Soybean Maximum Yield Evaluation

Wilkin, Norman, Polk, Pennington, Marshall, Roseau, & Kittson Counties

Purpose of Study
Soybean is second only to wheat in acreage in northwestern Minnesota. Soybean yields must increase for farmers in the region to profitably produce soybeans in the future. The treatments, which were chosen for the Maximum Economic Production experiment, were based on input from soybean farmers and observations from Extension Educators in the region as possible limiting factors to maximum production of soybean.

Results
The Ada, Stephen and Roseau locations were abandoned during the season due to excess flooding of the plots on several occasions. The Kennedy location was harvested; however, excess moisture at this location had damaged in several occasions. The Kennedy location was harvested; during the season due to excess flooding of the plots on several occasions. The Kennedy location was harvested; however, excess moisture at this location had damaged in several occasions.

Experimental Design:
Randomized complete block with 4 replications

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield (bu/a)</th>
<th>Protein (%)</th>
<th>Oil (%)</th>
<th>Yield (bu/a)</th>
<th>Protein (%)</th>
<th>Oil (%)</th>
<th>Yield (bu/a)</th>
<th>Protein (%)</th>
<th>Oil (%)</th>
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<tbody>
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<td>34.6</td>
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<td>51.4</td>
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<td>30.6</td>
<td>35.5</td>
<td>17.5</td>
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<td>34.2</td>
<td>20.3</td>
<td>46.7</td>
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<td>19.3</td>
<td>26.6</td>
<td>35.4</td>
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<td>52.9</td>
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<td>19.1</td>
<td>38.5</td>
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<td>17.3</td>
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<tr>
<td>LSD (0.05)</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>0.6</td>
<td>NS</td>
<td>NS</td>
<td>6.2</td>
<td>NS</td>
</tr>
</tbody>
</table>

* Yields significantly reduced due to a late season harvest.

For additional information:
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Soybean Maximum Yield Evaluation

Cooperator: Geral Nordick
Nearest Town: Rothsay

Larry Hellerud
Ada
Ellsworth Danielson
Fosston
Keith Christensen
Thief River Falls
Brian Jenson
Stephen
Cenex West Plant
Roseau
Archie Lundell
Kennedy

Planting Date: May 20-31, 2002
Row Width: 10'
 Variety: MN 0302 (south sites) and Mycogen 5007 (north sites)
Harvest Dates: September 20 - October 5, 2002
Experimental Design: Randomized complete block with 4 replications

Soybean Maximum Yield Evaluation

Cooperator: Jim and Pat Todahl
Nearest Town: Fertile (F)

Plating Date: May 27, 2002 (F)
Planting Date: May 17, 2002 (C)
Row Width: 8" (F) and 22" (C)
Fertilizer: 3 ton/acre manure applied fall 2000 (F) and composted poultry manure had been added in previous years (C)
Inoculation: Soybeans seed was inoculated with Rhizobia bacteria
Weed Control: Harrowed 1 time. Due to wet weather, weeds were not adequately controlled (F) and hand weeded (C)
Harvest Date: October 10, 2002 (F) and September 26, 2002 (C)
Experimental Design: Randomized complete block with 4 replications

<table>
<thead>
<tr>
<th>Variety</th>
<th>Comstock*</th>
<th>Fertile*</th>
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<tbody>
<tr>
<td>Soybay</td>
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<tr>
<td>MN0 301</td>
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<td>Novara</td>
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<td>Jari</td>
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<td>Amosol</td>
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<td>Viper</td>
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<td>Trail</td>
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<td>Pesto</td>
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<td>UMA</td>
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<td>Minnato</td>
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<tr>
<td>Average</td>
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<tr>
<td>LSD (0.05)</td>
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<td>NS</td>
</tr>
</tbody>
</table>

* Yields were low due to heavy winds pressure.

For additional information:
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Organic Soybean Variety Evaluation

Purpose of Study
To evaluate soybean variety response under two management systems: hand weeded and seeded in rows (Comstock) and no weed control and solid seeded (Fertile). Both locations are certified organic.

Results
There were significant yield differences in Comstock. Varieties differed in their response to weed pressure. Proto had the greatest protein content. MN0 301 had the greatest oil content. Overall, protein and oil content were greater in Fertile compared to Comstock.

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