

SCAFFOLDS Fruit Journal, Geneva, NY

Volume 25, No. 11

Update on Pest Management and Crop Development

May 31, 2016

COMING EVENTS

| | 43°F | 50°F |
|------------------------------|--------|-------|
| Current DD* accumulations | | |
| (Geneva 1/1-5/31): | 700.3 | 387.2 |
| (Geneva 1/1-5/31/2015): | 746.1 | 473.8 |
| (Geneva "Normal"): | 722.4 | 414.8 |
| (Geneva 1/1-6/6, predicted): | 840.8 | 485.7 |
| (Highland 1/1-5/31): | 1018.0 | 563.0 |

Upcoming Pest Events – Ranges (Normal +/- Std Dev):

American plum borer

1st flight peak.....594-966 323-585

Cherry fruit fly 1st catch755-1289 424-806

Codling moth 1st flight peak.....557-977 306-578

Dogwood borer 1st catch771-1261 452-768

European red mite

summer eggs hatch737-923 424-572

Lesser appleworm

1st flight peak.....354-772 176-442

Obliquebanded leafroller

pupae present601-821 328-482

| | | |
|-------------------------------------|----------|---------|
| Obliquebanded leafroller | | |
| 1st catch | 805-981 | 470-590 |
| Oriental fruit moth | | |
| 1st flight subsides..... | 829-1111 | 488-688 |
| Peachtree borer 1st catch..... | 799-1331 | 462-824 |
| Pear psylla 1st summer | | |
| generation adults | 737-885 | 428-526 |
| Plum curculio | | |
| oviposition scars present | 485-589 | 256-310 |
| Redbanded leafroller | | |
| 1st flight subsides..... | 598-894 | 336-558 |
| San Jose scale 1st flight peak..... | 555-739 | 297-415 |
| Spotted tentiform leafminer | | |
| 1st flight subsides..... | 672-946 | 373-575 |
| White apple leafhopper | | |
| 1st gen adults present..... | 679-1041 | 380-694 |
| *[all DDs Baskerville-Emin, B.E.] | | |

Pest Focus

Geneva: 1st trap captures of San Jose Scale, American Plum Borer, and Lesser Peachtree Borer, 5/26.
 1st trap capture of Obliquebanded Leafroller today, 5/31.

Highland: 1st White Apple Leafhoppers and Rose Leafhoppers noted.
 1st trap capture of Dogwood Borer today, 5/31.

Insect model predictions for Highland[H]/Geneva[G]

[Source: NEWA Apple Insect Models,

<http://newa.cornell.edu/index.php?page=apple-insects>]

Plum curculio emergence complete at 308 DD50

(currently @ 298[H] / 212[G]).

Codling moth larval emergence @ 220 DD50 (currently

@ 206[H] / 172[G]).

Obliquebanded Leafroller larval emergence @ 350

DD43 (currently @ 230[H] / 0[G]).

San Jose Scale crawler emergence @ 400 DD50 after

1st flight (currently @ 239[H] / 116[G]).

TRAP CATCHES

Geneva (Number/trap)

| | 5/20 | 5/23 | 5/26 | 5/31 |
|-----------------------------|------|------|-------|------|
| Redbanded Leafroller | 19.5 | 26.5 | 21.5 | 10.0 |
| Spotted Tentiform Leafminer | 20.5 | 36.0 | 15.0 | 3.0 |
| Oriental Fruit Moth | 11.0 | 31.5 | 29.5 | 29.5 |
| Lesser Apple Worm | 0.0 | 0.5* | 0.0 | 4.5 |
| San Jose Scale | 0.0 | 0.0 | 3.0* | 3.0 |
| Codling Moth | 0.5* | 2.5 | 11.5 | 15.5 |
| American Plum Borer | - | - | 1.0* | 0.0 |
| Lesser Peachtree Borer | - | - | 12.5* | 13.0 |

| | | | | |
|-----------------------------|-------------|--------|-------|------|
| Obliquebanded Leafroller | - | - | - | 3.0* |
| Highland (Peter Jentsch) | | | | |
| | 5/9 | 5/16 | 5/23 | 5/31 |
| Green Fruitworm | 1.0 | 0.0 | 0.0 | 0.0 |
| Redbanded Leafroller | 18.0 | 19.0 | 3.0 | 1.0 |
| Spotted Tentiform Leafminer | 53.0 | 25.5 | 17.5 | 1.5 |
| Oriental Fruit Moth | 19.0 | 24.5 | 4.5 | 0.5 |
| Lesser Appleworm | 2.0 | 17.5 | 2.0 | 5.0 |
| San Jose Scale | 0.0 | 513.5* | 2.0 | 32.0 |
| Codling Moth | - | - | 35.0* | 71.0 |
| Obliquebanded Leafroller | - | - | 0.5* | 4.5 |
| Dogwood Borer | - | - | 0.0 | 1.0* |
| | * 1st catch | | | |

ORCHARD RADAR DIGEST

[Box Text: HOLIDAY TRAFFIC]

Geneva Predictions:

Roundheaded Appletree Borer

RAB egg laying begins: June 2. Peak egg laying period roughly: June 23 to July 7. First RAB eggs hatch roughly: June 17.

Dogwood Borer

First DWB egg hatch roughly: June 21.

Codling Moth

Codling moth development as of May 31: 1st generation adult emergence at 35% and 1st generation egg hatch at 0%.

1st generation 3% egg hatch expected: June 4 (= target date for first spray where multiple sprays needed to control 1st generation CM).

Obliquebanded Leafroller

Early egg hatch and optimum date for initial application of insecticide effective against OBLR (with follow-up applications as needed): June 22.

San Jose Scale

1st generation SJS crawlers appear: June 17.

