

SCAFFOLDS Fruit Journal, Geneva, NY

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Update on Pest Management and Crop Development

May 21, 2018

COMING EVENTS

| | 43°F | 50°F |
|-------------------------------|-------|-------|
| Current DD* accumulations | | |
| (Geneva 1/1-5/21): | 467.0 | 257.2 |
| (Geneva 1/1-5/21/2017): | 539.4 | 269.0 |
| (Geneva "Normal"): | 528.6 | 281.9 |
| (Geneva 1/1-5/28, predicted): | 646.0 | 387.2 |
| (Highland 1/1-5/21): | 635.0 | 354.1 |

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

American plum borer

1st flight peak 601-967 329-585

Black stem borer 1st flight peak. 597-941 314-565

Codling moth 1st flight peak 563-991 309-585

Lesser appleworm

1st flight peak 364-775 183-444

Mullein plant bugs

hatch complete 508-656 264-358

Obliquebanded leafroller

pupae present 601-821 328-482

Redbanded leafroller

| | | |
|-------------------------------------|---------|---------|
| 1st flight subsides | 604-891 | 338-553 |
| San Jose scale 1st flight peak..... | 557-737 | 297-414 |
| McIntosh fruit set | 508-596 | 262-329 |

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

Phenologies

Geneva: Current 5/28, Predicted

Apple

(McIntosh, Empire): 80% petal fall fruit set+

(Red Delicious): 50% petal fall fruit set+

Pear (Bartlett, Bosc): petal fall fruit set

Sweet Cherry fruit set

Tart Cherry: 80% petal fall fruit set+

Peach: petal fall fruit set+

Plum: fruit set

Apricot: fruit set

Highland:

Apple

(McIntosh): 100% fruit set

(Golden Del.): 90% petal fall

(Ginger Gold): 92% petal fall

(Red Delicious): 97% petal fall

Pear

(Bartlett): 100% fruit set

(Bosc): 100% fruit set
 Peach: 8-18% fruit set, shucks off
 Sweet cherry: 83% fruit set
 Plum (Stanley): 100% petal fall

PEST FOCUS

Geneva: 1st Brown Marmorated Stink Bug catch 5/15
 (Monroe & Wayne Counties).
 1st Codling Moth and Lesser Peachtree

Borer

catch today, 5/21.

Highland: 1st San Jose Scale catch 5/18.

TRAP CATCHES (Number/trap)

Geneva

| | 5/10 | 5/14 | 5/17 | 5/21 |
|------------------------|------|------|------|------|
| Green Fruitworm | 0.5 | 0.5 | 0.5 | 0.0 |
| Redbanded Leafroller | 56.0 | 49.0 | 85.0 | 78.0 |
| Spotted Tentiform LM | 8.5 | 7.0 | 13.5 | 9.0 |
| Oriental Fruit Moth | 42.5 | 1.5 | 90.0 | 81.0 |
| Codling Moth | - | - | 0.0 | 0.5* |
| Lesser Peachtree Borer | 0.0 | 0.0 | 0.0 | 0.5* |
| San Jose Scale | - | - | - | 0.0 |

Highland (Peter Jentsch)

4/30 5/7 5/14 5/21

| | | | | |
|----------------------|------|-------|-------|-------|
| Green Fruitworm | 0.0 | 0.0 | 0.0 | 0.0 |
| Redbanded Leafroller | 97.5 | 153.5 | 132.0 | 40.5 |
| Spotted Tentiform LM | 29.0 | 42.5 | 17.0 | 10.5 |
| Lesser Appleworm | 4.5 | 0.0 | 0.0 | 0.0 |
| Oriental Fruit Moth | 0.0 | 52.0* | 139.5 | 129.0 |
| Codling Moth | 0.0 | 0.0 | 0.5* | 7.7 |
| San Jose Scale | - | - | 0.0 | 31.0 |

(*on 5/18)

* 1st catch

ORCHARD RADAR DIGEST

[H = Highland; G = Geneva]:

Roundheaded Appletree Borer

RAB egg laying begins: May 29 (H)/June 4 (G). Peak egg laying period roughly: June 18-July 1 (H)/June 23-July 7. First RAB eggs hatch roughly: June 13 (H)/June 19 (G).

Dogwood Borer

First DWB egg hatch roughly: June 16 (H)/June 22 (G).

Codling Moth

Codling moth development as of May 21:

1st generation adult emergence at 10% (H)/ 1% (G) and 1st generation egg hatch at 0% (H)/(G).

1st generation 3% egg hatch expected: May 31 (H)/June 6 (G) = target date for first spray where

multiple sprays needed to control 1st generation
CM.

Lesser Appleworm

Peak LAW trap catch: May 25 (G).

