Effect of Foliar Application of Sulfur plus Manganese on Modified Relay Intercrop (MRI) Soybeans

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Objective
To evaluate grain yield response of MRI soybeans to liquid manganese chelate with sulfur (EEZY MAN) when applied at soybean growth stage R3/R4.

Background
Crop Year: 2013
Location: OSU Unger Farm
County/Town: Crawford
Soil Type: Blount/Pewamo
Drainage: Systematic
Previous Crop: Wheat
Soil Test: pH 6.2, P 34 ppm, K 152 ppm
SCN Count: (MRI area) 1160 eggs/100cc
Row width: 10 inches
Soybean Planting Date: June 5, 2013
Wheat Variety: Pioneer P93Y24
Herbicide (Post): 1 qt glyphosate (2 X)
Treatment Dates: July 26
Soybean Seeding Rate: 225,000 seeds/acre
Fertilizer (lbs N-P-K): 95-58-78
Date of Harvest: October 29, 2013
Rain fall: 25.57 inches (5/16-10/2)

Methods
Soybeans were interseeded into standing wheat with 10 inch row spacing on June 5, 2013 with a Great Plains 2010P precision drill mounted on a 3 point hitch with lift assist wheels. Pioneer P93Y24 were planted at a rate of 225,000 seeds per acre. Wheat was harvested on July 12, 2013. Wheat averaged 70 bushel per acre in the field. An application of 1 quart of glyphosate was applied on July 22.

This study used a randomized complete block design with two treatments replicated 4 times to compare EEZY MAN @2 qts/acre treated plots and an untreated control (no EEZY MAN). EEZY MAN (manufactured by The Andersons) contains 2% combined sulfur and 5% chelated manganese by weight. Label suggested rates were 1-2 qts/acre in 10 -20 gallons of water/acre (2 qts/acre was the treatments rate). Plots were treated on July 26 with a 10 foot CO2 plot sprayer. Each plot was 10 feet wide and averaged 44 feet long. Plots were harvested on October 29, 2013 using a Kincaid 8-XP small plot combine harvesting the center five feet of each plot.

Treatments
1) EEZY MAN at 2 qts/acre applied in 15 gallons of water at 40 psi
2) Control (no EEZY MAN)
Results

Table 1. MRI Soybean Yield adjusted to 13.5% moisture

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Mean yield (bu/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEZY MAN @ 2qts/ac</td>
<td>48.1</td>
</tr>
<tr>
<td>Control</td>
<td>47.4</td>
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</tbody>
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F=.35, NS; CV =3.49; P>F=.57

Summary

There was not any significant treatment effect observed. EEZY MAN cost $12.32 per acre at the rate used and another $10.00 for application and adjuvants for a total cost of $22.32 per acre. Soybeans were $12.87 per bushel at harvest. Thus, it would take 1.73 bushels of soybeans to cover the cost of product and application.

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