Sugarbeet Diseases/Insects
That Will Impact The RRV

Your Way to Grow 2012
Agenda

• Diseases
  – Rhizoctonia
  – Aphanomyces
  – Rhizomania
  – Fusarium
  – Cercospora

• Insects
  – Root Maggot
  – Springtail
Rhizoctonia Management

• Rhizoctonia has quickly become one of the most serious diseases in the RRV
• 54,893 acres treated with Headline at-plant in 2011
• 190,212 acres treated with Quadris post emerge in 2011
• Susceptible crops to Rhizoctonia include sugarbeet, soybean, dry bean, corn, canola, flax, potato, sunflower and alfalfa
2010 Disease Rating
Rhizoctonia

* The disease ratings are general in nature and may not be representative of all fields in a township.
Rhizoctonia Control Strategies

• Select variety with a Rhizoctonia rating of 3.82 or <
• Use seed treatments
• In-furrow fungicides
• Keep soil out of the crown
• Apply fungicide on 4-6 leaf beets as soil temps reach 65°F (timing very critical)
• Crop rotation planning
  – Wheat or Barley will slow inoculum buildup
Seed Treatments

• The only seed treatment currently available in 2012 is Metlock (metconazole and metalaxyl)
• Tested by Carol Windels in 2010
   – Page 253 in 2010 Sugarbeet R & E Reports
   – Tested by Mark Bredehoft (SMBSC) in 2011
• Metlock only fair for seedling Rhizoctonia control
At-Plant Treatments

- **Quadris** must be applied in a 4” T-band at 10 - 14 oz/acre rate
  - Stand loss may occur especially in-furrow with starter
  - Risk of stand loss with T-band is pretty low
- **Headline** can be applied in-furrow w/starter
  - Slight Rhizoctonia pressure use 6 – 9 oz/acre
  - Moderate to Severe pressure use 9 – 12 oz/acre
    - Some risk of stand loss
- **Vertisan** no current label
  - Likely to be commercially available in 2013
  - Will be most effective at-plant option
Stand establishment of sugarbeet seed treated with different fungicides or in-furrow applications of fungicides in a field trial with severe early-season disease pressure from R. Solani AG 2-2. (Windels and Brantner, 2011).
## Site 1: At-plant treatment harvest results

*Windels and Brantner, Univ. of MN NWROC, 2011*

<table>
<thead>
<tr>
<th>Treatment</th>
<th>RCRR (0-7)</th>
<th>Yield (T/A)</th>
<th>% Sugar</th>
<th>lb recov./A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>4.9 ab</td>
<td>16.8 bc</td>
<td>16.7 c</td>
<td>5081 bc</td>
</tr>
<tr>
<td>Dynasty</td>
<td>5.5 a</td>
<td>13.4 c</td>
<td>17.1 bc</td>
<td>4196 c</td>
</tr>
<tr>
<td>Penthiopyrad</td>
<td>3.8 cd</td>
<td>23.0 a</td>
<td>17.3 bc</td>
<td>7317 a</td>
</tr>
<tr>
<td>Sedaxane</td>
<td>5.1 ab</td>
<td>16.7 bc</td>
<td>16.7 c</td>
<td>5094 bc</td>
</tr>
<tr>
<td>Stamina</td>
<td>4.5 bc</td>
<td>19.9 ab</td>
<td>17.2 bc</td>
<td>6207 ab</td>
</tr>
<tr>
<td>Headline I-F</td>
<td>3.6 d</td>
<td>22.1 a</td>
<td>17.6 ab</td>
<td>7108 a</td>
</tr>
<tr>
<td>Quadris I-F</td>
<td>2.7 e</td>
<td>21.5 ab</td>
<td>17.6 ab</td>
<td>6926 a</td>
</tr>
<tr>
<td>Vertisan I-F</td>
<td>2.8 e</td>
<td>23.6 a</td>
<td>18.2 a</td>
<td>7942 a</td>
</tr>
</tbody>
</table>

