

# SCAFFOLDS Fruit Journal, Geneva, NY

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Update on Pest Management and Crop Development

June 18, 2018

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## COMING EVENTS

	43°F	50°F
Current DD* accumulations		
(Geneva 1/1-6/18):	1088.5	701.0
(Geneva 1/1-6/18/2017):	1096.4	636.1
(Geneva "Normal"):	1118.7	681.4
(Geneva 1/1-6/25, predicted):	1262.5	826.1
(Highland 1/1-6/18):	1310.9	834.2
Upcoming Pest Events – Ranges (Normal +/- Std Dev):		
Apple maggot 1st catch .....	1226-1690	776-1091
American plum borer		
flight subsiding.....	1200-1488	745-967
Cherry fruit fly 1st catch .....	755-1289	424-806
Lesser appleworm		
1st flight subsides .....	1002-1538	613-989
Lesser peachtree borer		
flight peak .....	853-1767	513-1165
Obliquebanded leafroller		
summer larvae hatch .....	1038-1460	652-957

## Oriental fruit moth

2nd flight start ..... 1244-1494 765-970

Peachtree borer flight peak..... 1028-2004 619-1355

## Redbanded leafroller

2nd flight start ..... 1204-1557 739-1012

## San Jose scale

1st gen crawlers present..... 1033-1215 619-757

## White apple leafhopper

1st generation adults peak ..... 1162-1414 765-987

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

## PEST FOCUS

Geneva: 1st San Jose crawlers caught today, 6/18.

Highland: 1st San Jose crawlers caught 6/16.

## MODEL BUILDING

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

[Source: NEWA Apple Insect Models,

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

**Codling moth** spray window for ovicides at 150 DD50 and for larvicides at 250-360 DD50 after biofix (currently at @ 481[H] / 460[G] / 268[Wmson] / 266[Sodus] / 389[Albion] / 331[Appleton] / 381[Medina]).

**Obliquebanded Leafroller** larval emergence @ 350 DD43 from biofix (currently @ 296[G] / 314[H]).

**San Jose Scale** crawler emergence @ 310 DD50 after 1st flight (currently @ 511[H] / 316[G]).

### TRAP CATCHES (Number/trap)

Geneva

	6/7	6/11	6/15	6/18
Redbanded Leafroller	0.0	0.5	0.0	0.5
Spotted Tentiform LM	0.0	0.0	0.0	20.0
Oriental Fruit Moth	0.0	0.5	1.0	1.0
Codling Moth	5.5	27.0	37.0	37.5
Lesser Peachtree Borer	2.0	9.0	12.0	11.0
Obliquebanded Leafroller	0.5	1.5	7.5	2.0

Dogwood Borer	-	1.0*	0.0	2.0
Peachtree Borer	0.0	1.5*	3.0	4.0

Highland (Peter Jentsch)

	5/29	6/4	6/11	6/18
Redbanded Leafroller	20.0	3.0	0.0	4.0
Spotted Tentiform LM	7.5	1.5	4.0	40.5
Lesser Appleworm	7.0*	3.3	3.0	2.0
Oriental Fruit Moth	73.5	13.5	23.5	0.5
Codling Moth	65.0	58.5	26.5	40.0
San Jose Scale	5,693!	17.0	0.0	1.0
Obliquebanded Leafroller	-	8.0*	21.5	46.0
Dogwood Borer	-	1.5*	1.5	1.5

\* 1st catch

# ORCHARD RADAR DIGEST

**[H = Highland; G = Geneva]:**

## Roundheaded Appletree Borer

Peak RAB egg laying period roughly: June 19-July 3  
(H)/June 26-July 12.

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 18:

1st generation adult emergence at 94% (H)/67% (G)  
and 1st generation egg hatch at 62% (H)/12% (G).

## Obliquebanded Leafroller

Early egg hatch and optimum date for initial  
application

of B.t., Delegate, Proclaim, Intrepid, Rimon, Altacor,  
Belt, pyrethroid or other insecticide effective against  
OBLR (with follow-up applications as needed): June 18  
(H)/June 25 (G).

## Oriental Fruit Moth

2nd generation OFM flight begins around: June 22 (H)/June 30 (G).

## Redbanded Leafroller

2nd RBLR flight begins around: June 22 (H)/June 30 (G).

## San Jose Scale

1st generation SJS crawlers appear: June 19 (G).

## Spotted Tentiform Leafminer

Rough guess of when 2nd generation sap-feeding mines

begin showing: June 29 (H)/ July 7 (G).

## [Section: DISEASES]

### **Weekly Apple Scab Update for NY (6/18 to 6/23/18)**

(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	Hudson	Wayne	Niagara	Champlain	Finger
6/18/18*	Valley			Valley	Lakes
Infection	6/18-19	6/18-19	6/18-19	6/18-19	6/18
Predicted					
Leaf	19 hrs	13 hrs	14 hrs	25 hrs	20 hrs
Wetness					

**Spray Recommendation (All):** Apply a cover spray to manage secondary infections if there hasn't been coverage in two weeks. Pop-up thunderstorms could be the deciding factor in the rain threat.

