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Update on Pest Management and Crop Development

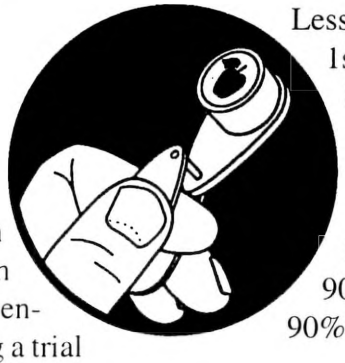
FRUIT JOURNAL

May 20, 2002 VOLUME 11, No. 10 Geneva, NY

INSECTS

ON THE SCREEN

ORCHARD RADAR DIGEST



❖❖ Based on the assumption that more information is better than less when it comes to assessing potential pest occurrence, we're initiating a trial effort to use some of the pest predictions generated by the Univ. of Maine's Orchard Radar model estimation service, provided to us by Glen Koehler for the Geneva and Highland sites. This pest management tool uses commercially available weather data as an input for apple pest occurrence and development models taken from many established university and practitioner sources, and we thought it might be useful to provide another perspective on what's happening in the orchard to compare against our own record-generated advisories and, of course, personal observations from the field. For starters, we'll be printing just some of the short-term arthropod events; the full Orchard Radar product range covers disease and horticultural events as well. Growers interested in exploring this service for their specific site may wish to contact Glen personally (gkoehler@umext.maine.edu).

Geneva Predictions:

Roundheaded Appletree Borer

RAB adult emergence begins: May 31; Peak emergence: June 14.

RAB egglaying begins: June 09. Peak egglaying period roughly: June 29 to July 13.

Codling Moth

Codling moth development as of May 19: 1st generation adult emergence at 1% and 1st generation egg hatch at 0%

Lesser Appleworm

1st LAW flight, first trap catch: May 06; Peak trap catch: May 24

Mullein Plant Bug

The most accurate time for limb tapping counts, but possibly after MPB damage has occurred, is when 90% of eggs have hatched.

90% egg hatch date: May 27.

Obliquebanded Leafroller

1st generation OBLR flight, first trap catch: June 14.

Oriental Fruit Moth

Optimum 1st generation - first treatment date, if needed: May 24.

Optimum 1st generation - second treatment date, if needed: June 05.

continued...

IN THIS ISSUE...

San Jose Scale
1st generation SJS crawlers appear: June 21.

Spotted Tentiform Leafminer
1st generation sapfeeding mines start showing: May 14.
Optimum sample date is around Friday, May 24, when a larger portion of the mines have become detectable.

White Apple Leafhopper
1st generation WAL found on apple foliage: May 10.

Highland Predictions:
Roundheaded Appletree Borer
RAB adult emergence begins: May 25; Peak emergence: June 09.
RAB egglaying begins: June 04. Peak egglaying period roughly: June 24 to July 08.

Codling Moth
Codling moth development as of May 19:
1st generation adult emergence at 7% and 1st generation egg hatch at 0%
Key codling moth managment dates:
1st generation 3% CM egg hatch: June 05 (= first spray date where two sprays needed to control 1st generation codling moth, 2nd spray is 2-3 weeks later)

Lesser Appleworm
1st LAW flight, first trap catch: April 19; Peak trap catch: May 15

Mullein Plant Bug
The most accurate time for limb tapping counts, but possibly after MPB damage has occurred, is when 90% of eggs have hatched. 90% egg hatch date: May 15.

Obliquebanded Leafroller
1st generation OBLR flight, first trap catch: June 08.

Oriental Fruit Moth
Optimum 1st generation - first treatment date, if needed: May 12;
Optimum 1st generation - second treatment date, if needed: May 29.

San Jose Scale
1st generation SJS crawlers appear: June 15.

Spotted Tentiform Leafminer
1st generation sapfeeding mines start showing: May 07.
Optimum sample date is around Wednesday, May 15, when a larger portion of the mines have become detectable.

White Apple Leafhopper
1st generation WAL found on apple foliage: May 05.

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LOVE IS BLIND

BEWILDERED BORERS

(Art Agnello, Entomology, Geneva)

❖❖ In New York, there are two species of sesiid (clearwing) moths that attack peaches — the peachtree borer (PTB), *Synanthedon exitiosa*, and the lesser peachtree borer (LPTB), *Synanthedon pictipes*. The adult borers are striking clear-winged moths with yellow and steel-blue body markings. The adults of these insects have from one to four yellow-orange stripes across the abdomen, depending upon species and sex. The PTB enters the tree near soil level and does not require the presence of wounds or breaks in the bark for entry, but the LPTB nearly always enters the tree at a pruning scar, canker, mechanical injury, or winter-injured area. Both species pass the winter as borers inside the tree, and in the spring emerge as moths that lay eggs on or in the trunk during the summer. In New York, the LPTB moth emerges first, in late May, and the PTB doesn't show up until mid-June; both stay active (laying eggs) through August. When the borer eggs hatch, the PTB tends to crawl down the tree to soil level and burrow in there, but the LPTB will move to the nearest injured area, which may be on the lower trunk or just as easily up in the scaffold limbs. LPTB completes its development in one year, but some PTB larvae take two years to develop, so any control measure a grower would elect will require repeating for at least 2–3 years.