**ANOVA p-value**

<table>
<thead>
<tr>
<th></th>
<th>&lt;0.0001</th>
<th>0.007</th>
<th>0.010</th>
<th>0.005</th>
</tr>
</thead>
</table>

**LSD (P = 0.05)**

|                           | 0.8     | 5.1   | 0.75  | 1785  |
### Site 2: Post treatment harvest results

Windels and Brantner, Univ. of MN NWROC, 2011

<table>
<thead>
<tr>
<th>Treatment</th>
<th>RCRR (0-7)</th>
<th>Yield (T/A)</th>
<th>% Sugar</th>
<th>lb recov./A</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Quadris</td>
<td>3.2</td>
<td>22.4</td>
<td>17.2</td>
<td>6932</td>
</tr>
<tr>
<td>Quadris</td>
<td>2.1</td>
<td>24.2</td>
<td>17.2</td>
<td>7490</td>
</tr>
</tbody>
</table>

Post-emergence application 14.3 oz/acre in a 7 – inch band

Quadris application timely = effective
<table>
<thead>
<tr>
<th></th>
<th>AT-PLANT</th>
<th>AT-PLANT</th>
<th>POST</th>
<th>POST</th>
</tr>
</thead>
<tbody>
<tr>
<td>METHOD</td>
<td>T-BAND (4”)</td>
<td>IN-FURROW</td>
<td>BAND (7-11”)</td>
<td>BROADCAST</td>
</tr>
<tr>
<td>TIMING</td>
<td>At plant</td>
<td>At plant</td>
<td>Just prior to 65° F</td>
<td>Just prior to 65° F</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4” soil temp</td>
<td>4” soil temp</td>
</tr>
<tr>
<td>RATE</td>
<td>10 oz/Acre</td>
<td>6-9 oz/Acre</td>
<td>10 oz/Acre</td>
<td>15 oz/Acre</td>
</tr>
<tr>
<td>TANK-MIXES</td>
<td>None</td>
<td>Recommended</td>
<td>Glyphosate w/ min. surfactant</td>
<td>Glyphosate w/ min. surfactant</td>
</tr>
<tr>
<td>WATER VOL.</td>
<td>8 gal/A</td>
<td>&gt;1 gal/A</td>
<td>10-20 gal/A</td>
<td>10-20 gal/A</td>
</tr>
<tr>
<td>NOTES</td>
<td>• T-banding is the safest</td>
<td>• Some stand loss may</td>
<td>• Do not mix with</td>
<td>• Do not mix with</td>
</tr>
<tr>
<td></td>
<td>option for at-plant</td>
<td>occur, adjust seeding rate</td>
<td>conventional herbicides/insecticides</td>
<td>conventional herbicides/insecticides</td>
</tr>
<tr>
<td></td>
<td>applications, Do not</td>
<td>accordingly</td>
<td>• Apply Quadris at</td>
<td>• Apply Quadris at</td>
</tr>
<tr>
<td></td>
<td>reduce rate</td>
<td>• Slight pressure: 6oz/A</td>
<td>midpoint between</td>
<td>midpoint between</td>
</tr>
<tr>
<td></td>
<td>• Applying in-furrow is</td>
<td>• Severe pressure: 9oz/A</td>
<td>micro-rates</td>
<td>micro-rates</td>
</tr>
<tr>
<td></td>
<td>risky</td>
<td>• Mix with water prior to</td>
<td>• Do not add deposition</td>
<td>• Do not add deposition</td>
</tr>
<tr>
<td></td>
<td></td>
<td>adding to starter</td>
<td>aids when mixing with</td>
<td>aids when mixing with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>fertilizer</td>
<td>glyphosate</td>
<td>glyphosate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Need good agitation</td>
<td>• Narrower bands are</td>
<td>• This is our least</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• May separate if left</td>
<td>most effective, do not</td>
<td>preferred method, but</td>
</tr>
<tr>
<td></td>
<td></td>
<td>more than 4 hours without</td>
<td>reduce rate</td>
<td>still beneficial</td>
</tr>
<tr>
<td></td>
<td></td>
<td>agitation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Apply with minimum of</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.5gal/A of carrier</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(see reverse side)
Aphanomyces
The disease ratings are general in nature and may not be representative of all fields in a township.
Aphanomyces