\* 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, the first full date of the infection is listed/

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

## **[Section: INSECTS]**

### HEAT OF THE MOMENT

(Art Agnello, Entomology, Geneva; [ama4@cornell.edu](mailto:ama4@cornell.edu))

## **[Box Text: SUMMER CREW]**

## Obliquebanded Leafroller

Assuming a biofix (1st adult catch) of OBLR this year from about June 4 to June 11, sites around the state have accumulated a total of anywhere from 136 [Wayne Co.] to 296 [Geneva] to 314 [Highland) DD (base 43°F) by today. You can check your specific location on the NEWA Apple Insect Models page [<http://newa.cornell.edu/index.php?page=apple-insects>]. First egg hatch is generally expected at about 360 DD, which has already passed in Highland, and should occur during the next 7-10 days in the rest of the state. The peak of hatching activity, corresponding to about 25% egg hatch, occurs at about 450 DD, while the 630 DD point in the insect's development roughly corresponds to 50% egg hatch; at 720 DD, the earliest emerging larvae have reached the middle instars that are large enough to start doing noticeable damage to foliar terminals and, eventually, the young fruits. This is also the earliest point at which visual inspection for the larvae is practical, so sampling for evidence of a treatable OBLR infestation would be recommended at that time in orchards where pressure has not been high enough to justify a preventive spray.

Guidelines for sampling OBLR terminal infestations can be found on p. 73 in the Recommends, using a 3% action threshold that would lead to a recommended spray of an effective leafroller material. Delegate, Altacor, Proclaim, Exirel, or a pre-mix containing a diamide (e.g., Besiege, Minecto Pro, Voliam Flexi) are our recommended choices in most cases; Rimon, Intrepid, Grandevo, a B.t. material or a pyrethroid are also options, depending on block history and previous spray efficacy against specific populations. If the average percentage of terminals infested with live larvae is less than 3%, no treatment is required right away, but another sample should be taken three to five days (100 DD) later, to be sure populations were not underestimated.

## **Aphidology**

Although small numbers of green aphids (Spirea aphid, *Aphis spiraecola*, and Apple aphid, *Aphis pomi*) may have been present on trees early in the season, populations should be increasing regularly as the summer weather patterns gradually become established. Both species are common during the summer in most N.Y. orchards, although no extensive surveys have been done to compare their relative abundance in different production areas throughout

the season. It's generally assumed that infestations in our area are mostly Spirea aphid.

Nymphs and adults suck sap from growing terminals and water sprouts. High populations cause leaves to curl and may stunt shoot growth on young trees. Aphids excrete large amounts of honeydew, which collects on fruit and foliage. Sooty mold fungi that develop on honeydew cause the fruit to turn black, reducing its quality.

Aphids should be sampled several times throughout this season starting now. Inspect 10 rapidly growing terminals from each of 5 trees throughout the orchard, noting the percentage of infested terminals, including rosy aphid-infestations, since they tend to affect the foliage similarly to the green species at this time of the year. No formal studies have been done to develop an economic threshold for aphids in N.Y. orchards. Currently, treatment is recommended if 30% of the terminals are infested with either species of aphid, or at 50% terminal infestation and less than 20% of the terminals with predators (below). An alternative threshold is given as 10% of the fruits exhibiting either aphids or honeydew.

The larvae of syrphid (hoverflies) and cecidomyiid flies (midges) prey on aphids throughout the summer. These predators complete about three generations during the summer. Most insecticides are somewhat toxic to these two predators, and they usually cannot build up sufficient numbers to control aphids adequately in regularly sprayed orchards. Check Tables 7.1.1 (p. 65) and 7.1.2 (p. 67) in the Recommends for ratings of efficacy and impact on beneficials, respectively, for common spray materials. Both aphid species are resistant to most organophosphates, but materials in other chemical classes that control these pests effectively include: Actara, Admire Pro, Asana, Assail, Aza-Direct, Beleaf, Danitol, Lannate, Movento, Proaxis, Pyrenone, Sivanto Prime, Vydate and Warrior, as well as pre-mixes containing some of the same a.i.s.

**Woolly Apple Aphid** colonizes both aboveground parts of the apple tree and the roots and commonly overwinters on the roots. In the spring, nymphs crawl up on apple trees from the roots to initiate aerial colonies. Colonies 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, but you may already begin to notice these aerial colonies in high

pressure orchards in the region; we have begun to see these colonies in the Geneva research plantings. Refer to the [June 4](#) issue of Scaffolds for an overview of some control recommendations.

## **San Jose Scale**

SJS crawlers should be starting to emerge in the earliest sites around the state this week; they have already been noted in the Hudson Valley, and the degree day timing is appropriate for them to begin showing up in western NY within a few days. We recommend applications of a suitable material at the beginning and peak occurrence of this stage; consult [last week's issue](#) for a discussion of the best options.

