

# scaffolds

Update on Pest Management  
and Crop Development

F R U I T J O U R N A L

May 28, 2013

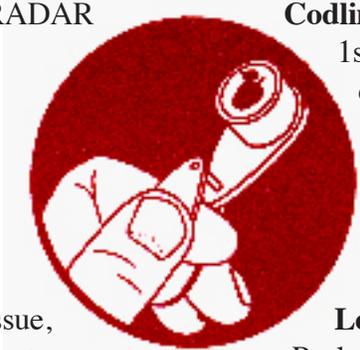
VOLUME 22, No. 10

Geneva, NY

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HEADS  
UP

ORCHARD RADAR  
DIGEST



**Codling Moth**

1st generation, first sustained trap catch biofix date: May 18.

Codling moth development as of May 28: 1st generation adult emergence at 15% and 1st generation egg hatch at 0%.

**Lesser Appleworm**

Peak LAW trap catch: May 21.

**Obliquebanded Leafroller**

1st generation OBLR flight, first trap catch expected: June 6.

**Oriental Fruit Moth**

1st generation 55% egg hatch and first treatment date, if needed: May 27.

❖❖ Beginning with today's issue, we will once again be publishing pest predictions generated by the Univ. of Maine's Orchard Radar model estimation service, provided to us by Glen Koehler. 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. It's offered as 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. We'll be printing only some of the short-term arthropod events; the full Orchard Radar product range covers disease and horticultural events as well. The public New England sites available for anyone to use are located at: <http://pronewengland.org/AllModels/DecisionModels.htm>. Growers interested in exploring this service for their specific site may wish to contact Glen personally ([glen.koehler@maine.edu](mailto:glen.koehler@maine.edu)).

Geneva Predictions:

**Roundheaded Appletree Borer**

RAB egg laying begins: June 2. Peak egg laying period roughly: June 24 to July 9.

**Dogwood Borer**

First DWB egg hatch roughly: June 23.

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### PEST FOCUS

### INSECT TRAP CATCHES

### UPCOMING PEST EVENTS

**San Jose Scale**

First adult SJS caught on trap: May 20.

1st generation SJS crawlers appear: June 17.

**Spotted Tentiform Leafminer**

1st generation sapfeeding mines start showing: May 22.

Optimum sample date is around May 23, when a larger portion of the mines have become detectable.



IT'S  
CLEAR

'TIS THE SESII-SON

(Art Agnello, Entomology, Geneva; ama4@cornell.edu)

❖❖ In NY, there are two species of sesiid (clearwing) moths that attack peaches — the peachtree borer (PTB), *Synanthedon exitiosa*, and the lesser peachtree borer (LPTB), *S. 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. The LPTB additionally attacks cherries, causing the same type of injury in the upper trunk and scaffold branches of these trees. 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. The LPTB moth emerges first, normally in late May, (we caught our first of this season in Geneva on May 20), and the PTB doesn't show up normally until mid-June; both stay active (laying eggs) through August. When the borer stages 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.

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**scaffolds**

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Chemical control is difficult, owing to the concealed habit of the larvae. Growers have traditionally relied on one or more coarse insecticide sprays (e.g., Asana, Lorsban, Proaxis, Warrior) 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. However, there is a good alternative in the form of pheromone mating disruption (MD) tools for the control of these perennial pests.

Isomate-PTB Dual (Pacific Biocontrol/CBC America, EPA Reg. No: 53575-34) is the current version of the twist-tie pheromone dispenser labeled for use against both of these species in all NYS stone fruits. They are placed in the trees at a rate of 150–250 ties/A at or before the first flight, with the higher rate (250/A) recommended when pest pressure is high. This product has replaced the Isomate-LPTB and Isomate-PTB formulations. We have conducted trials on the efficacy of Isomate-LPTB with and without the addition of directed trunk sprays in peaches, and after 2 years we saw that the pheromone dispensers completely suppressed trap catches of both PTB and LPTB for both seasons, compared with relatively heavy flights noted in the non-disrupted comparison blocks, showing that pheromone treatment was highly successful in disrupting the chemical communication of males and females of these two species.