• Select a variety with a rating of 4.4 or less
  – 7 varieties currently for sale with a rating of 4.4 or less

• Use Tachigaren for early season symptoms
  – Provides 3 to 4 weeks of seedling protection

• RRV occurrences tend to be late season infections

• Improve soil structure
  – Surface drainage, tiling or lime application

• Lime application only known treatment to reduce Aphanomyces level in the soil
SIV values indicate reduced Aphanomyces levels eight consecutive seasons after a Lime application.

C. Windels J. Brantner A. Sims and C. Bradley  Univ. of MN, NWROC
### Hillsboro: Moderate Aph Disease 2011

C. Windels J. Brantner A. Sims and C. Bradley, Univ. of MN, NWROC

<table>
<thead>
<tr>
<th>Lime rate (T/A)</th>
<th>Stand (100 ft row)</th>
<th>Aph Yield RRR</th>
<th>Lb Rec sucrose/A</th>
<th>Gross revenue ($/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 WAP</td>
<td>Harvest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>175</td>
<td>146</td>
<td>3.4</td>
<td>15.5</td>
</tr>
<tr>
<td>5</td>
<td>175</td>
<td>151</td>
<td>2.9</td>
<td>18.1</td>
</tr>
<tr>
<td>10</td>
<td>198</td>
<td>182</td>
<td>2.3</td>
<td>18.0</td>
</tr>
<tr>
<td>20</td>
<td>191</td>
<td>171</td>
<td>2.6</td>
<td>17.5</td>
</tr>
<tr>
<td>30</td>
<td>182</td>
<td>165</td>
<td>2.6</td>
<td>19.8</td>
</tr>
<tr>
<td>Linear</td>
<td>NS</td>
<td>NS</td>
<td>*</td>
<td>**</td>
</tr>
</tbody>
</table>

**Aph root rot rating= 0-7 scale, 0= healthy, 7 = root completely rotted and foliage dead**

**Significant at \( P=0.05 \), ** = Significant at \( P=0.01 \), NS = Not significant

* One 10 ton Lime app. (8 years ago) increased tonnage 2.5 ton
2011 VersaLime Plots
Average of Three Sites in Drayton District

VersaLime: Yield +1.9  Sugar -0.3%  SLM 0%  RST -7.0  RSA +369

Gross $ /A + $56.08

<table>
<thead>
<tr>
<th></th>
<th>VersaLime Plot</th>
<th>No VersaLime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons</td>
<td>20.6</td>
<td>18.7</td>
</tr>
<tr>
<td>Sugar %</td>
<td>17.9</td>
<td>18.20</td>
</tr>
<tr>
<td>SLM</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Gross $/A</td>
<td>$1,185.52</td>
<td>$1,129.44</td>
</tr>
<tr>
<td>RSA</td>
<td>5683</td>
<td>5312</td>
</tr>
</tbody>
</table>
## Spent Lime Effects on Potato – 2011

UM Potato/Lime Research – Dr. Smith, NWROC

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Yield (Cwt/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 ton + 95 lb P2O5/A</td>
<td>439</td>
</tr>
<tr>
<td>5 ton + 95 lb P2O5/A</td>
<td>436</td>
</tr>
<tr>
<td>10 ton lime</td>
<td>434</td>
</tr>
<tr>
<td>Check + 95 lb P2O5/A</td>
<td>433</td>
</tr>
<tr>
<td>20 ton lime</td>
<td>431</td>
</tr>
<tr>
<td>5 ton lime</td>
<td>423</td>
</tr>
<tr>
<td>Check</td>
<td>390</td>
</tr>
<tr>
<td><strong>LSD (0.05)</strong></td>
<td><strong>24.55</strong></td>
</tr>
</tbody>
</table>

