Value of Pop Up Fertilizer on Corn

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Objective: To evaluate the impact of applying pop-up, 9-19-3 fertilizer directly to the corn seed at planting on grain yield and moisture, and on initial population.

Background

Cooperator: Dave Hiltbrand
County: Butler
Township: St. Clair
Drainage: Moderately well drained
Soil type: Tippecanoe silt loam
Tillage: No till
Previous crop: Soybeans
Hybrid: Mycogen 2652
Soil test: pH 6.8, P 90ppm, K 261 ppm
Fertilizer: See Methods
Planting date: 5/11/04
Seeding rate seeds/A: 30,000
Row width: 30 inches
Herbicide rate/A: Cornerstone 1qt., 2-4D 1 pt., Equip 2.8oz., Atrex 1.1 lb., Rifle 1 pt.
Harvest date: 11/13/04

Methods

The study employed a randomized complete block design with four replications. Each plot was 20 feet wide and varied in length. 5.5 gallons of 9-19-3 (5-10-1) was applied with the corn seed at planting in the treated plots. All plots received 54 lbs. of N as 28%, UAN, at planting and were side dressed with 105 lbs. of N as 28%, UAN.

Five weeks after planting, initial plant population was determined for each plot by counting plants in 1/1000 A. area in three different places in each plot. Grain yield of each plot was measured by weighing the grain from plot in a weigh-wagon and adjusted to 14.5% moisture.
Results

Table 1. Corn Plant Population, Moisture and Yield

<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>27,375</td>
<td>199.58</td>
<td>14.0</td>
</tr>
<tr>
<td>Pop up</td>
<td>28,250</td>
<td>211.20</td>
<td>14.1</td>
</tr>
<tr>
<td>LSD (0.05)</td>
<td>NS</td>
<td>6.1</td>
<td>NS</td>
</tr>
</tbody>
</table>

Summary

There was a significant yield difference in the plots that received the pop-up, 9-19-3 placed on the seed. There was no statistical difference in initial plant population or moisture of the corn at harvest. This is the first test where yield increase was significant in 6 trials conducted over three years.

Acknowledgments

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