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Roundup ready vs. manganese

Alesa Raasch & David Trinklein

The objective of this research was to determine if the foliar application of Manganese to Round-up Ready soybeans at different timings will provide a yield benefit. The study consisted of four treatments replicated 16 times in a complete randomized block. Treatments consisted of 0.5, 1.0 and 2.0 pounds of actual Mn per acre and a control. These treatments were applied before the roundup was applied. The plots were 60 feet wide and 200 feet long. Applications were made with an Apache 1090 ground sprayer operated at 60 psi in 20 gallons per acre spray solution. Air Induction (AI110 004) on 30 inch spacing was used. Tissue samples were taken before manganese and roundup applied (June 10) and after roundup applied (June 25). The manganese was applied on June 13. The roundup application was made on June 16. The samples were collected by removing the leaves of the uppermost fully expanded trifoliolate. Yields were determined by harvesting the center of each plot with a John Deere 9660 combine equipped with a calibrated GreenStar Autotrak yield monitor. After reviewing the statistical analysis of the plots, there was no conclusive evidence that yield was increased due to the manganese application. This test field had not previously shown any symptoms of manganese deficiency. On the contrary, there was an antagonism with the foliar manganese interfering with the Glyphosate. There was a negative impact on weed control in every plot but the control. Other research shows the antagonism when foliar manganese and Glyphosate are tank-mixed, but this isn't the case.

This project was completed to fulfill a Capstone requirement.