USDA Inoculant Effects on Soybeans in a Corn/Soybean Rotation
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Objective
To study the effect of a new inoculant on soybean yields in fields currently in a corn/soybean rotation.

Background
Cooperator: Rod Phillips  Soil Test: pH 6.2, P 42 lbs/A, K 201 lbs/A, OM 2.8%
County: Wyandot  Fertilizer: None
Nearest Town: Carey  Herbicides: Turbo, Canopy, and 2,4-D
Soil type: Pewamo, Blount  Variety: Asgrow 2704
Drainage: Surface, partial tile  Planting Date: May 6, 1999
Tillage: No-till  Planting Rate: 225,000 seeds/A
Previous Crop: Corn  Harvest Date: September 25, 1999

Methods
A new pre-mixed, humus-based inoculant containing Bradyrhizobium japonicum was applied in a plot using a 15-foot no-till drill. All of the plots containing no inoculant were planted first to avoid contamination of the seed. The inoculant was hand mixed in the seed box, and the inoculant plots were planted. The plots were replicated six times. Each of the plots was 45' x 1,150' in size with 0.75 acres being harvested.

Results

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield (bu/A)</th>
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</thead>
<tbody>
<tr>
<td>No Inoculum</td>
<td>46.72</td>
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<tr>
<td>USDA Inoculum</td>
<td>46.38</td>
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<tr>
<td>LSD (P = 0.05)</td>
<td>NS</td>
</tr>
<tr>
<td>CV</td>
<td>1.06%</td>
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Summary and Notes
New soybean inoculant products may be able to improve nitrogen production by increasing the numbers of rhizobia bacteria. The 0.34 bushel/acre difference was not statistically significant in this trial. The lack of response to the inoculant could be due to the shortage of rainfall during the summer. Soil moisture was very limited during most of the growing season. This raises the question about the ability of the rhizobia bacteria to multiply in the dry soil environment.
These results are contrary to many studies completed across the Midwest but consistent with local results from 1998.

Acknowledgment

The inoculant used in this research was donated by Cory Bils of Bird Hybrids (www.birdhybrids.com). Riele Farms, Pioneer Dealer, Upper Sandusky, provided the weigh wagon.

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