Injury is caused by larval feeding on the cambium and inner bark of the trunk close to the soil level (PTB) or on the upper trunk and lower scaffold branches (LPTB). Occasionally, larger roots are also attacked by PTB. Areas attacked often have masses of gum, mixed with frass, exuding from the bark. All ages of trees are injured. Young trees are at times completely girdled and subsequently die. Older trees are often so severely injured that their vitality is lowered and they are rendered especially susceptible to attack by other insects or by diseases. Although both species may be found in infested trees, younger plantings and those not afflicted by extensive cankers or other bark splits are attacked primarily by PTB. Control is difficult, owing to the concealed habit of the larvae, and most growers must rely on one or more coarse insecticide sprays of the trunks and lower scaffold branches to deter egg laying and kill newly established larvae. Because this is a labor-intensive measure that often fails to completely control these pests, many growers choose not to elect treatment, or else do an incomplete job, with the intention of getting what they can out of a planting until infestations combine with other peach production factors to warrant tree removal. This approach has been common in the recent past, during which there has been little demand for New York stone fruits outside of local farmstand markets. However, with a recent increase in the planting of new peach varieties and short-range distribution to other markets, there is now more interest in examining currently available pheromone disruption tools for the control of these perennial pests.

During the past two seasons, the effectiveness of three different treatments were compared in the control of infestations and damage by peachtree borer (PTB) and lesser peachtree borer (LPTB) in commercial peach orchards: (1) Isomate-L pheromone disruption dispensers combined with directed trunk insecticide applications; (2) Isomate-L pheromone disruption dispensers only; (3) directed trunk insecticide applications only. Pheromone dispensers were placed in blocks (2–3 acres) of peaches on two farms in Wayne Co., and insecticide treatments were applied to single-tree plots in each block. These insecticide sprays were also applied to comparable trees in another planting at each farm not containing the pheromone dispensers. The effectiveness of the different treatments was evaluated by comparing adult male trap catches in pheromone traps in each block, postharvest excavating around the trunks to search for borers and damage in the fall, and enclosing infested cankers with sleeve cages to assess adult emergence at the end of the season. Pheromone trap catches of both borer species were

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completely supressed by the pheromone dispensers in the disrupted plots. Fall 2000 trunk inspection revealed no damage attributable to PTB infestation in either the test trees or the untreated checks. In 2001, very low levels of damage were found in all plots, but there were no treatment differences. On unsprayed trees caged during 2001, higher numbers of LPTB exuviae were found in non-disrupted peach blocks than in blocks treated with pheromones.

After two seasons of these trials, there is sufficient evidence to determine that pheromone disruption alone is able to provide adequate protection from borer infestations in commercial orchards, and the recent labeling of this product in New York will give growers an effective non-chemical alternative to trunk sprays for managing this pest complex in their stone fruit plantings. During a "normal" season, the LPTB moths will begin flying about this time of May in the eastern parts of the state, and near the end of May to early June in western NY. Stone fruit growers wishing to use this method of borer control should consider placing the Isomate-L ties in their trees (1/tree should prevent infestations of both species) during the next 1–2 weeks.❖❖

BOOK MARKET

RECOMMENDED READING
(Art Agnello, Entomology, Geneva)

❖❖ We have finished formatting the Tree Fruit Pest Management Guidelines (aka the "Recommends") online version, so that the site's address, http://www.nysaes.cornell.edu/ent/treefruit, takes users to a main table of contents page that now lists each chapter or main section of the publication, and allows viewing of the content in either pdf or html web format. The latter option employs many links to enable quick navigation around the book, as well as to sites where many online fruit resources reside, including those of other states as well as NY. Pesticide product labels are also accessible, as provided by the CDMS (Crop Data Mgt Systems) webpage. Sincere appreciation is due to Rob Way, the Geneva Station's web programmer, for his extensive efforts in completing this large project so quickly.❖❖

GENERAL INFO

PEST FOCUS

Geneva:
1st **American plum borer** moth caught.

After beginning the season well ahead of last year, and the 10-year average, degree-day accumulation is now behind on both counts. As predicted, insect development lags tree development.

Highland: **Pear psylla** hardshells and adults present and 2nd generation eggs being laid on leaves.

PHENOLOGIES

Geneva:
Apple (McIntosh): Fruit set
Apple (Red Delicious): Petal fall
Apple (Empire): 90% petal fall
Pear (Bartlett): Fruit set
Peach: Shuck split
Tart cherry (Montmorency): Petal fall

INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

	5/9	5/13	5/20
Redbanded leafroller	4.2	1.3	0.3
Spotted tentiform leafminer	89.7	13.8	11.0
Oriental fruit moth	49.5	7.6	6.3
Lesser appleworm	51.3	5.6	17.7
Codling moth	0.0	0.0	0.0
San Jose scale	0.0	0.0	0.0
American plum borer	–	0.0	0.1*
Lesser peachtree borer	–	0.0	0.0

Highland, NY

	5/13	5/20
Redbanded leafroller	3.7	0.0
Spotted tentiform leafminer	4.4	1.6
Oriental fruit moth	4.5	1.2
Codling moth	0.4	0.1
Lesser appleworm	0.6*	2.2
Tufted apple budmoth	0.0	0.0
Variegated leafroller	0.0	0.0
Obliquebanded leafroller	–	0.0

* first catch

UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1–5/20):	487	251
(Geneva 1/1-5/20/2001):	543	320
(Geneva "Normal"):	502	260
(Highland 1/1–5/20):	738	401

Coming Events:	**Ranges:**	
San Jose scale 1st catch	189–704	69–385
Spotted tentiform leafminer sap-feeders present	295–628	130–325
Codling moth 1st catch	273–805	141–491
Mirid bugs 90% hatch	502–668	236–352
European red mite summer eggs present	448–559	235–320
Lesser appleworm 1st flight peak	372–851	181–483
Lesser peachtree borer 1st catch	224–946	110–553
Plum curculio oviposition scars present	448–670	232–348
Pear psylla hardshell present	463–651	259–377
Tart cherry at fruit set	464–648	262–339

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NOTE: Every effort has been made to provide correct, complete and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are possible. These recommendations are not a substitute for pesticide labelling. Please read the label before applying any pesticide.

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