2016 Project Report

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Introduction to the project

United States is the largest soybean producer (35% of total production), and concentrates 80% of soybean production in the North Central (NC) region. Average soybean yield in the NC-USA region during 2010-2014 was 43 bu/acre, yet some producers attained soybean yields near or greater than 80 bushels/acre. This large gap between an average state yield and the very high yield obtained by some producers in that state needs to be explored and better understood.

The primary goal of the project is to “benchmark” current yield and management practices in producer fields across the NC-USA region. That “benchmark data” will help to identify those key management factors across the NC-USA region that can be used by individual producers to increase soybean yield on their farms, and do that with an input-use efficiency that will improve the bottom-line net profit.

The ‘benchmarking’ project started in October 1st, 2015, with funding support from the North-Central Soybean Research Program (NCSRP) and other state soybean boards such as the Nebraska Soybean Board (NSB) and the Wisconsin Soybean Marketing Board (WSMB). The project is led by University of Nebraska-Lincoln and University of Wisconsin, but includes collaborators in other key eight soybean producing states: IL, IN, IA, KS, MI, MN, ND, and OH. The project is organized in four major activities as described below.

The present report summarizes the producer data collected during the first year of the project. Requested data included yield, management, and applied inputs from dryland and irrigated fields planted with soybean in 2014 and 2015. Data were collected through surveys and an example of a filled survey is shown in the next page.
Example of a survey filled out by a Nebraska producer. Note that contact information and logos were customized for each of the 10 states participating in the project. Data are kept and analyzed under strict confidentiality.

<table>
<thead>
<tr>
<th>PRODUCER NAME:</th>
<th>MAILING ADDRESS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please provide information for four SOYBEAN fields on your farm in 2014. If you have questions, contact Professor Patricio Grassini (Phone: 402-472-5554 / e-mail: <a href="mailto:pgrassini12@unl.edu">pgrassini12@unl.edu</a>). Note that all provided info will be kept confidential! An EXAMPLE is shown in red.</td>
<td></td>
</tr>
</tbody>
</table>

### Example:

<table>
<thead>
<tr>
<th>2014 Soybean</th>
<th>2014 Soybean</th>
<th>2015 Soybean</th>
<th>2015 Soybean</th>
</tr>
</thead>
<tbody>
<tr>
<td>NE § 20 : 280</td>
<td>SW of Rd 11 &amp; N</td>
<td>NE § 20 : 280</td>
<td>SW of Rd 11 &amp; N</td>
</tr>
<tr>
<td>Saunders Co, SW of Rd 11 &amp; N</td>
<td>SW of Rd 11 &amp; N</td>
<td>Saunders Co, SW of Rd 11 &amp; N</td>
<td>SW of Rd 11 &amp; N</td>
</tr>
<tr>
<td>41.676, -100.257</td>
<td>41.676, -100.257</td>
<td>41.676, -100.257</td>
<td>41.676, -100.257</td>
</tr>
</tbody>
</table>

### OR GPS coordinates of field centroid:

<table>
<thead>
<tr>
<th>OR County &amp; field location relative to Rd Intersection:</th>
</tr>
</thead>
</table>

### Data kept and analyzed under strict confidentiality:
Surveyed fields distribution

<table>
<thead>
<tr>
<th>State</th>
<th>2014</th>
<th>2015</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>368</td>
<td>431</td>
<td>799</td>
</tr>
<tr>
<td>IL</td>
<td>41</td>
<td>47</td>
<td>88</td>
</tr>
<tr>
<td>IN</td>
<td>51</td>
<td>56</td>
<td>107</td>
</tr>
<tr>
<td>KS</td>
<td>68</td>
<td>70</td>
<td>138</td>
</tr>
<tr>
<td>MI</td>
<td>150</td>
<td>173</td>
<td>323</td>
</tr>
<tr>
<td>MN</td>
<td>31</td>
<td>38</td>
<td>69</td>
</tr>
<tr>
<td>ND</td>
<td>257</td>
<td>267</td>
<td>524</td>
</tr>
<tr>
<td>NE</td>
<td>430</td>
<td>494</td>
<td>924</td>
</tr>
<tr>
<td>OH</td>
<td>124</td>
<td>165</td>
<td>289</td>
</tr>
<tr>
<td>WI</td>
<td>130</td>
<td>177</td>
<td>307</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1650</strong></td>
<td><strong>1918</strong></td>
<td><strong>3568</strong></td>
</tr>
</tbody>
</table>
% of fields with irrigation

Proportion of irrigation system

Irrigation (in)

Average irrigation (in)
Average seeding rate (thousand seeds/ac)

Most common row spacing (in)

Prevalent row spacing (in)

Seeding rate (seeds/ac)

Row spacing (in)

Seeding rate
% of herbicide-treated fields

Herbicide application (%)

- 60-80
- 80-100

% of fungicide or insecticide-treated fields

Fungicide or insecticide-treated

- 0-20
- 60-80
- 20-40
- 80-100
- 40-60

Herbicide application

- both (76%)
- post-emergent (20%)
- pre-emergent (2%)
- none (1%)

Fungicide and/or insecticide application

- none (50%)
- insecticide (19%)
- fungicide (8%)
- both (24%)
% of phosphate-treated fields

% of potash-treated fields

% of starter-treated fields

% of fields with seed treatment
Average phosphate rate (lb P₂O₅/treated acre)

Average potash rate (lb K₂O/treated acre)

Phosphate rate (lb P₂O₅/treated acre)

Potash rate (lb K₂O/treated acre)
% of fields with known presence of soy cyst nematode (SCN)

Fields with soy cyst nematode (SCN)

% of fields with iron deficiency Chlorosis (IDC)

Fields with iron deficiency chlorosis (IDC)