Approx 30% of acres need resistant varieties

Another 40% of acres (approx) have a substantial problem

About 30% of acres have very manageable Rhizococ problems
Rhizoctonia in Michigan

- *R. solani* AG 2-2 IIIB

- *R. solani* AG 2-2 IV

- Approx 50/50 mix in Michigan
Rhizoctonia in Michigan

- More tip rot than crown rot
- Crown rot used to be more prevalent
Crops Grown in Rotations with Sugarbeets in Michigan

- Corn
- Soybeans
- Wheat
- Wheat/Clover
- Dry Beans
- Pickles
Survey Results

% of Acres

<table>
<thead>
<tr>
<th></th>
<th>No Quadris</th>
<th>1 Quadris</th>
<th>2 Quadris</th>
<th>No Quadris</th>
<th>1 Quadris</th>
<th>2 Quadris</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sus Var</td>
<td>4.8</td>
<td>29.4</td>
<td>15.5</td>
<td>13.4</td>
<td>22.0</td>
<td>14.9</td>
</tr>
<tr>
<td>Tol Var</td>
<td>49.7%</td>
<td>50.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

49.7% → 50.3%
High Potential for Yield Losses In Michigan From Rhizoctonia

Grower shut off in-furrow Quadris for a check strip
Yield Losses Due to Rhizoctonia
2009 and 2010 Research Trials

Small Plot Trials (Michigan Sugar)
- 4 Tons/A in Untreated Plots
- 1-2 Tons/A with avg. Treatment
- \( \frac{1}{2} \) to 1 point of sugar

Moderate Disease Levels
(30 dead beets/100 ft)
Yield Losses Due to Rhizoctonia
2009 and 2010 Research Trials

Sugarbeet Advancement Strip Trials
- 4-5 Tons/A in Untreated
- 2 Tons/A with avg Trt
- 20 RWST

Moderate Disease Levels
Yield Losses Due to Rhizoctonia

- Sugarbeet Advancement Strip Trials
  - Up to 10 Tons/A in Untreated

- High Disease Levels
Varieties Grown in Michigan
About a 50/50 Mix

<table>
<thead>
<tr>
<th>% of Check</th>
<th>High Yield/Quality Rhizoc Susc</th>
<th>Approved/Fair to Good Rhizoc Tolerance</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>RWSA</td>
<td>RWST</td>
</tr>
<tr>
<td>105</td>
<td></td>
<td>RWST</td>
</tr>
<tr>
<td>100</td>
<td></td>
<td>RWSA</td>
</tr>
<tr>
<td>95</td>
<td></td>
<td>RWST</td>
</tr>
<tr>
<td>90</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Rhizoctonia Varietal Differences

- Tolerant
- Moderately Susceptible
- Highly Susceptible
Nematode Tolerant Varieties

- 25% of acres with nematode problems
- Nematode varieties have poor Rhizoctonia tolerance
Fungicide Recommendations

- Quadris
  - Post emergence foliar application
  - In-furrow at planting
# Quadris Foliar Application Rates

## 7 inch band

<table>
<thead>
<tr>
<th>Row Spacings</th>
<th>30&quot;</th>
<th>28&quot;</th>
<th>24&quot;</th>
<th>22&quot;</th>
<th>20&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rows</td>
<td>10.5</td>
<td>11.2</td>
<td>13.1</td>
<td>14.3</td>
<td>15.8</td>
</tr>
</tbody>
</table>

Do Not Cut Rates
Quadris Foliar
Recommendations

- 7 inch band
- Do not broadcast
- 4-8 leaf size
- EC’s and oils can cause injury
Quadris In-Furrow Recommendations

Quadris
- In-furrow T-band
  • Has provided best yield increases
  • Minor stand reductions can occur (5% avg)
### In-Furrow, T-band, Rates of Quadris, fl oz/acre

<table>
<thead>
<tr>
<th>Band Width</th>
<th>30 Inch</th>
<th>28 inch</th>
<th>24 inch</th>
<th>22 inch</th>
<th>20 inch</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 inch</td>
<td>10.5</td>
<td>11.2</td>
<td>13.1</td>
<td>14.3</td>
<td>15.8</td>
</tr>
<tr>
<td>6 inch</td>
<td>9.0</td>
<td>9.6</td>
<td>11.3</td>
<td>12.3</td>
<td>13.5</td>
</tr>
<tr>
<td>5 inch</td>
<td>7.5</td>
<td>8.0</td>
<td>9.4</td>
<td>10.2</td>
<td>11.3</td>
</tr>
<tr>
<td>4 inch</td>
<td>6.0</td>
<td>6.4</td>
<td>7.5</td>
<td>8.1</td>
<td>9.0</td>
</tr>
<tr>
<td>3 1/2 inch or less</td>
<td>5.3</td>
<td>5.6</td>
<td>6.6</td>
<td>7.2</td>
<td>7.9</td>
</tr>
</tbody>
</table>
In-Furrow Recommendations

- T-band only, between seed drop and row closing
- Do not mix with fertilizer
- Do not dribble in-furrow
In-Furrow Recommendations

- Not less than 20 psi
- 5–10 gallons/acre
- Tip not less than “015” for volume
- 50 mesh screen
Quadris In-Furrow
Narrowing Band Width

- Narrow T-band
  - 3.5 inches

- Lower proportionate rate
  - Down to $\frac{1}{2}$ rate
2 Quadris Applications

- Moderate Rhizoc – Susceptible Variety
- High Rhizoc – Tolerant Variety
- Combination of in-furrow and foliar
Plans to Manage Rhizoctonia with Susceptible Varieties

Field Selection is Critical

25-30% of area not suitable for highly susceptible varieties
Managing Rhizoctonia with Susceptible Varieties

Required to Apply Quadris

- 1 or 2 applications depending upon situation
Questions?
This chart does not include the 2010 Meylan Trial due to a lower stand for the in furrow treatments.
AVERAGES OF 2009 & 2010 Tonnage (4 Trials)

This chart does not include the 2010 Meylan Trial due to a lower stand for the in furrow treatments.
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Both Quadris Treatments were on 6/8/10 (10-14 Leaf). Dead beets were starting to be found in these fields.
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