Trial Objective

- Agronomic practices, such as row spacing and seeding rate, have varying effects on yield potential. Narrow row spacing and increased seeding rates allow for more rapid canopy closure, which may reduce in-season weed competition.
- Depending on growing conditions and management practices, higher seeding rates and narrow rows can result in greater yield potential but can also promote disease development. When growing conditions are conducive to disease development, the application of a fungicide may help protect yield potential.
- This study was conducted to provide information to growers on the effects of row spacing, seeding rate, and fungicide application on soybean yield.

Research Site Details

<table>
<thead>
<tr>
<th>Location</th>
<th>Soil Type</th>
<th>Previous Crop</th>
<th>Tillage Type</th>
<th>Planting Date</th>
<th>Harvest Date</th>
<th>Potential Yield (bu/acre)</th>
<th>Seeding Rate (seeds/acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thurman, IA</td>
<td>Silty loam</td>
<td>Corn</td>
<td>Conventional</td>
<td>05/07/18</td>
<td>10/29/2018</td>
<td>75</td>
<td>120K, 150K</td>
</tr>
</tbody>
</table>

- Nine Channel® brand Roundup Ready 2 Xtend® soybean products ranging from 3.1 to 3.9 maturity group were evaluated.
- This was a single-site, non-replicated strip trial.
- Treatments consisted of 480 ft long rows as follows:
  - Fungicide application of fluxapyroxad plus pyraclostrobin at 4 oz/acre at R3, and an untreated check
  - Seeding rates of 120,000 (120K) and 150,000 (150K) seeds/acre
  - Row spacing of 20 and 30 inches
- Weed management consisted of a pre- and post-emergence program.
- Low disease pressure was observed at the research site.

Understanding the Results

- 20” spacing out-yielded 30” in all the varieties except in 3617R2X. The narrow rows provided on average a 2.9 bu/acre advantage (Fig. 1).
- There was a variable response to seeding rate by the varieties (Fig. 2). Whereas there was no response in 3119R2X, yield was higher at 150K for 3116R2X and 3519R2X. For the remaining six varieties, 120K out-yielded 150K.
Row Spacing, Seeding Rate, and Fungicide Effects on Soybean Yield

Figure 1. Yield response of Channel® brand soybean products to row spacing. Data represent the average yields across fungicide treatments and seeding rates.

Figure 2. Yield response of Channel® brand soybean products to seeding rate. Data represent the average yields across fungicide treatments and row spacing.
Row Spacing, Seeding Rate, and Fungicide Effects on Soybean Yield

Figure 3. Yield response of soybean to row spacing, seeding rate, and fungicide treatment. Data represent the average of the nine products used in the trial.

- The average performance of the varieties in the trial is summarized in Figure 3.
- The fungicide application did not show an economical return on investment.
- Across fungicide treatments; in the 20-inch row treatments, the two seeding rates produced nearly similar yields.
- Across fungicide treatments; In the 30-inch row treatments, the seeding rate of 120,000 seeds/acre showed a 1.6 bu/acre advantage.

What Does this Mean for Your Farm?

- Is there a benefit to a fungicide application?
  - For this study year and location, there was no yield benefit with the application of a fungicide at the R3 growth stage.
  - Growing conditions did not favor the development of diseases common to the region. Growers should monitor for white mold as it can be problematic in high yield environments, narrow row spacing, and high seeding rates.
  - Growers are reminded to pay attention to the economics of fungicide applications as they may not always be justified depending on the weather conditions, crop susceptibility, and several other factors.
Row Spacing, Seeding Rate, and Fungicide Effects on Soybean Yield

- How does row spacing affect yield potential?
  - In this single-year study, 20-inch row spacing out-yielded 30-inch row spacing by approximately 2.9 bu/acre.
  - Equipment availability may affect the decision to plant narrower rows on individual farms.

- Will higher seeding rates affect yield potential?
  - In this single-year study, the seeding rate of 120,000 seeds/acre out-performed 150,000 seeds/acre by approximately 1.1 bu/acre across both row spacings and the fungicide application.
  - It should be noted that final harvest population in soybean fields may be affected by many factors and does not always reflect the intended seeding rate.

- Results from this trial indicated that yield potential may be improved when soybean are planted in 20-inch rows.

Legal Statements

The information discussed in this report is from a single-site, non-replicated demonstration trial. This informational piece is designed to report the results of this demonstration and is not intended to infer any confirmed trends. Please use this information accordingly.

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Roundup Ready 2 Xtend® soybeans contains genes that confer tolerance to glyphosate and dicamba. Glyphosate will kill crops that are not tolerant to glyphosate. Dicamba will kill crops that are not tolerant to dicamba. Contact your seed brand dealer or refer to the Technology Use Guide for recommended weed control programs.

Performance may vary, from location to location and from year to year, as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible and should consider the impacts of these conditions on the grower’s fields.

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