Value of Pop Up Fertilizer on Corn

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Objective

To evaluate the benefits of applying 9-19-9 fertilizer directly to the seeds as a pop-up fertilization program in corn. This was measured by comparison of initial stand and yield at harvest.

Background

Cooperator: Gerber Farms
County: Butler
Township: Wayne
Drainage: Somewhat poorly drained
Soil type: Raub silt loam, Fincastle
Tillage: Reduced till
Previous crop: Soybeans
Variety: Golden Harvest 2495

Soil test: pH 6.5, P 96ppm, K 122 ppm, CEC 11 meq/100g
Fertilizer: See Methods
Planting date: May 25, 2002
Planting Rate: 33,000 seeds/A
Row width: 30 inch
Herbicide: Bicep II Magnum 1 qt/A
AAtrex 90 1 lb/A
Harvest date: October 17, 2002

Methods

Plots either received pop up application of 4 gallons of 9-19-9 (3.5-7.5-3.5 lb/A) applied directly on the seed or they received no starter fertilizer. All plots also received 150 lb/A of 21-0-0 and 150 lb/A of 0-0-60 broadcast in the fall. All plots also received 185-lb/A anhydrous ammonia preplant.

The stand counts were evaluated by counting plants with in 1/196 of an acre in three locations within each plot. The yield was determined by weighing all the corn from each 0.742-acre plot and adjusting to 14.5% moisture. Each plot was 30 feet wide.

The experiment design is a completely randomized block design with four replications.

Results

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Initial Population (plants/A)</th>
<th>Yield (bu/A)</th>
<th>Moisture (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No pop up</td>
<td>32,005</td>
<td>116.9</td>
<td>13.7</td>
</tr>
<tr>
<td>Pop up</td>
<td>32,250</td>
<td>120.4</td>
<td>13.9</td>
</tr>
<tr>
<td>LSD (0.05)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>F test</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Table 1. Corn Plant Population and Yield.
Summary

The cost of the pop-up treatment was $9.00/ acre. While there was a measured increase in initial stand and yield for the pop-up treatment vs. no fertilizer, the differences were not statistically significant. This year yields were lower than expected. We may see a difference between treatments in a normal or better yielding year.

Acknowledgments

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