**Organic Oat Variety Evaluation**

**Clay County**

**Cooperator:** Lynn Brakke  
**Nearest Town:** Comstock  
**Soil Type:** Borup loam  
**Tillage:** Fall chisel, spring cultivated  
**Previous Crop:** Soybeans  
**Variety:** See table  
**Planting Date:** May 17, 2002  
**Row Width:** 9"  
**Fertilizer:** 900 lbs/a "Cluck" 4-4-2 applied fall 2001  
**Weed Control:** Harrowed 2.5 mph on May 22, 31, June 7 and 12, 2002. Handweeding after heading  
**Harvest Date:** August 19, 2002  
**Experimental Design:** Randomized complete block with 4 replications

**Purpose of Study**
To evaluate yield, test weight, crop height, rust, and weed pressure of different oat varieties grown under a certified organic production system.

**Results**
Differences in yield, test weight, crop height, pigweed numbers and rust levels were found in this study. Morton was significantly greater yielding than the five lowest yielding varieties. Buff, a hulless variety, had the lowest yield but the highest test weight.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Yield¹ (bu/acre)</th>
<th>Test Weight (lbs/bu)</th>
<th>Crop Height (inches)</th>
<th>Pigweeds² (’H’)</th>
<th>Rust³ (’B-9’)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morton</td>
<td>86.7</td>
<td>29.2</td>
<td>45.8</td>
<td>0.40</td>
<td>0.0</td>
</tr>
<tr>
<td>HiFi</td>
<td>83.3</td>
<td>27.1</td>
<td>43.0</td>
<td>0.35</td>
<td>0.0</td>
</tr>
<tr>
<td>Richard</td>
<td>78.6</td>
<td>27.2</td>
<td>44.0</td>
<td>0.35</td>
<td>6.8</td>
</tr>
<tr>
<td>Ebholt</td>
<td>76.5</td>
<td>28.5</td>
<td>39.4</td>
<td>0.35</td>
<td>2.3</td>
</tr>
<tr>
<td>Leonard</td>
<td>75.8</td>
<td>23.0</td>
<td>42.6</td>
<td>0.31</td>
<td>4.5</td>
</tr>
<tr>
<td>Sesqua</td>
<td>72.7</td>
<td>28.0</td>
<td>41.8</td>
<td>0.31</td>
<td>0.0</td>
</tr>
<tr>
<td>Wabasha</td>
<td>71.1</td>
<td>27.2</td>
<td>39.7</td>
<td>0.47</td>
<td>2.3</td>
</tr>
<tr>
<td>Hytest</td>
<td>67.0</td>
<td>31.0</td>
<td>43.0</td>
<td>0.09</td>
<td>9.0</td>
</tr>
<tr>
<td>Youngs</td>
<td>60.0</td>
<td>24.2</td>
<td>45.1</td>
<td>0.45</td>
<td>6.8</td>
</tr>
<tr>
<td>Buff</td>
<td>50.1</td>
<td>39.9</td>
<td>40.2</td>
<td>0.54</td>
<td>0.0</td>
</tr>
<tr>
<td>LSD (0.05)</td>
<td>12.4</td>
<td>2.0</td>
<td>1.4</td>
<td>0.15</td>
<td>3.7</td>
</tr>
</tbody>
</table>

¹ Corrected to 14% moisture  
² Pigweeds/’H’-poking above canopy on June 28, 2002  
³ 0-9-30 rust on plants, 9-60 rust on all plants

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**Polk County**

**Mechanical Weed Control in Organically Grown Wheat**

**Cooperator:** Jim and Pat Todahl  
**Nearest Town:** Fertile  
**Soil Type:** Flaming sandy loam  
**Tillage:** Fall chiseled, spring cultivated  
**Previous Crop:** Soybeans  
**Variety:** Reeder and Gunner  
**Planting Date:** May 27, 2002  
**Row Width:** 7’  
**Weed Control:** Certified organic field  
**Plant Populations:** 1.4 million seeds/acre  
**Harvest Date:** August 23, 2002  
**Experimental Design:** Randomized complete block with 3 replications

**Purpose of Study**
To evaluate the effect of various harrow treatments on stand and yield of two hard red spring wheat varieties grown in an organic system.

**Results**
Yield: Averaged over harrow treatments, Reeder significantly out-yielded Gunner (34 bu/acre vs. 22 bu/acre)

**Weed Control:** Weed control was not significantly affected by harrow treatment or variety.

**Stand:** Harrow treatments varied from 2 to 5 passes with a 4 bar spring tooth harrow in a time period from 1 to 21 days after planting. Total stand loss for the various harrow treatments ranged from 9 to 27%. The varieties Gunner and Reeder had similar stand loss for the various harrow treatments. Harrowing is most effective when performed when wheat and weeds are small even though there is more stand loss when wheat is small.

Previous research would suggest that a good rule of thumb for organic wheat farmers is to plant an additional 10% pure live seed for every planned harrow operation. Farmers should always check behind the harrow at the beginning of an operation to evaluate whether or not stand loss is excessive due to soil conditions, equipment setting, or other factors.