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Update on Pest Management and Crop Development
June 4, 2018

COMING EVENTS

	43°F	50°F
Current DD* accumulations		
(Geneva 1/1-6/4):	811.5	503.7
(Geneva 1/1-6/4/2017):	770.4	406.5
(Geneva "Normal"):	804.7	466.7
(Geneva 1/1-6/11, predicted):	959.5	602.8
(Highland 1/1-6/4):	996.8	618.2

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

American plum borer		
1st flight peak	601-967	329-585
Black stem borer		
1st flight subsides	807-1248	444-781
Codling moth 1st flight peak	563-991	309-585
Dogwood borer 1st catch	754-1243	438-755
Lesser peachtree borer		
flight peak	853-1767	513-1165
Obliquebanded leafroller		
1st catch.....	797-980	463-589

Oriental fruit moth		
1st flight subsides	829-1103	484-681
Pandemis leafroller flight peak...	889-1188	512-736
Peachtree borer 1st catch	781-1320	447-816
San Jose scale 1st flight subsides	864-1238	515-769
White apple leafhopper		
1st brood adults 1st catch	679-1041	380-694

*[all DDs Baskerville-Emin, B.E.]

PEST FOCUS

Geneva: Obliquebanded Leafroller 1st catch today, 6/4.

Highland: Obliquebanded Leafroller 1st catch today, 6/4.

Dogwood borer 1st catch today, 6/4.

TRAP CATCHES (Number/trap)

Geneva

	5/25	5/29	6/1	6/4
Green Fruitworm	0.5	0.0	0.0	0.0
Redbanded Leafroller	55.0	59.0	14.0	1.5
Spotted Tentiform LM	8.0	9.5	2.5	0.0
Oriental Fruit Moth	70.0	31.0	21.0	7.0
Codling Moth	19.0	41.0	48.0	22.0
Lesser Peachtree Borer	25.0	36.5	7.5	2.0
San Jose Scale	0.0	266.0*	15.8	0.5

Obliquebanded Leafroller	-	-	-	1.0*

Highland (Peter Jentsch)

	5/14	5/21	5/29	6/4
Redbanded Leafroller	132.0	40.5	20.0	3.0
Spotted Tentiform LM	17.0	10.5	7.5	1.5
Lesser Appleworm	0.0	0.0	7.0*	3.3
Oriental Fruit Moth	139.5	129.0	73.5	13.5
Codling Moth	0.5*	7.7	65.0	58.5
San Jose Scale	0.0	31.0	5,693	17.0
Obliquebanded Leafroller	-	-	-	8.0*
Dogwood Borer	-	-	-	1.5*

* 1st catch

ORCHARD RADAR DIGEST

[H = Highland; G = Geneva]:

Roundheaded Appletree Borer

RAB egglaying begins: June 4 (G). Peak egglaying period roughly: June 20-July 7 (H)/June 27-July 13.

First

RAB eggs hatch roughly: June 14 (H)/June 19 (G).

Dogwood Borer

First DWB egg hatch roughly: June 16 (H)/June 24 (G).

Codling Moth

Codling moth development as of June 4:

1st generation adult emergence at 67% (H)/52% (G)

and 1st generation egg hatch at 12% (H)/3% (G).
1st generation 3% egg hatch expected: June 4 (G) =
target date for first spray where multiple sprays needed
to control 1st generation CM.

Obliquebanded Leafroller

1st generation OBLR flight, first trap catch expected:
June 1 (H)/June 9 (G).

San Jose Scale

1st generation SJS crawlers appear: June 11 (H)/June 20
(G).

Spotted Tentiform Leafminer

2nd STLM flight begins around: June 10 (H)/June 18 (G).

[Section: DISEASES]

Weekly Apple Scab Update for NY (6/4 to 6/9/18)

(Kerik Cox & Katrin Ayer, PP&PMB, Geneva)

Below are apple scab predictions for NY apple regions based on the NEWA disease forecast system (http://newa.cornell.edu/index.php?page=apple-diseases). Information is kept concise. Alerts will also be posted to Twitter @FruitPathology with updates occurring throughout the week, which would allow

notifications to send to mobile device. The various outputs are explained below the table.

APPLE SCAB

Week of 6/4/18*	Hudson Valley	Wayne	Niagara	Champlain Valley	Finger Lakes
Infection Predicted	6/4-6/6	64-6/6	6/4-6/5	6/4-6/6	6/4-6/6
Leaf Wetness	**52 hrs**	**51 hrs**	**25 hrs**	**163 hrs**	**178 hrs**

Spray Recommendation (All): IF THERE'S A BREAK IN THE RAIN, APPLY A COVER SPRAY

* predictions are regional, the model works best under local conditions. Always check weather and crop stage before making a management decision.

Infection predicted:

"Date": An infection event is predicted for the date listed. If a multi-day infection event is predicted, a range of dates for the infection is listed.

Leaf Wetness: Cumulative hours of leaf wetness predicted during infection event.

[Section: INSECTS]

SPINNING WOOL

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

[Box text: FUZZ TONE]

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, and the earliest occurrences are already starting to be noted. 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.

Beginning now and extending through 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, Beleaf, or Sivanto Prime 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 give collateral control of 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 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.

THE GREATER AND LESSER OF TWO EVILS

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

[Box text: FIGHTING BORE-DOM]

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 21), 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 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.

SWD TRAPPING UPDATE

The following notice appears in a post today on the Spotted Wing Drosophila blog site [http://blogs.cornell.edu/swd1/]:

• Two female SWD were caught in two traps, one in each trap, in a tart cherry block near Lake Ontario's shore in Wayne County during the week ending on May 31, 2018. This tart cherry block had significant SWD infestation in 2017. Fruit are still hard and green in this block and are not yet susceptible to SWD.

Four other farms we are monitoring in Wayne County and one in Ontario County had zero SWD caught.

• Reviewing 2017 tart cherry spray records from several farms in the Lake Ontario region showed (1) spray intervals were long, between insecticides effective against SWD, as harvest approached; and (2) blocks with 14- to 30-day-long spray intervals that escaped SWD injury were harvested before SWD either arrived or had built to damaging population levels.

• In Michigan tart cherries, where SWD has been problematic for several years, the tactics are to (1) monitor for SWD in the tart cherry orchard; (2) keep an eye on fruit ripening stage, blush signals susceptibility; (3) apply insecticide to protect susceptible fruit if SWD has been caught in the orchard.

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