Obliquebanded Leafroller

1st generation OBLR flight, first trap catch expected:
June 1 (H)/June 8 (G).

Oriental Fruit Moth

1st generation 55% egg hatch and first treatment
date, if needed: May 25 (H)/May 29 (G).

San Jose Scale

First adult SJS caught on trap: May 23 (G).

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

Spotted Tentiform Leafminer

1st generation sapfeeding mines start showing:
May 24 (G).

[Section: DISEASES]

Weekly Apple Scab and Blossom Blight Updates for NY (5/21 to 5/26/18)

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

Below are apple scab and blossom blight 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 tables.

APPLE SCAB

| Week of | Hudson | Wayne | Niagara | Champlain | Finger |
|-----------|------------------------|--------|----------|-----------|--------|
| 5/21/18* | Valley | | | Valley | Lakes |
| Infection | High | Low | Moderate | Moderate | Low |
| Predicted | (5/22-23) | (5/22) | (5/22) | (5/22-23) | (5/22) |
| Maturity | 100% | 95% | 86% | 78% | 97% |
| Discharge | Secondary infection | 5% | 15% | 15% | 3% |

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

Infection predicted:

- **"Low"**: <10% ascospores discharged; **"Moderate"**: 10-20% ascospores; **"High"**: >20% ascospores discharged
- **"None"** – no infection predicted for the week; **"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 will be listed

Ascospore maturity: The percent ascospore maturity during the predicated infection event. If there is no infection predicted, the maturity for the end of the week is listed.

Discharge: The percent ascospore discharge during the predicted infection event. If no infection predicted, the cumulative ascospore discharge for the week is listed.

BLOSSOM BLIGHT

| Week of | Hudson Valley | Wayne | Niagara Valley | Champlain | Finger Lakes |
|------------------|---------------------|-------------------|-------------------|---------------------------------|-------------------|
| 5/21/18* | | | | | |
| Infection Risk | High (5/22-26)** | High (5/25-26) | High (5/25-26) | High (5/23) and (5/25-26) | High (5/25-26) |
| Highest EIP | 163 | 181 | 116 | 122 | 215 |
| Highest 4-Day DH | 766 | 699 | 488 | 502 | 802 |

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

** for late-blooming cultivars

Infection risk:

- **"Low"**: EIP and 4-day DH accumulation at/below 75 and 300, respectively; **"Moderate"**: EIP and 4-day accumulation between low and high-risk values;

"High": EIP and 4-day DH accumulation at or above 100 and 400, respectively with moisture predicted

- **"None"**: little to no risk predicted for the week;
- **"Date"**: The date of highest risk for the week listed.

Highest EIP & 4-Day DH: The highest EIP value and 4-day DH accumulation for the week listed.

[Section: INSECTS]

FADE TO GREEN

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

[Box text: CROP LOAD]

[Editor's note: This is an updated version of our annual petal fall article, the main points of which don't seem to vary too much from year to year, despite the fact that every spring seems to have a unique weather pattern - AMA]

Few things in life are well synchronized, least of all tree development during the spring in New York, and this year's erratic temperature trend has intensified the normal disparity shown among the state's different growing regions. The result is that we have trees across

the state ranging from full bloom to setting fruits. This period is always tough to nail for timeliness of advice, so we'll be conservative and assume that everyone who isn't actually scheduling their petal fall sprays will at least want to give them some advance planning, since the one thing we can rely on is that the "old faithful" insect pests we always look out for at petal fall will continue their progress towards the newly formed fruits. To that end, this overview will help take your mind off the current fluxes in the weather and make preparations for when things settle down into a less dramatic summer pattern.

Plum Curculio

Adults move into orchards from overwintering sites in hedgerows or the edges of woods and adults are active when temperatures exceed 60°F, something that has been occurring recently and will continue throughout this week. Adult females oviposit in fruit during both day and night but feed mostly at night. Depending on temperature, overwintering adults remain active for 2–6 weeks after petal fall. Because adults are not highly mobile, orchards near overwintering sites, woodlands, and hedgerows are most susceptible to attack. Fruit damage is usually most common in border rows next to sites where adults overwinter. Although initial post-

bloom sprays for plum curculio control should begin at petal fall, growers are often unsure how many additional sprays will be necessary to maintain protective chemical residues to prevent subsequent damage throughout the PC oviposition cycle, which varies according to temperatures and weather patterns after petal fall.

Following from the fact that PC activity and oviposition are largely determined by temperature, we are able to use an oviposition model to estimate when control sprays after petal fall are no longer necessary to protect fruit from PC damage. This model is based on the assumption that residues from sprays applied after petal fall need to be maintained on fruit and foliage only until PC adults stop immigrating into orchards, which happens to correspond to the time when about 40% of the oviposition cycle is complete. This is predicted by the model to occur at 308 DD (base 50°F) after petal fall of McIntosh. Most probably, this strategy works because, after 40% of PC oviposition is complete, adults usually do not move into the orchard from outside sources, or within orchards from tree to tree. Therefore, by this time, adults residing in treated trees have already been killed by insecticide residues

and are unable to complete the remainder of their normal oviposition cycle.

