Five-Year Summary of Effect of Row Width on Wheat Yield

Objective: To compare the yield of wheat grown in rows spaced 7.5 and 15-inches apart.

Background (2000-2004):
- Test Site: Ohio State University Unger Farm
- County: Crawford
- Soil Type: Pewamo/Blount
- Tillage: Disk
- Previous Crop: Soybeans
- Soil Test: pH 6.8, P 26 ppm, K 124 ppm
- Row Widths: 7.5 and 15 inch
- Fertilizer: 120-80-105
- Seeding Rate: 120 lbs/acre
- Wheat Planting Date: 10/9/03
- Wheat Harvest Date: 7/05/04
- Herbicide: 2,4-D 1 pt/acre

Methods:
A completely randomized design with two treatments and five replications was used. Treatments were rows spaced 7.5 and 15 inches apart. Plots were 5.5 feet wide and 50 feet long. Wheat was planted with a three-point hitch mounted tool bar planter equipped with Great Plains seed meters and sunflower openers. Harvest was accomplished with a research plot combine.

Results:
Table 1. Effect of Row Spacing on Wheat Yield in Crawford County, Ohio, 2000-2003

<table>
<thead>
<tr>
<th>Year and Variety</th>
<th>7.5” Rows</th>
<th>15” Rows</th>
<th>F-Test</th>
<th>LSD (0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000 I9824</td>
<td>72.3</td>
<td>70.8</td>
<td>&lt;1</td>
<td>NS</td>
</tr>
<tr>
<td>2001 Agra 962</td>
<td>86.7</td>
<td>79.2</td>
<td>14.5</td>
<td>4.4</td>
</tr>
<tr>
<td>2002 Agra 962</td>
<td>85.1</td>
<td>76.8</td>
<td>28.3</td>
<td>3.5</td>
</tr>
<tr>
<td>2003 INW0301</td>
<td>66.8</td>
<td>58.6</td>
<td>19.76</td>
<td>4.26</td>
</tr>
<tr>
<td>2004 INW0301*</td>
<td>86.5</td>
<td>84.7</td>
<td>.92</td>
<td>NS</td>
</tr>
<tr>
<td>5-Year Average</td>
<td>79.5</td>
<td>74.0</td>
<td>.80</td>
<td>NS</td>
</tr>
</tbody>
</table>

* INW0301 also named Brandy

Summary:
What level of wheat yield can be grown in 15 inch rows versus the row spacing of 7.5 inches? With new precision planting implements for soybeans planted in 15 inch rows and the new technology of polymer coated soybeans, this question is important to producers evaluating the
profitability of new planting and alternate cropping systems such as modified relay intercropping. In the first and fifth year of this study, the yield of wheat grown in two different row widths was not significantly different. In the second, third, and fourth years, yield was significantly different with higher yields in the narrower row wheat planting. When comparing the two treatments over the five-year period, yields were not statistically different however there was a 5.5 bushel per acre difference.

The yield difference in specific years has varied from about 2 to 8.2 bushels per acre. This result is consistent with work conducted by Beuerlein et al (Profitable Wheat Management, Extension Bulletin 811, page 18) on the effect of row spacing wheat yield on Ohio.

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