Planted: May 26, 2011  
Variety: Red Norland  
Fungicides: Echo 5x starting July 22 for blight control  
Harvested: September 16, 2011
Aphanomyces and VersaLime

• VersaLime improves soil structure allowing for better water movement in RRV soils

• VersaLime has no detrimental effects on other rotational crops
  – Improved yields seen on all crops

• The use of resistant varieties and VersaLime can help reduce disease and improve yield on sugar beets
Fusarium
2010 Disease Rating*
Fusarium

* The disease ratings are general in nature and may not be representative of all fields in a township.
Fusarium

- Likes wet, poorly structured soils
- Long lived in the soil
- Optimum soil temp above 75 F
- Can be confused with Verticillium Wilt
Fusarium Management With Disease Resistant Varieties

- **Disease root rating of 3.0 or less.**
  - **Crystal** - 658RR, 539RR, R761, R434
  - **Beta** - 89RR50, 89RR30, 1125R

- **Disease root rating between 3.0 and 4.0**
  - **Crystal** - 879RR, 093RR
  - **Beta** - 80RR52, 80RR32, 80RR12, 89RR31, 89RR83, 88RR41, 87RR38
Rhizomania

**RHIZOMANIA**
Identification – Detection

- Virus carried by a fungus
- Large number of small lateral roots
- Root may be small with dark veins or rot
- Leaves bright in color and extend upright
- The infection blocks water and nutrients uptake
2010 Rhizomania
“Blinkers”
Rhizomania Root Symptoms
Dual Technology

Crookston Severe rhizomania:
In 2011 VDH 519 Averaged $81/acre more than Dual Technology.

<table>
<thead>
<tr>
<th></th>
<th>Dual Technology</th>
<th>VDH 519</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acres</td>
<td>2,078</td>
<td>3,747</td>
</tr>
<tr>
<td>$/Acre</td>
<td>$1,467</td>
<td>$1,548</td>
</tr>
<tr>
<td>Yield</td>
<td>24.1</td>
<td>24.6</td>
</tr>
</tbody>
</table>
Dual Technology Varieties

- SESVanderhave – 48607TT, H48716TT, 48717TT, H48810TT, H36711RR, H36811RR, H36812RR, H36916RR
- Hilleshog – 4012RR, 4022RR, 4094RR
- BetaSeed – BTS 80RR32, BTS 89RR50, BTS80RR52, BTS 88RR41, BTS 89RR83, BTS 88RR83
- Crystal – 879RR, R761, 091RR, 093RR, 095RR
- Seedex – Deuce, UplanderRR, UsherRR, VictorRR
Cercospora Management
History of Tolerance/Resistance to Fungicides in the RRV

• Benlate, Mertec and Topsin M – 1981
  – Cercospora control with these products continues to be subpar as stand alone fungicides

• Triphenyltin Hydroxide (Tin products) – 1998
  – Tin products were not recommended after Eminent and other fungicides came to market
  – Tolerance to the Tin products has diminished

• Eminent – 2006 & 2010
  – Tolerance to Eminent in the Minn-Dak growing region flourished in 2006
  – After just one year out of the Minn-Dak market, tolerance subsided
  – Increased levels of tolerance were noticed in Moorhead district grower fields and research trials in 2010

• Headline – 2011
  – The Cercospora fungus has begun mutating and is, in some cases, fully resistant to Headline in areas of Michigan
Resistance Management

- Good resistance management starts with a rotation between classes of fungicides.
  - Never use fungicides from the same class of chemistry back-to-back.

