Soybean Management Comparison

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Objective

To compare the productivity of two soybean production systems. One is a no-till conventional system compared to an organic soybean production system.

Background

Cooperator: Ag Incubator Foundation  Soil test: pH-6.4, P-71 ppm, K-288 ppm, CEC-20.5
County: Wood  Planting Date: no-till: May 25, 2008
Drainage: tile, well-drained  Planting Rate: 200,000 seed/ac
Soil type: Hoytville, clay  Row Width: no-till: 7.5 in.; organic: 30 in
Tillage: listed below  Herbicides: listed below
Previous Crop: corn  Harvest Date: October 7, 2008

Methods

Each system was replicated five times in a randomized complete block design. Individual plot size was .55 acre in 30-foot wide strips. The center of each strip was harvested the length of the strip and weighed using a weigh wagon. The following systems were compared.

1. No-till system: previous crop corn, No-till drill into corn stalks. Non-GMO bin run soybean seed. Herbicide: Broadstrike, Sonic, Durango.

Weed populations in the soybean row were considerably higher in the organic system compared to the conventional system. Plant populations were higher in the conventional system.
### Results

<table>
<thead>
<tr>
<th>Soybean System</th>
<th>Soybean Yield bu/ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>No-till</td>
<td>28.8 a</td>
</tr>
<tr>
<td>Organic</td>
<td>18.5 b</td>
</tr>
<tr>
<td>LSD (0.05)</td>
<td>5.8</td>
</tr>
</tbody>
</table>

### Summary

In this comparison, no-till conventional soybean yields were significantly higher than certified organic soybean yields, however net income per acre is higher with the organic soybean system due to higher price per bushel for organic. When comparing net income, the organic system would need a selling price of $14.00 / bushel to equal the income from the no-till system at $9.00 / bushel selling price. Typically organic prices are over double conventional grain prices.

<table>
<thead>
<tr>
<th>System</th>
<th>Yield Bu/ac</th>
<th>Price $/bu</th>
<th>gross income</th>
<th>Seed cost</th>
<th>Machinery cost</th>
<th>Herbicide cost</th>
<th>Net income $/ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>No-till</td>
<td>28.8</td>
<td>$9.00</td>
<td>$259.20</td>
<td>$41.94</td>
<td>$43.95</td>
<td>$21.10</td>
<td>$144.92</td>
</tr>
<tr>
<td>Organic</td>
<td>18.5</td>
<td>$19.00</td>
<td>$351.50</td>
<td>$57.00</td>
<td>$57.28</td>
<td>$0.00</td>
<td>$237.22</td>
</tr>
</tbody>
</table>

Expenses when comparing no-till versus organic need to account for herbicide, seed, and tillage costs.

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