ISSUES SURROUNDING SOYBEANS, MANGANESE AND GLYPHOSATE

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Recent estimates put the number of acres planted with glyphosate resistant soybeans at approximately 80% of total US acres. Manganese is recognized as the most important micronutrient for effective growing and yield maximization in the soybean crop. There are various field growing conditions that can inhibit the availability of manganese in our cropping systems. Recent research done at Purdue University indicates that the incorporation of the glyphosate resistant gene in the soybean plant predisposes the plant to micronutrient deficiencies (Dodds et al.) This same research also indicates that a glyphosate application exacerbates the deficiency symptoms and can have a negative impact on yields.

The glyphosate application itself presents a window of opportunity for the applicator/grower to apply a manganese product and minimize application costs. However, recent research done at Michigan State University indicates that the addition of unusually large amounts of manganese containing products in a glyphosate tank mix can have an adverse effect and compromise the effectiveness of the glyphosate application (Bernards et. al., 2003).

A study was commissioned to see if following label recommendations and conventional grower practices would have a negative impact on weed control. The study was undertaken using a product containing an ethyl amino acetate (EAA) chelating agent, Post-Man. There was antagonism noted on only one weed species (Atriplex) at the earliest evaluation date. By harvest the poorest weed control was noted in the glyphosate application made without including Post-Man either as a tank mix component or as a post glyphosate application (2 dat). All other measured criteria, evaluation of plant color, leaf tissue Mn levels, yield and final weed control evaluation were improved by the addition of manganese to the glyphosate application. The study results indicate that a second manganese application, made alone one week after the herbicide application, significantly improved all of the evaluation parameters.

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