Soybean Population Study

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Objective
To determine the effects of soybean seeding rate on soybean yields and provide data for soybean population response curves.

Background
Crop Year: 2014
Location: Adams Township
County/Town: Darke/Bradford
Soil Type: Celina Silt Loam
         Brookston Silty Loam
Drainage: Systematic with 40 foot Laterals
Previous Crop: Corn

Tillage: No-Till
Soil Test: pH 6.4, P 45 ppm M III, K 168 ppm
Planting Date: May 17, 2014
Nitrogen: None
Seeding Rate: Varied
Harvest Date: October 30, 2014

Methods
Six soybean populations were replicated three times in a randomized complete block design. Treatments were planted with a 12 row Kinze planter with split row units. All treatments received the same tillage and herbicide applications. Seed used was Asgrow 3634. Stand counts were taken at V4 and R7 by obtaining 2 counts per treatment and calculating the simple average. Plots were harvested with a commercial combine equipped with a 30 foot grain header. Yields and moistures were obtained by using a calibrated yield monitor. Yields were verified using a grain cart. Yields were adjusted to 13% moisture. Precipitation data can be viewed at cocorahs.org.

Results

<table>
<thead>
<tr>
<th>No.</th>
<th>Population Planted</th>
<th>Wet Moisture (%)</th>
<th>Treatment Average (bu./acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>60,000</td>
<td>12.5</td>
<td>63.0</td>
</tr>
<tr>
<td>2</td>
<td>95,000</td>
<td>12.5</td>
<td>62.4</td>
</tr>
<tr>
<td>3</td>
<td>130,000</td>
<td>12.6</td>
<td>64.8</td>
</tr>
<tr>
<td>4</td>
<td>165,000</td>
<td>12.6</td>
<td>65.7</td>
</tr>
<tr>
<td>5</td>
<td>200,000</td>
<td>12.6</td>
<td>65.9</td>
</tr>
<tr>
<td>6</td>
<td>235,000</td>
<td>12.5</td>
<td>66.5</td>
</tr>
</tbody>
</table>

LSD = 4.14 (p<.38); CV 4.39; No significant difference.
**Summary**

As expected from previous research, soybean yield was not influenced by planting population. An economic comparison between the planting populations of 60,000 and 235,000 revealed a $57.02 per acre advantage over seed costs. Assumptions were soybean seed cost $ .41/1000 and cash beans cost$9.82/bushel.

**Acknowledgement**

The author expresses appreciation to on-farm collaborators Overholser Farms for the land use, planting and harvesting of this plot.