Black Stem Borer - A New Pest in Apples

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Grower sent this picture on May 1, ‘13 Fuji/M9(Pajam 2) in 4th leaf.
Found in 6 sites in 2013 associated with fire blight. Which came first? Fire blight or borers?
A second site 90 miles away in 2013.
Also found in apple nurseries, commercial and on-farm.
Xylosandrus germanus - black stem borer


Keyed out by Dan Gilrein
Growers complained of trees dying or oozing from holes or fire blight from oozing rootstocks with no history of FB in the planting.

Issued an APB at winter and spring meetings

Identified >25 sites with trees dying 2014.

1 to 15 year old plantings.
Adult female drills a hole \( \sim 1 \text{mm} \) in diameter, and hollows out a channel into the heartwood of small trees (2-50 cm diameter).
Gallery with eggs, larvae and pupae for first generation BSB

Liz Tee 2013
Toothpick frass after calm, rainfree days.

Symptoms include blistering of bark.
Sometimes just oozing sap or FB ooze from hole
Trapping BSB

- **RE: Peter Schultz**
- Inverted “Simply” traps with rectangular openings cut in side panels
- Agbio: agbio@agbio-inc.com ethanol lures
- Hung 2-3 feet off the ground
- A drop of low toxicity anti-freeze in lid
- Hung on edge of woods next to orchard.
- Hung in interior of orchard.
- Checked traps weekly
BSB weekly trap catch-2014.

**Edge BSB trap**

- Bates Rd
- Hill
- R1H
- N 13
- S14
- C13

**Interior BSB trap**

- Bates Rd
- Hill
- R1H
- N 13
- S14
- W31
- SF4
- C13
What we learned in 2014.

- First activity noted in WNY on April 24 after a few warm days over 68 F.
- Higher counts in traps along edges than interiors.
- Peak on Jun 11 for emerging from overwintering sites to new holes.
- 1st generation adults emerged July 9-23
- 2nd generation adults emerged Aug 20 but continued to be active through September 16.
Insecticide trials – May 5

- Lorsban Advanced @ 1.5 qt/100, 49.7 ml/3.5 gallon
- Danitol @16 oz./100, 16.6 ml/3.5 gallons
- Cobalt Advanced @1.3 qt/100, 43 ml/3.5 gallons
- Applied to drip with mist blower sprayer.

<table>
<thead>
<tr>
<th>% Trees</th>
<th>Active BSB</th>
<th>TRT</th>
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<tbody>
<tr>
<td>6%</td>
<td>Danitol</td>
<td>STD</td>
</tr>
<tr>
<td>3%</td>
<td>Cobalt</td>
<td></td>
</tr>
<tr>
<td>1%</td>
<td>Lorsban</td>
<td></td>
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<tr>
<td>5%</td>
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But how healthy is this tree now?
More questions than answers!

- Controls ???
  - Is it spray coverage
  - Will biological controls kill beetles or symbiotic fungus.
  - Is it necessary to destroy infested trees? Many have lost 30% of trees.
  - Not all trees die. Is it dependent on the fungus?
  - How to evaluate controls?