



Black Stem Borer – A New Pest in Apples

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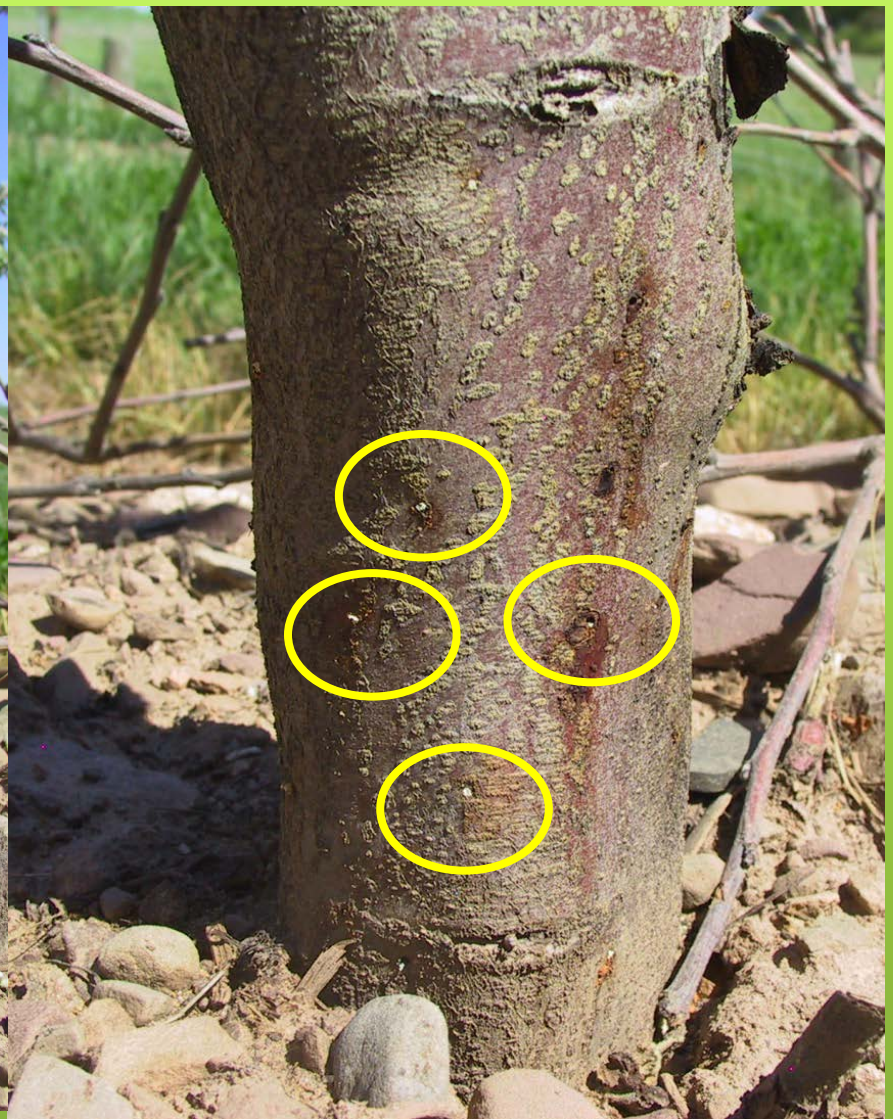
Kerik Cox – Cornell

Elizabeth Tee – CCE-LOF

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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.



UGA5209019

Keyed out by Dan
Gilrein

Xylosandrus germanus – black stem borer



0.5mm

UGA2104005

J.R. Baker & S.B. Bambara, North Carolina State
University, Bugwood.org - See more at:
[http://www.forestryimages.org/browse/detail.cfm?i
mgnum=5159039#sthash.CkGlyPun.dpuf](http://www.forestryimages.org/browse/detail.cfm?imgnum=5159039#sthash.CkGlyPun.dpuf)

History

- 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 ~1mm in diameter, and hollows out a channel into the heartwood of small trees (2-50 cm diameter) .