- Tank mixing of various classes is a good resistance management tool

- Use sufficient water amounts (20 gal by ground and 5-7 gal by air)

<table>
<thead>
<tr>
<th>Strobilurins</th>
<th>Sterol Inhibitors (Triazoles)</th>
<th>EBDC</th>
<th>Benzimidazole</th>
<th>TPTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headline</td>
<td>Eminent</td>
<td>Penncozeb</td>
<td>Topsin M</td>
<td>Super Tin</td>
</tr>
<tr>
<td>Gem</td>
<td>Inspire XT</td>
<td>Manzate</td>
<td></td>
<td>AgriTin</td>
</tr>
<tr>
<td>Quadris</td>
<td>Proline</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cercospora Control and Resistance Management

• Tank mixes and rotation of fungicide classes are the best resistance management tools
<table>
<thead>
<tr>
<th>Treatment</th>
<th>RSA (lb/A)</th>
<th>KWS (1-9)</th>
<th>Gross Return ($/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspire XT + TPTH</td>
<td>10,670</td>
<td>3.1</td>
<td>$1,921</td>
</tr>
<tr>
<td>Inspire XT</td>
<td>9,625</td>
<td>4.6</td>
<td>$1,652</td>
</tr>
<tr>
<td>Combination Difference</td>
<td>1,045</td>
<td>1.5</td>
<td>$269</td>
</tr>
</tbody>
</table>
## NWROC Study – 2011
Courtesy Dr. Larry Smith

<table>
<thead>
<tr>
<th>Treatment</th>
<th>RSA (lb/A)</th>
<th>KWS (1-9)</th>
<th>Gross Return ($/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proline + Induce + TPTH</td>
<td>10,829</td>
<td>3.9</td>
<td>$1,966</td>
</tr>
<tr>
<td>Proline + Induce</td>
<td>9,536</td>
<td>5</td>
<td>$1,643</td>
</tr>
<tr>
<td>Combination Difference</td>
<td>1,293</td>
<td>1.1</td>
<td>$323</td>
</tr>
</tbody>
</table>
## NWROC Study – 2011
**Courtesy Dr. Larry Smith**

<table>
<thead>
<tr>
<th>Treatment</th>
<th>RSA (lb/A)</th>
<th>KWS (1-9)</th>
<th>Gross Return ($/A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eminent + TPTH</td>
<td>10,165</td>
<td>4.3</td>
<td>$1,748</td>
</tr>
<tr>
<td>Eminent</td>
<td>8,587</td>
<td>6.8</td>
<td>$1,465</td>
</tr>
<tr>
<td>Combination Difference</td>
<td>1,578</td>
<td>2.5</td>
<td>$283</td>
</tr>
</tbody>
</table>
Cercospora Control and Resistance Management

• Tank mixes and rotation of fungicide classes are the best resistance management tools

• Target a three spray program for best returns
## Fungicide Use and Profitability

### Number of Fungicide Applications - 5-Year Average (2007-2011)

<table>
<thead>
<tr>
<th>Number of Applications</th>
<th>Harvested Acres</th>
<th>Yield</th>
<th>Percent Sugar</th>
<th>Percent SLM</th>
<th>Recoverable Sugar per Ton</th>
<th>Recoverable Sugar per Acre</th>
<th>Revenue per Ton</th>
<th>Revenue per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>387,760.9</td>
<td>22.7</td>
<td>17.19</td>
<td>1.11</td>
<td>322</td>
<td>7,309</td>
<td>$ 54.01</td>
<td>$1,226.03</td>
</tr>
<tr>
<td>2</td>
<td>1,037,496.0</td>
<td>24.5</td>
<td>17.84</td>
<td>1.12</td>
<td>334</td>
<td>8,183</td>
<td>$ 57.58</td>
<td>$1,410.71</td>
</tr>
<tr>
<td>3</td>
<td>454,423.6</td>
<td>24.9</td>
<td>17.97</td>
<td>1.11</td>
<td>337</td>
<td>8,391</td>
<td>$ 58.47</td>
<td>$1,455.90</td>
</tr>
</tbody>
</table>