These trials provided sufficient evidence that mating disruption alone is able to provide adequate protection from borer infestations in commercial orchards, giving growers an effective non-chemical alternative to trunk sprays for managing this pest complex in their stone fruit plantings. Growers interested in this approach should be placing the pheromone ties during these next 1–2 weeks, before the LPTB flight gets solidly under way statewide.



## DRIP TEST

START USING THE "APPLE IRRIGATION MODEL" FOR BOTH NEW AND MATURE ORCHARDS IN 2013

(T.L. Robinson, A. Lakso, L. Cheng, Horticulture; S. Hoying, Highland; M. Miranda Sazo, Newark; M. Fargione, Highland; and K. Iungerman, Ballston Spa)

❖❖ Proper irrigation will be an important tool for maximizing tree growth and achieving optimum fruit size this year. Now is the time get your trickle irrigation system up and running. Start by checking the entire distribution system and emitters this week. This year, with the relatively dry spring, the application of water should begin in mid-May. We suggest starting irrigation now for new plantings and especially for the NY1 apple cultivar.

This year the proper amount of water to apply to both new and mature orchards can be determined by running the apple irrigation model found at the NEWA website (<http://newa.cornell.edu>) under the crop management tab. This model asks you to pick a weather station near your farm and then define whether the orchard is a 1, 2, 3 or 4 year-old orchard or a mature orchard (5 years old or older). When you click the "calculate" button, the model will report how much water should be added each day or each week to your orchard. As we go through the season, log into the NEWA website once per week and run the irrigation model, then add the proper amount of water to the orchard in two irrigations per week until mid-June. After mid-June, we suggest you add the proper amount of water in three irrigations per week.

With new high-density orchards, irrigation is essential for early tree growth. Feathered trees have a low root:shoot ratio (small root system compared with the top). In many

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cases, these trees undergo water stress shortly after planting, despite adequate soil moisture levels in the bulk soil. This is due to the damaged and small root system of a transplanted tree, which can't adequately support the large top without frequent irrigation. Feathered trees produce much more leaf area shortly after planting than unfeathered trees, which creates a high water demand before the root system can re-grow sufficiently to support the trees. We recommend growers install irrigation immediately after planting (within 4 weeks) when planting highly feathered apple trees, to prevent water stress and maximize first year tree growth. Once the trickle irrigation system is installed, the new trees need only small but frequent doses of water.

After planting, tree growth and the uptake of nitrogen can be improved with frequent low doses of nitrogen fertilizer delivered at least twice weekly through the trickle system (fertigation) for the first 10-12 weeks of the season. With fertigation, the nitrogen, which is dissolved in the water, moves rapidly with the water to the root zone and is readily available to the tree growth during the season to speed development of the canopy.

The source of nitrogen, which is most readily available during the first year, is calcium nitrate but other formulations of nitrogen, which are liquids, (URANs or CANs) also are effective. With young non-bearing apple trees we suggest 60–100 lbs of nitrogen per season. Utilizing the weekly application strategy for the first 10 weeks of the season will require 6–10 lbs N per acre per week. With mature trees, we suggest from 20–40 lbs of nitrogen per season, which would be 2–4 lbs N per acre per week.

After the first 2–3 years, low nitrogen fertilization is desirable to keep the trees calm, with a balance between fruiting and cropping. Many mature high-density orchards receive excessive nitrogen fertilizer, which causes severe canopy management problems. "Soil strength" or fertility must be considered when calculating the amount of nitrogen to apply to mature high-density orchards, es-

pecially with vigorous and poor coloring varieties. Many soils in New York produce 30–60 lbs/acre of nitrogen annually through nitrification. This is often close to the amount needed by mature high-density orchards. Excess fertility often results in excessive vegetative growth, delayed cropping and soft and poorly colored fruit.❖❖

FIELD CLASSES

EVENT ANNOUNCEMENTS

DEMONSTRATION OF A NEW 3-ROW SPRAYER

You are invited to Vandewalle Fruit Farm, 6003 Shaker Rd, Alton, NY on 3 June 2013. Mr. Thijs Munckhof will be visiting from the Netherlands to demonstrate the MUNCKHOF 3-ROW SPRAYER he has designed. Originally introduced in 2008, there are now over 100 of these machines in use around the world, but this is the first such unit in the United States. MUNCKHOF has been manufacturing Harvesting Machines and Sprayers for over 125 years. Two Sessions for your convenience: from 4:00-5:00 P.M. and 6:30-7:30 P.M. For more information, call 315-946-9202.