Liz Tee 2013

Gallery with eggs, larvae and pupae for first generation BSB



Liz Tee 2013

Monitoring



- **Toothpick frass after calm, rainfree days.**
- **Symptoms include blistering of bark**

Monitoring

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





What we learned in 2014.

- First activity noted in WNY on April 24 after a few warm days over 68 F.
- No activity again until May 13. Temperatures did not exceed 65 F between 4/22-5/8.
- 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.

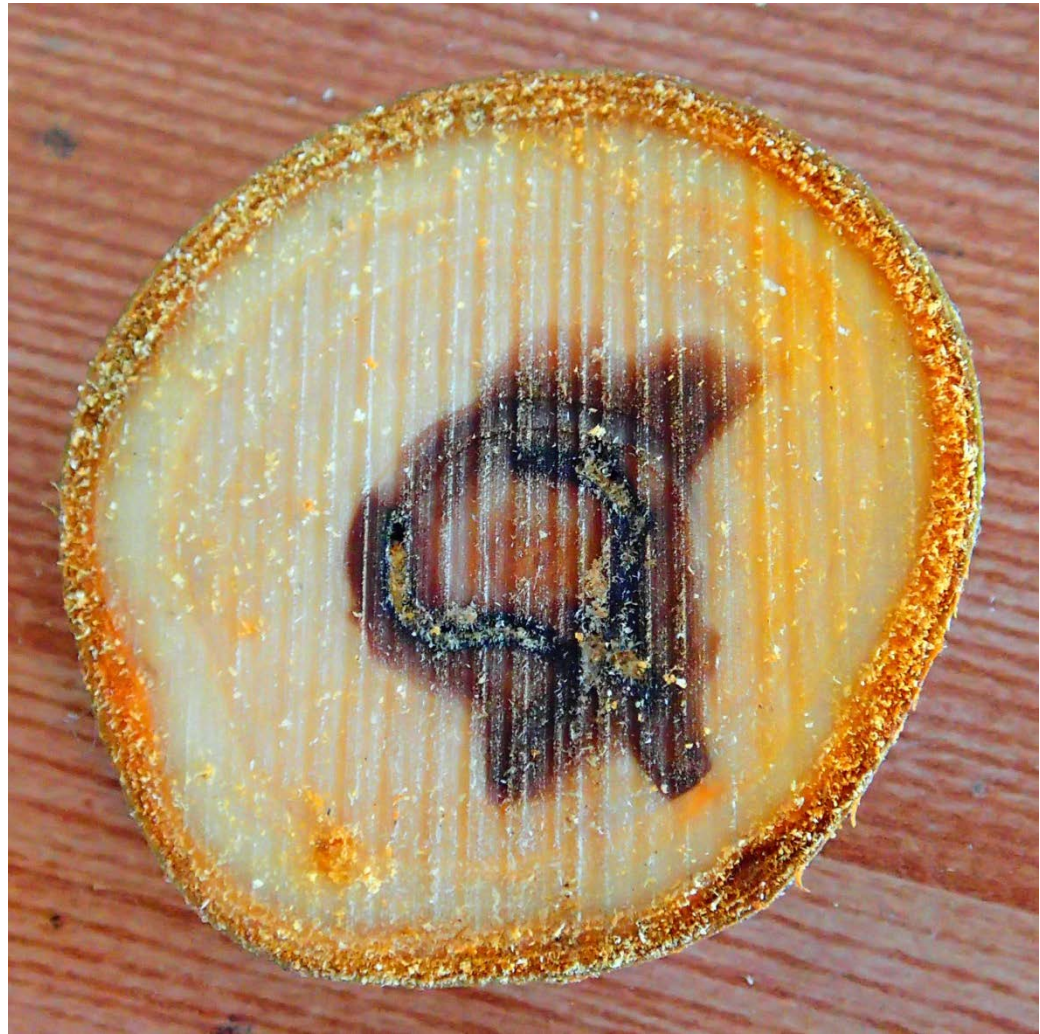
Insecticide trials – May 5

- 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.



% Trees Active BSB	TRT
6%	Danitol
3%	Cobalt
1%	Lorsban
5%	STD

Good News! ?



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?