Wheat Yields in an Intercropping System vs. a Conventional Production System
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Objective
To compare wheat yields in a Modified Relay Intercropping (MRI) system and a conventional production system.

Background
Cooperator: OSU Unger Farm
Soil Test: pH 7.3, P 16 ppm, K 88 ppm
County: Crawford
Fertilizer: 26-104-120, fall 1997
Soil type: Pewamo, Blount
95 lbs/A nitrogen topdressed
Drainage: Systematic
Herbicides: 2,4-D ester (1.0 pt/A)
Tillage: Disk 2x
Interseeding Date: June 9, 1999
Previous Crop: Soybeans

Methods
The Ohio Wheat Performance Test and MRI plots were located on different fields but the same farm site in 1999. Fertility and weed control for the conventional and Modified Relay Intercropped wheat were the same.

Row spacing in the conventional system was 7.5 inches and in the MRI system it was 10 inches. There was also a 20-inch tramline in the MRI system plots. Fall planting date was slightly different between the conventional wheat (9/30/99) and MRI system wheat (10/5/98). The winter and spring weather was ideal for wheat production.

Results
Table 1. Yield Comparison of MRI and Conventional System.

<table>
<thead>
<tr>
<th>Variety</th>
<th>MRI Yield (bu/A)</th>
<th>Conventional Yield (bu/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hopewell</td>
<td>80</td>
<td>94</td>
</tr>
<tr>
<td>X15</td>
<td>80</td>
<td>93</td>
</tr>
<tr>
<td>Agra962</td>
<td>88</td>
<td>95</td>
</tr>
<tr>
<td>Average</td>
<td>83</td>
<td>94</td>
</tr>
</tbody>
</table>

F = 17.3, significant at P = 0.05
CV 3.8, LSD (0.05) = 7.6.

Summary and Notes
J. Beuerlein of Ohio State University has reported from previous research that there was no difference in wheat yield between 7.5-inch and 10-inch row wheat in conventional systems. There was a significant difference between 10-inch wheat yield in an MRI system and 7.5-inch wheat in a conventional production system. MRI wheat yields on average were 11 bushels
(13.9%) less than conventional wheat yields. Previous work done by Dr. D. Jeffers of Ohio State University indicated about a 10% yield differential between conventional and MRI wheat yields. However, most of the previous work was done in lower yielding wheat.

The seeding of soybeans into wheat in 1998 damaged wheat and reduced yield; however, in 1999 little damage was done to the wheat as a result of the interseeding. Other analyses in 1999 would indicate the tramline being responsible for the greatest amount of variation in yield between the two systems.

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