## **Japanese Beetle**

This perennial pest overwinters as a partially grown grub in the soil below the frost line. In the spring, the grub resumes feeding, primarily on the roots of grasses, and then pupates near the soil surface. Adults normally begin to emerge during the first week of July in upstate N.Y. The adults fly to any of 300 species of trees and shrubs to feed; upon emergence, they usually feed on the foliage and flowers of low-growing plants such as roses, grapes, and shrubs, and later on tree foliage. On tree leaves, beetles devour the tissue between the

veins, leaving a lacelike skeleton. Severely injured leaves turn brown and often drop. Adults are most active during the warmest parts of the day and prefer to feed on plants that are fully exposed to the sun.

Although damage to peaches is most commonly noted in our area, the fruits of apple, cherry, peach and plum trees may also be attacked, all of which have been suffering increasing damage from these insects in recent years. Fruits that mature before the beetles are abundant, such as cherries, may escape injury.

Ripening or diseased fruit is particularly attractive to the beetles. Pheromone traps are available and can be hung in the orchard in early July to detect the beetles' presence; these products are generally NOT effective at trapping out the beetles. Fruit and foliage may be protected from damage by spraying an insecticide such as Assail, Sevin, Endigo or Voliam Xpress/Besiege (in apple) or Admire Pro, Assail, Sevin, Endigo, Leverage or Voliam Xpress/Besiege (in cherries or peaches) when the first beetles appear.

(Information adapted from: Johnson, W.T. & H.H. Lyon. 1988. Insects that feed on trees and shrubs. Cornell Univ. Press.; and Howitt, A.H. 1993. Common tree fruit pests. Mich. State. Univ. Ext. NCR 63.)

## Spotted Wing Drosophila

The first SWD adults of the season are starting to show up in traps around the state, but captures are so far still low. Keep apprised of what's going on in your region by consulting the SWD blog

[<http://blogs.cornell.edu/swd1/>]. Updated SWD Quick Guides providing capsule descriptions of products registered for SWD management can be found on the Spotted Wing Drosophila Management page:

<http://fruit.cornell.edu/spottedwing/management/>.

## [Section: GENERAL INFO]

### EVENT ANNOUNCEMENTS

Plant Growth Regulator (PGR) Orchard Tour  
Friday, June 29, 8:00 am - 5:00 pm.

We invite you to attend the talk titled "Understanding the Use of Plant Growth Regulators (PGRs) on Growth and Development of Fruit Trees" (Poliana Francescato, NYSAES, Geneva), followed by a tour of her research plots at the NYSAES on **Friday June 29, from 8am until 1:30pm**. Following the tour, there will be a **lunch buffet and a grower celebration** to honor Poliana's

work accomplishments at the **Ramada Lakefront Hotel in Geneva from 2-5pm.**

During the NYSAES tour, you will also hear from distinguished 'tour guest' Duane Greene (Professor, Stockbridge School of Agriculture, University of Massachusetts, Amherst, MA), who has conducted more than 40 years of study on tree fruit, primarily involving plant hormones and plant growth regulators. The PGR tour will be an excellent opportunity to interact with Duane and learn from one of the world leaders on PGR tree fruit research in an informal and friendly setting. We encourage young growers to attend and ask our speakers some questions on how PGRs can manipulate two of the most common practices: fruit thinning and flower formation. We hope you will consider attending the first PGR orchard tour organized by CCE LOF this year.

### **Program:**

**7:30am-7:50am:** Please arrive early and park at Hedrick, Jordan, or Barton lot, NYSAES, Geneva (follow Cornell signs to conference room at Barton Hall).

**8:00am-9:45am:** Talk: “Understanding the Use of Plant Growth Regulators (PGRs) on Growth and Development of Fruit Trees” by Poliana Francescato, NYSAES.

**9:45am-10:00am:** Drive to research plots located at Research North Farm, 1097 County Road 4, Geneva, NY 14456 (there is also another entrance, closer to research plots located at 3425 Sutton Rd., Geneva, NY 14456).

**10:00am-1:30pm:** Visit PGR research plots with Poliana Francescato, Duane Greene, and Peter Herzeelle

**1:30pm-2pm:** Drive from NYSAES to lunch stop at the Ramada Lakefront Hotel, Geneva

**2pm-5:00pm:** Lunch buffet, social hour, appreciations, and gifts to celebrate the outstanding work contributions of Poliana (group meet at The Seneca Terrace Tent, Ramada Lakefront Hotel, 41 Lake Front Dr. Geneva, NY 14456)

**5:00pm:** Official adjourn of CCE LOF PGR orchard tour and celebration.

Please note that **the lunch is FREE and will only be included to those who attend the morning talk, PGR orchard tour, AND pre-register** at our CCE LOF website by **Friday June 22.**

To register and for more details:

[<https://lof.cce.cornell.edu/event.php?id=954>].

CCE LOF would like to acknowledge the generous support of **BASF** and **Valent BioSciences** for bringing Professor Duane Greene to NYSAES and for covering lunch expenses at the Ramada Lakefront Hotel, respectively.

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Editor: A. Agnello

Dept. of Entomology, NYSAES

630 W. North St.

Geneva, NY 14456-1371

Phone: 315-787-2341 FAX: 315-787-2326

E-mail: ama4@cornell.edu

Online at

<<http://www.scaffolds.entomology.cornell.edu/index.html>>