GENERAL INFO

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## CORNELL FRUIT FIELD DAY

Cornell University will host the 2013 Fruit Field Day at the New York State Agricultural Experiment Station in Geneva, NY, on Thursday, August 1, from 8:00 a.m. to 5:00 p.m. There will be two tour loops of tree fruit and a single tour loop of grapes and small fruit crops. Fruit growers, consultants, and industry personnel are invited to tour field plots and learn about the latest research and extension efforts being carried out by researchers on the Geneva and Ithaca campuses, and on commercial farms elsewhere in the state. The focus of the field day will be on all fruit commodities of key importance to New York's \$350 million industry: apples, grapes, cherries, raspberries, strawberries, blueberries and other berry crops. During lunch, equipment dealers and representatives from various companies will showcase their latest products and technologies to improve fruit crop production and protection.

The event will be held on the Experiment Station's Fruit and Vegetable Research Farm South, 1097 County Road No. 4, one mile west of Pre-

emption Rd. in Geneva, NY. Signs will be posted. Attendees will be brought to the different research plots by bus to hear presentations by researchers on the work being conducted. Details on registration and program content will be available soon.

## CORNELL UNIVERSITY STORAGE WORKSHOP

This year's workshop, slated for August 6 in Ithaca, will feature an international, national and statewide cast. Our guest speakers include Dr. Angelo Zanella, who heads the post-harvest research group at Laimburg Agriculture Research Centre in Italy, and who will be presenting their work on DCA and ILOS, as well as their experiences with DPA. Other presentations will include Honeycrisp, and Empire and Gala browning by Jim Mattheis (USDA, Washington), Jennifer DeEll (Ontario Ministry of Agriculture and Food, Canada), as well as the Cornell team of Chris Watkins and David Rosenberger. Industry presentations include DEC-CO, PACE and Storage Control Systems. Registration materials will be available shortly.❖❖

INSECT TRAP CATCHES (Number/Trap/Day)						
	Geneva, NY			Highland, NY		
	5/20	5/23	5/28		5/20	5/28
Redbanded leafroller	2.4	3.5	0.1	Redbanded leafroller	1.8	1.1
Spotted tentiform leafminer	2.6	2.8	0.4	Spotted tentiform leafminer	8.0	2.0
Oriental fruit moth	0.8	0.3	0.4	Oriental fruit moth	1.4	3.8
Lesser appleworm	0.0	0.2*	0.0	Lesser appleworm	0.9	–
San Jose scale	0.0	0.7*	0.6	Codling moth	1.7*	2.1
Codling moth	0.3	2.3	1.1	Obliquebanded leafroller	–	0.0
American plum borer	0.4	0.2	0.0			
Lesser peachtree borer	0.1*	1.2	0.5			
* first catch						

## PEST FOCUS

Geneva: 1st **plum curculio** oviposition scars noted 5/23. **San Jose scale** 1st catch 5/23.  
**Lesser appleworm** 1st catch 5/23.

## UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1–5/28/13):	603	350
(Geneva 1/1–5/28/2012):	924	557
(Geneva "Normal"):	651	356
(Geneva 1/1–6/3 predicted):	772	477
(Highland 1/1–5/28/13):	734	406

<u>Coming Events:</u>	<u>Ranges (Normal ±StDev):</u>	
Spotted tentiform leafminer sap-feeders present	343–601	165–317
Spotted tentiform leafminer 1st flight subsides	674–956	372–580
Mullein plant bug hatch complete	508–656	264–358
San Jose scale 1st flight peak	554–746	294–418
American plum borer 1st flight peak	625–973	340–592
Codling moth 1st flight peak	571–999	311–591
European red mite 1st summer eggs	447–555	237–309
European red mite summer eggs hatch	737–923	424–572
Obliquebanded leafroller pupae present	601–821	328–482
Pear psylla hardshells present	493–643	271–361
Redbanded leafroller 1st flight subsides	589–899	329–561
Black cherry fruit fly 1st catch	702–934	380–576
Rose leafhopper adults on multiflora rose	689–893	366–498

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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