### Number of Fungicide Applications - Crop Year 2011 (Rep Fields)

<table>
<thead>
<tr>
<th>Number of Applications</th>
<th>Harvested Acres</th>
<th>Yield</th>
<th>Percent Sugar</th>
<th>Percent SLM</th>
<th>Recoverable Sugar per Ton</th>
<th>Recoverable Sugar per Acre</th>
<th>Revenue per Ton</th>
<th>Revenue per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>36,058.0</td>
<td>21.4</td>
<td>17.94</td>
<td>1.30</td>
<td>333</td>
<td>7,126</td>
<td>$ 58.05</td>
<td>$1,240.77</td>
</tr>
<tr>
<td>2</td>
<td>168,811.1</td>
<td>21.3</td>
<td>18.05</td>
<td>1.31</td>
<td>335</td>
<td>7,136</td>
<td>$ 58.85</td>
<td>$1,255.48</td>
</tr>
<tr>
<td>3</td>
<td>161,674.4</td>
<td>22.4</td>
<td>18.19</td>
<td>1.23</td>
<td>339</td>
<td>7,594</td>
<td>$ 60.30</td>
<td>$1,352.65</td>
</tr>
</tbody>
</table>
Recommendations

• Initiate your Cercospora Leaf Spot program when CLS has first been identified and confirmed in your area.

• The Ag staff will notify growers by text message, internet and/or post card when CLS is first identified in the district.
3-Spray Program

• 1st application in late July or early August
  – TPTH (Super Tin/Agritin) + Topsin

• 2nd application 14 days after initial application
  – TPTH + one of the triazoles (Inspire XT, Proline or Eminent)

• 3rd application in late August (usually after August 25th)
  – Headline
    • If you have Headline resistance in nearby fields from 2011
      Headline application should be tank mixed with TPTH or Mancozeb

• Tank mix partners should be no less then 75% of the stand alone, full rate recommendation
2-Spray Program

• Only consider a 2 spray option when weather conditions and/or growing conditions favor a later start

• 1\textsuperscript{st} application in mid-August
  – TPTH + triazole or
  – TPTH + Topsin (Cercospora tolerance to Topsin develops quickly, so triazole is preferred)

• 2\textsuperscript{nd} application in late August
  – Headline
    • If you have Headline resistance in nearby fields from 2011 Headline application should be tank mixed with TPTH or Mancozeb
1-Spray Program

• Not recommended

• If growers choose this option, then a tank mix is strongly encouraged

• Apply in late August
  – Headline (full rate) + TPTH or
  – Headline (full rate) + one of the triazoles
Sugarbeet Root Maggot Management
First Application Control Practices

- Counter is the recommended product to be used in heavy SBRM areas

<table>
<thead>
<tr>
<th>Insecticide</th>
<th>Recommended rates (product/ac) for expected population levels</th>
<th>Timing Options</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>Counter 20G RUP</td>
<td>4.5 lb</td>
<td>7.5 lb</td>
</tr>
<tr>
<td>Counter 15G RUP</td>
<td>5.9 lb</td>
<td>10.0 lb</td>
</tr>
<tr>
<td>PB, Cruiser, NipsIt</td>
<td>Seed Applied</td>
<td>*NR</td>
</tr>
<tr>
<td>Lorsban 15G RUP</td>
<td>6.7 lb</td>
<td>10.0 lb</td>
</tr>
<tr>
<td>Temik 15G RUP</td>
<td>6.7 lb</td>
<td>10.0 lb</td>
</tr>
</tbody>
</table>

RUP – Restricted Use Pesticide
*NR – Not Recommended without a 2nd application of an insecticide
Counter 20G Replacing 15G