Spotted Tentiform Leafminer

2nd STLM flight begins around: June 15.

[Section: INSECTS]

EVENTUALLY WOOLLY

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

[Box text: FUZZY LOGIC]

This is the point of the season at which we normally begin to hear reports of the first infestations of woolly apple aphid (WAA) in problem sites in western NY, although the earliest occurrences could easily be overlooked because they are just starting up. In addition to apple, its hosts include American elm, hawthorn, and mountain ash. It overwinters as an egg in bark cracks and crevices, or as a nymph on roots underground and in various protected locations on trees. WAA is attracted to the base of root suckers and around pruning wounds and cankers on limbs and trunks, and colonizes both above-ground parts of the apple tree as well as the roots. In the spring, the nymphs, which are reddish-brown with a bluish-white waxy covering, crawl up from the roots to initiate aerial colonies. These initially build up on the inside of the canopy on sites such as wounds or pruning scars, and later become numerous in the outer portion of the tree canopy, usually during late July to early August.

The aerial colonies occur most frequently on succulent tissue such as the current season's growth, water sprouts, unhealed pruning wounds, or cankers. The main injury to

young and mature trees is stunting due to the formation of root or twig galls; mature trees are usually not damaged. Heavy infestations cause honeydew and sooty mold on the fruit and galls on the plant parts, which interferes with harvest operations because red sticky residues from crushed WAA colonies can accumulate on pickers' hands and clothing.

During mid- to late June, water sprouts, pruning wounds, and scars on the inside of the tree canopy should be examined for WAA nymphs. During mid-July, new growth around the outside of the canopy should be examined for WAA colonies. No economic threshold has been determined for treatment of WAA, but they are difficult to control, so the occurrence of any colonies should prompt the consideration of some remedial action.

WAA is frequently parasitized by *Aphelinus mali*, a tiny wasp that is also native to North America. Parasitized aphids appear as black mummies in the colony. *A. mali* has been successfully introduced to many apple-growing areas of the world, and is providing adequate control of the WAA in several areas. It does not provide sufficient control in commercial orchards in our region because of its sensitivity to many commonly used insecticides; however, the wasp is

thought to reduce WAA populations in abandoned orchards.

WAA is difficult to control with insecticides because of its waxy outer covering and tendency to form dense colonies that are impenetrable to sprays. Insecticide treatments are more effective the earlier they are applied, since they are more capable of decreasing the population before it becomes widespread, and the insects' waxy covering is less extensive earlier in the season. WAA is resistant to the commonly used organophosphates, but other insecticides are effective against WAA, including Diazinon and Movento, and some additional products such as Admire, Assail, or Beleaf may offer suppression. For Movento and Assail, addition of a non-ionic surfactant (e.g., LI-700 or Regulaid) or horticultural mineral oil will improve activity. Good coverage to soak through the insects' woolly coverings is integral to ensuring maximum efficacy. Additionally, a Lorsban trunk application for borers made at this time will effectively control any crawlers that might be contacted by these sprays. In orchards where WAA has previously been noted as a recurring problem, the petal fall to first cover period (that would be right now) would be a good time for a protective application of Movento, preferably at the 8–9 oz/A rate. Because this material is systemic, the best efficacy will be obtained by following up

with a second spray in 14 days. It is additionally effective against San Jose scale, the crawlers of which are anticipated to begin emerging within the next 2 weeks.

DISRUPTIVE BEHAVIOR

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

[Box text: GET A PLUME]

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 mid- to late May, (we caught our first of this season in Geneva on

May 26, but it was probably flying before we had the traps out), 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.

Chemical control is difficult, owing to the concealed habit

of the larvae. Preplant dipping of roots and crowns of peach tree seedlings before planting using Lorsban has given complete control of the peachtree borer for the 1st growing season and has reduced borers during the 2nd season. For in-season control, 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 a 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.

[Section: GENERAL INFO]

EVENT ANNOUNCEMENTS

[Box text: FIELD TESTED]

The Cornell Fruit Field Day will be held in Geneva on Wednesday, July 20. This event, being organized by Cornell University, the NYS Agricultural Experiment Station, CALS

Fruit Program Work Team and Cornell Cooperative Extension, will feature ongoing research in berries, hops, grapes, and tree fruit. All interested persons are invited to learn about the fruit research under way at Cornell University. Attendees will be able to select from tours of different fruit commodities. It will be based at the NYSAES Fruit and Vegetable Research Farm South, 1097 County Road No. 4, 1 mile west of Pre-emption Rd. in Geneva, NY. Admission is \$50/person (\$40 for additional attendees from the same farm or business). Pre-registration is required; walk-in registration may be available for a \$10 surcharge on the day of the event. Please use the registration link below to register via credit card:

<http://events.cals.cornell.edu/ffd2016>

CORNELL AND CCE EMPLOYEES get free admission, but please pre-register using the same link; there's a **Cornell Staff** tab at the top of the home page, which will take you to a page to pre-register and select your lunch option. To participate as a sponsor, see the website page or contact Shelly Cowles (315-787-2274; mw69@cornell.edu).

NOTE: This year's IFTA (International Fruit Tree Association) Summer Study Tour is taking place in western NY and will focus on the Cornell Fruit Field Day, with complementary tours on the day before and after (July 19, Orleans Co. and

July 21, Wayne Co.) For more information on this tour, see their website: <http://www.ifruittree.org>

This material is based upon work supported by Smith Lever funds from the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

Scaffolds is published weekly from March to September by Cornell University -- NYS Agricultural Experiment Station (Geneva), and Ithaca -- with the assistance of Cornell Cooperative Extension. New York field reports welcomed. Send submissions by 2 p.m. Monday to:

Scaffolds Fruit Journal

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