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Soybean Date of Planting and Maturity in Northern Iowa

Mark Licht
Iowa State University, lichtma@iastate.edu

Matt Schnabel
Iowa State University, mschn@iastate.edu

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Soybean Date of Planting and Maturity in Northern Iowa

RFR-A1586

Mark Licht, cropping systems agronomist
Department of Agronomy
Matt Schnabel, superintendent

Introduction
Inevitably, every year soybean planting gets delayed or needs to be replanted because of weather somewhere in Iowa. Even if soybean planting starts and progresses in a timely manner, there is always the question of what maturity group should be planted. This trial was set up to determine what maturities are well suited for a given geographic location, but also how maturity selection should be adjusted as planting dates get pushed into late spring.

Materials and Methods
This project was conducted at the ISU Northern Research Farm as well as six additional Iowa State University research farms across Iowa in 2014 and 2015. In both years, three varieties (P22T69R, P25T51, 92Y75) were planted at four target planting dates (May 1, May 20, June 10, and July 1). The plots were set up in a split plot arrangement with four replications. Target planting date was the whole plot and variety was the split plot. A target seeding rate of 140,000 seeds/acre was used. Data collection included growth staging, grain yield, and grain moisture.

Results and Discussion
In both years, the early to mid-May dates of planting (DOP) had higher yields than subsequent DOP (Table 1 and Figure 1). A yield potential of 85 percent or greater was achieved when planting prior to May 20 or 23. These results support the ISU Extension and Outreach planting date recommendations of planting in early May as long as soil temperature and the weather forecast are favorable.

In 2014 and 2015, the highest yield was achieved with the 2.2 maturity (Table 1). Yield potential was not improved by switching to shorter season varieties at later planting dates.

Acknowledgements
This project was supported by the ISU Research and Demonstration Farms and the Iowa Agriculture and Home Economics Experiment Station. Seed was provided by DuPont-Pioneer.
Table 1. Soybean grain yield and moisture of three varieties at four planting dates at the ISU Northern Research Farm, Kanawha, Iowa, in 2014 and 2015.

<table>
<thead>
<tr>
<th>Actual date of planting</th>
<th>Grain yield (bu/ac)</th>
<th>Grain moisture (%)</th>
<th>Grain yield (bu/ac)</th>
<th>Grain moisture (%)</th>
<th>Grain yield (bu/ac)</th>
<th>Grain moisture (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/7/14</td>
<td>P22T69 (2.2 MG)</td>
<td>53.3</td>
<td>15.3</td>
<td>P25T51 (2.5 MG)</td>
<td>49.7</td>
<td>15.6</td>
</tr>
<tr>
<td>5/20/14</td>
<td>52.2</td>
<td>14.5</td>
<td>52.6</td>
<td>14.8</td>
<td>50.1</td>
<td>17.1</td>
</tr>
<tr>
<td>6/10/14</td>
<td>34.9</td>
<td>15.8</td>
<td>39.8</td>
<td>16.6</td>
<td>35.1</td>
<td>19.1</td>
</tr>
<tr>
<td>7/9/14</td>
<td>26.9</td>
<td>21.8</td>
<td>24.9</td>
<td>23.6</td>
<td>20.8</td>
<td>22.0</td>
</tr>
<tr>
<td>5/1/15</td>
<td>66.0</td>
<td>12.7</td>
<td>55.0</td>
<td>12.9</td>
<td>57.3</td>
<td>13.0</td>
</tr>
<tr>
<td>5/23/15</td>
<td>58.2</td>
<td>13.5</td>
<td>57.6</td>
<td>13.2</td>
<td>55.1</td>
<td>14.2</td>
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<tr>
<td>6/10/15</td>
<td>47.7</td>
<td>13.0</td>
<td>49.4</td>
<td>11.6</td>
<td>50.9</td>
<td>12.0</td>
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<tr>
<td>7/1/15</td>
<td>44.1</td>
<td>15.7</td>
<td>51.7</td>
<td>17.6</td>
<td>52.5</td>
<td>19.0</td>
</tr>
</tbody>
</table>

Figure 1. Soybean grain yield loss associated with delays in planting at the ISU Northern Research Farm, Kanawha, Iowa, in 2014 and 2015.