Nitrogen Rate Effects on Popcorn Production

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Objective

To evaluate nitrogen rate effects on popcorn yield.

Background

Cooperator: OARDC NWARS  Plot Length: 80 feet
Nearest Town: Hoytville  Planting Date: 4/26/04
Major Soil Type: Hoytville Silty Clay Loam  Harvest Date: 10/22/04
Previous Crop: Soybean  pH: 6.4
Hybrid: Schlessman 30-26  Soil Test P: 91 lbs/A
Planting Rate: 30,000 seeds/acre  Soil Test K: 360 lbs/A
Row Width: 30 inches  C.E.C: 20.6

Methods

The plots were established in a randomized complete block design with four replications. Plots consisted of 4 rows, 80 feet long, with measurements taken on the center 2 rows. Nitrogen (N) in the form of urea-ammonium nitrate solution (UAN; 28%) was sidedressed 42 days after planting at rates of 0, 80, 120, 160 and 200 lbs N/A. Plots were harvested using a 2-row plot combine.

Results

Nitrogen rate effects on popcorn yield and % grain moisture, Hoytville, OH, 2004.

<table>
<thead>
<tr>
<th>Nitrogen Rate</th>
<th>Yield</th>
<th>Yield</th>
<th>Grain Moisture</th>
</tr>
</thead>
<tbody>
<tr>
<td>---lbs N/A---</td>
<td>---lbs/A---</td>
<td>-----Bu/A*-----</td>
<td>---------------</td>
</tr>
<tr>
<td>0</td>
<td>2601</td>
<td>40.0</td>
<td>20.5</td>
</tr>
<tr>
<td>80</td>
<td>4032</td>
<td>62.1</td>
<td>20.3</td>
</tr>
<tr>
<td>120</td>
<td>4171</td>
<td>64.2</td>
<td>19.9</td>
</tr>
<tr>
<td>160</td>
<td>4599</td>
<td>70.8</td>
<td>20.8</td>
</tr>
<tr>
<td>200</td>
<td>4746</td>
<td>73.0</td>
<td>21.2</td>
</tr>
<tr>
<td>LSD (0.05)</td>
<td>407</td>
<td>6.3</td>
<td>NS</td>
</tr>
</tbody>
</table>

* Based on 15% grain moisture and 65 lb/bu
Summary

Nitrogen rate affected yields of popcorn, with a low yield of 2601 lbs/A with no nitrogen applied to a high yield of 4746 lbs/A with 200 pounds of nitrogen applied. There was no significant yield response to nitrogen above 160 lbs N/A. Nitrogen rates did not affect % grain moisture at harvest.

For additional information, contact:

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