- Same active ingredient as 15G formulation
- 20G is 75% of the 15G rate = less time re-filling planters

Conversion table for calibration:

<table>
<thead>
<tr>
<th>Target Rate lb (Al) / ac</th>
<th>OLD Counter 15G</th>
<th>NEW Counter 20G</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb. product/ac</td>
<td>oz. per 1000 row ft</td>
</tr>
<tr>
<td>0.9</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>1.05</td>
<td>7</td>
<td>4.7</td>
</tr>
<tr>
<td>1.2</td>
<td>8</td>
<td>5.4</td>
</tr>
<tr>
<td>1.5</td>
<td>10</td>
<td>6.7</td>
</tr>
<tr>
<td>1.8</td>
<td>11.9</td>
<td>8</td>
</tr>
</tbody>
</table>
Postemergence Maggot Control
Auburn, ND  2009

Check
Counter 10 lb
Poncho Beta
Counter 10 lb + Lorsban 4E 1 pt/ac
Poncho Beta + Lorsban 4E 1 pt/ac
Seed Treatments vs. Counter
Maggot Control - St. Thomas, ND  2007

Check

Counter 10 lb

Cruiser

NipsIt

Poncho Beta
SBRM Control
No Poncho, Cruiser or NipsIt

• Option 1 - Counter at planting followed by a post application of Thimet 10 to 14 days before peak fly

• Option 2 - Counter at planting followed by two 1 pint applications of Lorsban 4E
  – One app 4 days prior to peak fly and 1 app at peak fly

• Option 3 - Mustang at planting followed by post application of Thimet
  – Only if no insecticide boxes available on planter and no seed treatment used
SBRM Control
With Poncho, Cruiser or NipsIt

• Option 1 – Seed Treatment at planting followed by post application of Thimet 10 to 14 days before peak fly (best application in high pressure areas)
• Option 2 – Seed Treatment at planting followed by two 1 pint applications of Lorsban 4E
  – One app 4 days prior to peak fly and one app at peak fly
• Option 3 – Seed Treatment at plant followed by one 2 pint application of Lorsban 4E at peak fly
• Fly counts are posted on the ASCS Web Site
Root Maggot Risk* for 2012

2012

2011

*Based on fly counts & root damage ratings
Springtail Control

Surviving Plants (2006-2008)

Boetel, Dragseth and Schroeder, 2010, NDSU

![Image](image_url)

**Counter 15G Poncho Beta NipsIt Cruiser Control**

Plants / 100 ft

- a
- ab
- c
- bc
- bc
- d

6 lb 8 lb 68 g 60 g 60 g 6 lb

P = 0.05

Surviving Plants (2006-2008)
Springtail Control

**Sucrose Yield** (2006-2008)

Boetel, Dragseth and Schroeder, 2010, NDSU

![Graph showing sucrose yield comparisons for different treatments.](image_url)

- **Counter 15G**
  - 6 lb
  - 8 lb

- **Poncho Beta**
  - 68 g

- **NipsIt**
  - 60 g

- **Cruiser**
  - 60 g

- **Control**
  - 60 g

*P = 0.05*
Springtail Control

• No insecticide is labeled for springtail control in sugarbeet

• Springtail insect pressure continues to increase

• Counter has the most consistent control

• Poncho Beta, NipsIt and Cruiser provide fair control
Take Home Message

- **Rhizoctonia**
  - Select variety with score of < 3.82 and band apply Quadris at 4-6 leaf stage or 65° F soil temp
  - Err on the early side

- **Aphanomyces**
  - Select variety with score of < 4.4 and consider Versa Lime application

- **Rhizomania**
  - Use a dual technology variety

- **Fusarium**
  - Select variety with score of < 3.0
Take Home Message

• Cercospora
  – Tank mixing Fungicides will provide greatest return on your investment

• Root Maggots and Springtails
  – Counter at plant is your most reliable and cost effective choice
Questions