Corn Grain Yield Change For Narrower Compared to 30-inch Row Spacing in Wisconsin

N= 32 trials
Increased in 6 trials
Decreased in 5 trials
Average = 0.4%
**Michigan Row Spacing study**

**Methods**

- 15 total site-years (5 Sites x 3 Years)
- 4 hybrids per Site
- 5 populations per site (23000, 26400, 29800, 33200, 36500 plants/A)
- 3 row widths (15, 22, 30 in)
- 2640 total plots

**Source:** Widdicombe and Thelen, 2002 (AJ 94:1020)
Corn response to row width in Michigan 1998-1999. Each value is the mean of 880 plots.

<table>
<thead>
<tr>
<th>Row width (in)</th>
<th>Yield (bu/A)</th>
<th>Moisture (%)</th>
<th>Stalk Lodging (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>177 c</td>
<td>19.6 a</td>
<td>1.60 b</td>
</tr>
<tr>
<td>22</td>
<td>181 b</td>
<td>19.2 b</td>
<td>1.92 a</td>
</tr>
<tr>
<td>15</td>
<td>184 a</td>
<td>19.2 b</td>
<td>1.65 b</td>
</tr>
</tbody>
</table>

Corn Performance in Narrow Rows in Michigan 1997-99 Three Year Averages

Widdecombe and Thelen, 2002
Conclusions from Michigan

- Corn grain yield increased 2% and 4% when row width was narrowed from 30 inches to 22 inches and from 30 inches to 15 inches.

- Increasing plant density had a quadratic plateau effect on grain yield.

- Grain moisture was negatively correlated and test weight was positively correlated with plant density.

- As plant density increased corn forage yield increased and DMD, ADF, NDF, and CP were adversely affected.
Paired ("Twin") Row Corn

• Karlen and Kasperbauer (1989) reported a 9% decrease in corn yield in the SE USA from twin rows compared to 30 in single rows.

• Ottman and Welch (1989) reported no differences between single 30 in rows and twin rows on 30 in centers (-2% difference).
“Twin-” or “Paired-Row” Corn Planters

ATI Monosem, KS

Great Plains, KS

http://corn.agronomy.wisc.edu
## Recent University Trials Evaluating Twin-Row Corn

(JD = John Deere, GPPS = Great Plains Precision System)

<table>
<thead>
<tr>
<th>State</th>
<th>Years</th>
<th>Tests</th>
<th>Planter comparison</th>
<th>Yield advantage for Twin-rows (bu/A)</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>2002-2004</td>
<td>3</td>
<td>JD 7000</td>
<td>2.1</td>
<td>McGrath et al.</td>
</tr>
<tr>
<td>PA</td>
<td>2002</td>
<td>1</td>
<td>GPPS v JD1780</td>
<td>1.4</td>
<td>Roth et al.</td>
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<tr>
<td>ON</td>
<td>1995-1999</td>
<td>15</td>
<td>Unknown</td>
<td>5.0</td>
<td>Stewart</td>
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<tr>
<td>MO</td>
<td>2001</td>
<td>7</td>
<td>GPPS v JD7000</td>
<td>-9.7</td>
<td>Nelson &amp; Smoot</td>
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<tr>
<td>DE, MA</td>
<td>2003-2004</td>
<td>4</td>
<td>GPPS v JD</td>
<td>-5.0</td>
<td>Kratochvil &amp; Taylor</td>
</tr>
<tr>
<td>OH</td>
<td>2004</td>
<td>6</td>
<td>GPPS v JD</td>
<td>-9.0</td>
<td>Watters &amp; Foster</td>
</tr>
<tr>
<td>OH</td>
<td>2005</td>
<td>1</td>
<td>GPPS v JD7000</td>
<td>-1.5</td>
<td>Wert</td>
</tr>
</tbody>
</table>

**Average:** -2.4
Paired Row Comparisons in Ontario (Stewart)

Woodstock, ON (1999)
Highgate, ON (1998-1999)
Woodstock, ON (1997-1998)
Ridgeton, ON (1995-1996)

Grain yield (bu/A)

Paired_row_30_inch

http://corn.agronomy.wisc.edu
University of Wisconsin - Agronomy
Lauer © 1994-2009

[Graph showing grain yield comparisons across different locations in Ontario with years and yields indicated.]