Relationship Between Seeding Rates and White Mold Development in Soybeans

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Objective

To evaluate the effect of seeding rate on white mold development in soybeans.

Background

Cooperator: Dan Heitzman
County: Putnam
Nearest Town: Continental
Soil type: Silty clay loam
Tillage: Chisel plowed/disked in the fall
Previous Crop: Clover
Variety: TS 401

Soil test: pH 6.5, P 40 ppm, K 125 ppm
Fertilizer: None
Planting Rate: See below
Row Width: 15-inch
Herbicides: Boundary 2 pt/A
Canopy 3.5 oz/A

Planting Date: June 3, 2002
Harvest Date: October 17, 2002

Methods

Experimental design was a randomized complete block with three treatments replicated six times. Treatments were three seeding rates: 110,000; 165,000; and 225,000 seeds per acre. The plots were planted with a White 6100 planter. Individual planted plot size was approximately 1/4 acre. The soybeans were planted in 30-foot wide strips for a length of about 360 feet. Using a Gleaner L-3 combine, a 20-foot wide strip was harvested the length of the plot and weighed using a weigh wagon. Harvest population was estimated by counting soybean plants in four adjacent rows for a length of 50 feet.

Results

Even though the field selected had a history of white mold, environmental conditions were not conducive for disease development. Thus, the results will only discuss the effects of seeding rate on grain yield.
**Table 1. Soybean Yield and Harvest Population.**

<table>
<thead>
<tr>
<th>Planted Population (seeds/A)</th>
<th>Harvest Population (plants/A)</th>
<th>Yield (bu/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>110,000</td>
<td>95,774 a</td>
<td>60.0 a</td>
</tr>
<tr>
<td>165,000</td>
<td>124,349 b</td>
<td>58.9 a</td>
</tr>
<tr>
<td>220,000</td>
<td>175,895 c</td>
<td>60.5 a</td>
</tr>
<tr>
<td>LSD (0.05)</td>
<td>12,974</td>
<td>NS</td>
</tr>
<tr>
<td>F-test</td>
<td>97</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Means followed by the same letter in the same column are not significantly different. NS = Not Significant

**Summary**

A uniform stand was achieved for all seeding rates due to adequate rainfall following planting. Drought conditions were not conducive to white mold development. The plot received less than eight inches of rainfall during the growing season. Final harvest populations were statistically different, but grain yields were not statistically different. Thus, according to this trial, seeding rates between 110,000 and 220,000 seeds/A had no effect on yield.

**Acknowledgment**

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