Dry Edible Bean Performance as Influenced by Plant Density

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INTRODUCTION

Production of edible dry beans in a major agricultural enterprise in North Dakota and Montana. The high-level interest in beans stems from the need for the seed industry to produce more in a given area than in previous years. The need for increased production has continued to increase as the demand for beans has grown. The high-level interest in beans stems from the need for the seed industry to produce more in a given area than in previous years. The need for increased production has continued to increase as the demand for beans has grown.

Figure 1. Planting with a no-till seeder in North Dakota.

RESULTS AND DISCUSSION

Early research in North Dakota indicated a doubling of dry bean yield with increased plant spacing (Type I) to 0.46 m apart. These early results suggest that spacing may have a positive impact on yield and quality. Further research needs to be conducted to determine the optimal plant density for dry bean production.

Data from this study indicated that plant density had a significant effect on yield and seed quality. Differences in plant density had a limited effect on most agronomic traits. Seed yields were significantly increased as plant density was increased from 222,000 to 296,000 pure live seeds per ha. This resulted in a greater harvest index and seed yields of 222,000, 259,000, and 296,000 pure live seeds per ha.

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Table 2. Influence of seeding rate on seed yield and selected agronomic traits of dry edible bean.

<table>
<thead>
<tr>
<th>Seeding Rate (plants/ha)</th>
<th>Seed Yield (kg/ha)</th>
<th>Height (cm)</th>
<th>Plant Stand (plants/m²)</th>
<th>Plant Bloom (days after planting)</th>
<th>Days to Maturity (days after bloom)</th>
<th>Seed Weight (kg/1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>222,000</td>
<td>2.9</td>
<td>216</td>
<td>102</td>
<td>91</td>
<td>236</td>
<td>13.1</td>
</tr>
<tr>
<td>259,000</td>
<td>3.1</td>
<td>216</td>
<td>104</td>
<td>91</td>
<td>236</td>
<td>13.1</td>
</tr>
<tr>
<td>296,000</td>
<td>3.2</td>
<td>214</td>
<td>104</td>
<td>91</td>
<td>236</td>
<td>13.1</td>
</tr>
</tbody>
</table>

Dry bean yield was influenced by the seeding rate in this experiment. The 222,000 plants/ha treatment resulted in a yield of 2.9 kg/ha, while the 296,000 plants/ha treatment resulted in a yield of 3.2 kg/ha. The response between these two cultivars may be expected, given the similar agronomic characteristics of the two cultivars.

REFERENCES


INTRODUCTION

The impact of plant density, on dry bean yield. In general, plant density affects yield and is important for understanding the economic viability of various management practices. This knowledge can be used to optimize production practices and increase yields.

Materials and methods

Producers in the region prefer to maintain one piece of planting equipment to plant a wide range of crops. This equipment is typically used for both field crop and dry bean production. Dry bean cultivars of the Type II growth habit preferred these cultivars because of favorable yields, possible improved disease tolerance and overall agronomics. Dry bean cultivars of the Type II growth habit preferred these cultivars because of favorable yields, possible improved disease tolerance and overall agronomics.

Table 1. Influence of row spacing on seed yield and selected agronomic traits of dry edible bean.

<table>
<thead>
<tr>
<th>Row Spacing (m)</th>
<th>Seed Yield (kg/ha)</th>
<th>Height (cm)</th>
<th>Plant Stand (plants/m²)</th>
<th>Plant Bloom (days after planting)</th>
<th>Days to Maturity (days after bloom)</th>
<th>Seed Weight (kg/1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.18</td>
<td>2.9</td>
<td>216</td>
<td>102</td>
<td>91</td>
<td>236</td>
<td>13.1</td>
</tr>
<tr>
<td>0.22</td>
<td>3.1</td>
<td>216</td>
<td>104</td>
<td>91</td>
<td>236</td>
<td>13.1</td>
</tr>
<tr>
<td>0.27</td>
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<td>91</td>
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