well-drained (sands) alkaline (high pH) soils high in soil organic matter. Multiple applications of foliar applied Mn may be needed when deficiencies are severe. Combining Mn fertilizers with glyphosate applications in Roundup Ready soybean could decrease application costs. Experiments were conducted to determine tank compatability, efficacy of weed control, and crop safety of common Mn fertilizers. Treatments of these in-field experiments included inorganic, organic, and chelated classes of Mn.

Field research was conducted at West Lafayette IN, Perry MI, Ashville, OH, Findlay, OH, Arcanum, OH in 2003 using an randomized complete block design. Herbicide treatments were applied after annual broadleaf and grass weeds reached the 4-8 inch height. In order to separate treatments, glyphosate rates were designed to be slightly below the dose necessary for 100% control.

All Mn fertilizers used in this study were used at manufactures' recommended rates. The organic Mn source was formulated with citric acid, the inorganic source as Mn sulfate, the remaining treatments were synthetic chelated formulations.

Results showed significant decreased weed control with the addition all Mn fertilizers. While overall weed control of all fertilizer treatments was less than the glyphosate standard, significant differenced did exist between weed species as well.

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