SUGARBEET ROOT MAGGOT

- Large yield increases from all seed treatment insecticides compared to checks
- **Counter** had better *protection* and *yield* than any seed treatment in mod-high infestations
- Seed treatments should not be used as a stand alone in mod-high infestations
- Use aggressive post emerge treatments
  - New 10 day app. interval for all Lorsban products
  - Recommend Lorsban @ 2pts/A
2013 Root Maggot Risk*

High risk:
Crystal Reynolds St. Thomas Thompson

Moderate risk:
Ada Borup Euclid Forest River Grand Forks Minto Nash

Low
Moderate
High

*Based on fly counts & root maggot feeding injury ratings
LEAF HOPPERS

• Observed in beet fields May 2012
• Migrated from wheat fields
• Identified as Aster Leaf Hopper, not Beet Leaf Hopper which vectors Curly Top virus
• Studies have shown seed treatments provide up to 60 days protection from Beet Leaf Hopper
• May suggest some protection from Aster Leaf Hopper also
• No economic threshold is established
• Lorsban @ 1pt/A does provide control
SPIDER MITES

• Most damage occurs in outer 8 – 12 rows
• Hot weather don’t use pyrethroids
  – Asana, Mustang, Warrior, etc.
  – Kills beneficial predators causing mite flare-ups
• Chlorpyrifos products work well
  – Lorsban 4E, Lorsban Advanced, or a generic
• Ring field with 1 pt. of one of the above
• Be aware Lorsban & generics 30 day PHI
Root Aphids

- Overwinter as eggs on primary hosts
  - Narrow leaf cottonwood
  - Black cottonwood
  - Balsam poplar
  - Lambsquarter
- Spring egg hatch = females
- In leaf gall female asexually produces young that develop into winged adults
Root Aphids

• Winged adults migrate to beets in early to mid-summer
• All females – 7 generations possible
• Yellowish – white aphids
• Secrete a white waxy mold like substance called “frass”
• Late August-Sept. migrate back to trees
• Some can overwinter in the soil
Root Aphids

Adults feeding on secondary roots
Damage

• Feed on secondary roots
• Interfere with water and nutrient uptake
• Greatest damage with drought
• Leaf yellowing, wilting, death
Rhizoctonia
Or
Root Aphids?
Yield Losses

• 20-40 % in tonnage
• Very severe sugar losses
  – 50% or more
• Severe storage losses
• Greatest loses on heavy soils
• Infected areas freeze easily
## 2012 Root Aphid / Storage

Neilsville Minnesota

<table>
<thead>
<tr>
<th>DAH – Days After Harvest</th>
<th>Minimal Aphid Damage</th>
<th>Extensive Aphid Damage</th>
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</thead>
<tbody>
<tr>
<td>30</td>
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<tr>
<td>Sucrose, %</td>
<td>15.5</td>
<td>6.1</td>
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<tr>
<td>Purity, %</td>
<td>92.2</td>
<td>71.8</td>
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<tr>
<td>Extractable Sugar / Ton</td>
<td>261</td>
<td>60</td>
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<tr>
<td>Root Weight, G/Root</td>
<td>568</td>
<td>280</td>
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<tr>
<td>Respiration, mg CO2/kg Roots/Hour</td>
<td>4.76</td>
<td>13.87</td>
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</tbody>
</table>

Larry Campbell, USDA
Management Practices

• No registered insecticides
• Counter may give suppression
• Reduce drought stress
  – Field selection
  – Irrigation
• Harvest early – possible prepile
• Resistant varieties – single gene
  – Use near cottonwoods, poplar trees, near 2012 fields with problems
## Resistant/Tolerant Varieties

### High Tolerance
- Crystal 765
- Crystal 768
- Crystal 878
- Crystal 093
- Crystal 101
- Beta 89RR83
- Beta 80RR32
- Beta 89RR10
- Beta 81RR78
- Beta 81RR12
- Beta 81RR41

### Moderate Tolerance
- Crystal 986
- Crystal 095
- Beta 81RR52
- Beta 81RR17
- Beta 81RR50
- Beta 81RR30
- Beta 81RR40
Questions
?
?
## Resistant/Tolerant Varieties

<table>
<thead>
<tr>
<th>Variety</th>
<th>Tolerance Level</th>
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<tbody>
<tr>
<td>SVDH</td>
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<tr>
<td>Hilleshög</td>
<td>None Available</td>
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<tr>
<td>Beta 89RR83</td>
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<tr>
<td>Crystal 658</td>
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<tr>
<td>Crystal 765</td>
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<tr>
<td>Crystal 768</td>
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