CORN: Zea mays L

CONTROL OF ROOTWORM LARVAE IN CORN, 2012

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Western Corn Rootworm: Diabrotica virgifera virgifera LeConte
Northern Corn Rootworm: Diabrotica barberi Smith and Lawrence

The purpose of this experiment was to examine the efficacy of a combination of a transgenic hybrid and soil applied insecticides to control of corn rootworm larvae. The experiment was conducted in Cedar County and Wayne County, Nebraska during 2012. Experimental design was a RCB with four replications. Treatments at the Cedar County location were applied 8 May during planting of corn Zea mays L in continuous corn. Treatments at the Wayne County location were applied 9 May during the planting of corn Zea mays L in continuous corn. All treatments were applied before the packing wheels and planted with a two row John Deere planter with XP units using mechanical drive finger pickups. Granular insecticides were applied with radial belt meters and delivered through T bands. Plots were four rows wide by 30 ft in length with a four foot alley. Six roots were randomly dug from each plot in rows 1 and 4, and then soaked, pressure-washed, and rated using the Iowa State 0-3 scale. Yields were machine harvested from the middle two rows. Results were analyzed using ANOVA procedures. Treatment means were separated using LSD procedures.

At the Cedar County location the feeding pressure by corn rootworm larvae was moderate with the untreated check averaging 1.06 nodes pruned out of 3. All treatments had significantly lower root ratings than the untreated check. There were no significant differences in root ratings between the Herculex Xtra treatment and any of the Herculex Xtra plus soil insecticide treatments.

At the Wayne County location the feeding pressure by corn rootworm larvae was severe, averaging over 2.78 nodes pruned out of 3. All treatments had significantly lower root ratings than the untreated check. The root rating of the Herculex Xtra alone treatment was significantly higher than those of Herculex Xtra plus soil insecticide treatments.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Insecticide Rate</th>
<th>Cedar County Root rating Mean</th>
<th>Wayne County Root rating Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated Check</td>
<td></td>
<td>1.060a</td>
<td>2.775a</td>
</tr>
<tr>
<td>Herculex Xtra</td>
<td></td>
<td>0.035b</td>
<td>0.575b</td>
</tr>
<tr>
<td>Herculex Xtra with Force 3.0 G</td>
<td>4.0 oz/1000 feet of row</td>
<td>0.030b</td>
<td>0.100c</td>
</tr>
<tr>
<td>Herculex Xtra With Aztec 2.1 G</td>
<td>6.7 oz/1000 feet of row</td>
<td>0.045b</td>
<td>0.175c</td>
</tr>
<tr>
<td>Herculex Xtra With Lorsban 15G</td>
<td>8.0 oz/1000 feet of row</td>
<td>0.048b</td>
<td>0.175c</td>
</tr>
</tbody>
</table>

* Means with the same letter are not significantly different (LSD; $P = 0.05$).