Soybean Foliar Fertilization

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Objective
To determine if mid- and late-season foliar fertilization with two different liquid fertilizers or growth regulator products can boost soybean yield.

Background
Cooperator: Nate Andre  
County: Fulton  
Soil Type: Granby  
Tillage: No-till  
Previous Crop: Corn  
Soil Test: 6.3 pH, P 117 ppm, K 128 ppm, OM 1.4%, CEC 5.3 meq/100g  
Fertilizer Rate: non-broadcast  
Variety: Garst 295  
Planting Date: 5/18/04  
Seeding Rate: 200,000 seeds/A  
Row Width: 10 inches  
Harvest Pop: 180,000 plants/A  
Harvest Date: 10/5/2004

Methods
Soybean yields have been a concern locally as yields have stagnated or declined over the past 5 years. The current study was designed to assess the potential use of new foliar fertilizer products with growth regulators to coax more yield out of the soybean plant in an area of the field where other inputs would be in place to maximize yield. Plots 10 ft by 40 ft were established with 5 replications in a randomized complete block design. Foliar products were applied at three stages R1, R3 and R4. R1 applications were made on July 9 which was a sunny day with a light wind and an air temperature of 75 degrees F. R3 treatments were applied on July 22 and weather conditions of 83 degrees sunny with a light wind and rainfall event on 7/21. R4 applications were made on August 8th and conditions were 84 degrees F, sunny, and humid with a rainfall event on 8/4. Applications were made with a CO2 sprayer with a 10 foot boom; nozzles were TeeJet XR11004VS, 20 gallons of water was applied per acre at 20 PSI pressure.

Results

<table>
<thead>
<tr>
<th>Product (Rate per acre)</th>
<th>Timing</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-0-10 (8 gal)</td>
<td>R1</td>
<td>68.3</td>
</tr>
<tr>
<td>Bioforge (1 qt)</td>
<td>R3</td>
<td>66.6</td>
</tr>
<tr>
<td>5-10-27 (5 lbs) + Bioforge (8 oz) at R1 + SETT (2 qt)</td>
<td>R3</td>
<td>63.8</td>
</tr>
<tr>
<td>20-0-10 (8 gal)</td>
<td>R3</td>
<td>62.6</td>
</tr>
<tr>
<td>5-10-27 (5 lbs) + Bioforge (8 oz)</td>
<td>R1</td>
<td>58.2</td>
</tr>
<tr>
<td>20-0-10 (8 gal)</td>
<td>R4</td>
<td>57.7</td>
</tr>
<tr>
<td>5-10-27 (5 lbs) + Bioforge (8 oz) at R1 + SETT (2 qt)</td>
<td>R4</td>
<td>56.6</td>
</tr>
<tr>
<td>Control</td>
<td>na</td>
<td>55.8</td>
</tr>
<tr>
<td>LSD (0.05)</td>
<td></td>
<td>11.5</td>
</tr>
</tbody>
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For additional information, contact:
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