Tillage & Clover Effect on Wheat Production

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Objective

To evaluate the effect of tillage and adding red clover cover crop on wheat production.

Background

Cooperator: O.A.R.D.C. NW Branch
County: Wood
Nearest Town: Hoytville
Drainage: Tile, well-drained
Soil type: Hoytville, clay
Tillage: no-till & conservation
Previous Crop: see below
Variety: Becks 113DT
Fertilizer: fall 300 # 10-26-26 4-5-10 topdress, 20 GPA 28%
Planting Date: 10-22-09
Planting Rate: 1.8 million/acre
Row Width: 7.5 in
Herbicides: none
Harvest Date: 7-1-10

Methods

The entries were replicated four times in a randomized complete block design. Plot size- 10 feet x 70 feet each entry. Harvest data collected from center rows. All systems compared no-till to conservation tillage which left 30% surface residue. Conservation tillage used shallow field cultivator in soybean residue and disk chisel and finish tool in corn residue. The same crop was planted on all treatments on the same day, using the same variety, and fertility. Red clover was seeded by hand on 4-5-10 at a rate of 12 lb/ac., simulating a typical situation of mixing the seed with the topdress fertilizer application.

RESULTS

<table>
<thead>
<tr>
<th>WHEAT</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>Tillage</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>Corn</td>
<td>Soybean</td>
<td>Wheat/Clover</td>
<td>No-till</td>
<td>57.5  a</td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>Corn</td>
<td>Soybean</td>
<td>Wheat</td>
<td>No-Till</td>
<td>60.6  a</td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>Corn</td>
<td>Soybean</td>
<td>Wheat</td>
<td>Tillage</td>
<td>69.9  b</td>
<td></td>
</tr>
<tr>
<td>Wheat</td>
<td>Corn</td>
<td>Soybean</td>
<td>Wheat/Clover</td>
<td>Tillage</td>
<td>71.1  b</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LSD (0.05)</td>
<td>5.1</td>
<td></td>
</tr>
</tbody>
</table>
Summary

The tillage system was significantly better in yield compared to the no-till wheat system. (In most previous years, no-till has given higher yields than tillage.) The addition of red clover underseeding did not effect wheat yield when comparing the same tillage system.

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