Variety Approval Forum
Michigan Sugar

ASSBT – 2011

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Michigan Sugar Company
Major Goal of Michigan Sugar is to Improve Sugarbeet Quality

- Increase sugar from 18 to 19 percent by 2015
- “The Road to 19”
Variety Mix in Michigan
% of Check

- High Yield/Quality
- Poor Disease
- Minority of Acres

- Approved/Good
- Disease Tolerance
- Majority of Acres

- RWSA
- RWST

- 110
- 105
- 100
- 95
- 90
Cercospora Varietal Differences

- Tolerant Variety
- Moderately Susceptible
- Highly Susceptible
Rhizoctonia Varietal Differences

Tolerant

Moderately Susceptible

Highly Susceptible
Nematode Tolerant Varieties

- 25% of acres with nematode problems
- Varieties don’t pass approval
New Approval System

- Quality (3X premium)
- Cercospora level relaxed
## Compare Approval Systems

<table>
<thead>
<tr>
<th>Old System</th>
<th>New System</th>
</tr>
</thead>
<tbody>
<tr>
<td>♦ RWSA</td>
<td>♦ RWSA</td>
</tr>
<tr>
<td>♦ RWST</td>
<td>♦ RWST</td>
</tr>
<tr>
<td>♦ Cercospora</td>
<td>♦ Cercospora</td>
</tr>
<tr>
<td></td>
<td>♦ Rhizoctonia</td>
</tr>
<tr>
<td></td>
<td>♦ Root Aphid</td>
</tr>
<tr>
<td></td>
<td>♦ Rhizomania</td>
</tr>
<tr>
<td></td>
<td>♦ Emergence</td>
</tr>
</tbody>
</table>
## Comparing Approval Levels

### Old vs New “Points” System

<table>
<thead>
<tr>
<th>Year</th>
<th>RWSA</th>
<th>RWST</th>
<th>Cerc</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>99.4</td>
<td>99.7</td>
<td>113.7</td>
<td>na</td>
</tr>
<tr>
<td>2010</td>
<td>105.0</td>
<td>101.0</td>
<td>140.0</td>
<td>105</td>
</tr>
<tr>
<td>2015</td>
<td>110.0</td>
<td>104.0</td>
<td>125.0</td>
<td>105</td>
</tr>
</tbody>
</table>

All Values % of Check
How “Points” System Works

Starting Point is RWSA

• RWSA for variety (X) is 113.9 % of check

• Points = 113.9
How “Points” System Works

RWST level for variety (X) is 109.7 % of check

- Variance from 100 = 9.7 \times 3
- Points = 29.1
How “Points” System Works

Variety (X) Cercospora level is 124.1 % of check (-18 to 10 points range)

- From conversion table
  124.1 = -18 points
How “Points” System Works

Variety (X) Rhizoctonia level is 109.3% of check (0 to 10 points range)

- From conversion table
  109.3 = 2 points
How “Points” System Works

Variety (X) Rhizomania level is 5.0 (0 to 3 points range)

♦ From conversion table
5.0 = 2 points
How “Points” System Works

Variety (X) Root Aphid level is 2.1 (0 to 5 points range)

♦ From conversion table
2.1 = 3 points
How “Points” System Works

Variety (X) emergence level is 63.1 % of check (-5 to 5 points range)

✦ From conversion table
  63.1 = 0 points
### How “Points” System Works

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RWSA:</td>
<td>109.7</td>
<td></td>
</tr>
<tr>
<td>RWST:</td>
<td>29.1</td>
<td></td>
</tr>
<tr>
<td>Cercospora:</td>
<td>-18</td>
<td>very high yield</td>
</tr>
<tr>
<td>Rhizoctonia:</td>
<td>2</td>
<td>very high quality</td>
</tr>
<tr>
<td>Rhizomania:</td>
<td>2</td>
<td>poor disease</td>
</tr>
<tr>
<td>Root Aphid:</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Emergence:</td>
<td>0</td>
<td>need 105%</td>
</tr>
</tbody>
</table>

**Total:** 127.8 = 120.2 % of check
## How “Points” System Works

<table>
<thead>
<tr>
<th>Metric</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>RWSA:</td>
<td>95.2</td>
</tr>
<tr>
<td>RWST:</td>
<td>9.8</td>
</tr>
<tr>
<td>Cercospora:</td>
<td>7</td>
</tr>
<tr>
<td>Rhizoctonia:</td>
<td>6</td>
</tr>
<tr>
<td>Rhizomania:</td>
<td>2</td>
</tr>
<tr>
<td>Root Aphid:</td>
<td>3</td>
</tr>
<tr>
<td>Emergence:</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>124.0 = 114.6 % of</strong></td>
</tr>
</tbody>
</table>

**Variety Y**
- moderate yield, medium to high quality, good disease
- need 105 %
research and grower experience has shown that diseases can be controlled
Plans to Manage Cercospora with Susceptible Varieties

Required Spray Dates

- Red Zone: 45/45/45
- Green Zone: 65 or 1st spot / 55
BeetCast Risk Management Zones
Plans to Manage Rhizoctonia with Susceptible Varieties

Field Selection is Critical

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

Required to Apply Quadris

- 1 or 2 applications depending upon situation
Summary

♦ Goal to increase sugar content by 1 percentage point by 2015

“The Road to 19”
Summary

♦ New Approval System will allow approval of higher quality varieties

♦ Will increase income to growers and the Coop
Summary

Must manage diseases

- Cercospora
- Rhizoctonia