In order to use this strategy: (1) Treat the entire orchard at petal fall with a broad spectrum insecticide. (2) Start calculating the accumulation of DD after petal fall of Macs (base 50°F); this is easily done from the NEWA Apple Insect Models page (<http://newa.cornell.edu/index.php?page=apple-insects>) by entering the petal fall date for your area. (3) No additional sprays are necessary whenever the date of accumulation of 308 DD falls within 10–14 days after a previous spray. In cherries and other stone fruits that are already at shuck fall, sprays should start (or should have started, as appropriate) at the first opportunity. Recall that, in addition to the industry standard broad-spectrum materials such as Imidan, some additional options may be considered: Lorsban 75WG can still be used at petal fall in tart cherries, but obviously is no longer labeled for this use in apples; also, Avaunt and Actara are effective for plum curculio in apples and pears, and Avaunt is also labeled in stone fruit as another PC option. Delegate and Altacor both have some activity on PC, but should not be considered as the first choices in high-pressure blocks. Another

option would be Exirel, a 2nd-generation diamide with better efficacy against this pest.

European Apple Sawfly

This primitive bee and wasp relative shows a preference for early or long-blooming varieties with a heavy set of fruit. This insect is generally more of a pest in eastern N.Y., although it has been gradually making its presence known in the more western sites, and now frequently reaches as far as Wayne Co. (and beyond). The adult sawfly emerges about the time apple trees come into bloom and lays eggs in the apple blossoms, which means they can be found now, in between temperature dives into the 40s. Young larvae begin feeding just below the skin of the fruits, creating a spiral path usually around the calyx end. This early larval feeding will persist as a scar that is very visible at harvest, and which some find to be almost decorative, although fruit marketability is obviously affected. Following this feeding behavior, the larva usually begins tunneling toward the seed cavity of the fruit or an adjacent fruit, which usually causes it to abort. As the larva feeds internally, it enlarges its exit hole, which is made highly conspicuous by a mass of wet, reddish-brown frass. The frass may drip onto adjacent fruits and leaves, giving them an unsightly appearance. The

secondary feeding activity of a single sawfly larva can injure all the fruit in a cluster, causing stress on that fruit to abort during the traditional "June drop" period.

Certain insecticides that control this pest also adversely affect bees, which can pose a problem at petal fall because certain apple varieties lose their petals before others. In blocks of trees where petal fall has occurred on one variety but not the others, the variety that has lost its petals is likely to sustain some curculio or sawfly injury until an insecticide is applied. Some insecticides with activity against both plum curculio and sawfly -- like Avaunt and Actara -- may have a slight advantage over the conventional OP Imidan in this case. Assail represents another option for controlling sawfly; it's not very active against plum curculio, but will do a good job against rosy apple aphid and spotted tentiform leafminer, as well as sawfly, at this timing. Altacor and Exirel are both rated high in their control efficacy against sawfly. To minimize the hazard to honey bees, make sure any pesticide is applied only when no bees are actively foraging on blooming weeds (evening is better than early morning).

Obliquebanded Leafroller

Larvae overwintering as 1st- or 2nd-stage caterpillars may have had the ability to grow to a noticeable size, although we haven't actually seen any up to this point, so most are likely still relatively small. While you're assessing bud viability, it would be prudent to have a quick look for later-stage larvae in problem blocks to determine whether a treatment against the overwintered brood should be included in your petal fall plans. Scout the blossom clusters or foliar terminals for larvae feeding within both the flowers and rolled leaves; a 3% infestation rate could justify an application to minimize overwintered fruit damage and help reduce summer populations.

Among the selective insecticides available, Intrepid and Rimon have been successful at this timing, and B.t. products, which can be used while blossoms are still present, include Agree, Biobit, Deliver, Dipel, and Javelin. More recently, Proclaim has been shown to be very effective at the petal fall timing, and also provides activity against early season mite populations. Delegate, Altacor, and Exirel all offer very good efficacy against not only OBLR, but also the internal leps. Grandevo is a newer biological that is also effective against this broad group of leps. Pyrethroids such as Asana, Baythroid, Danitol, Warrior, Proaxis or Leverage

may also be effective, depending on past use history, but be aware of their broad-spectrum effects, which can work both for and against you, according to your approach towards conserving beneficial mites and insects.

Oriental Fruit Moth

Biofix across NY this year is more synchronized than usual, occurring mostly during the first week of May around the state; the warmer temperatures forecast for this week will likely accelerate the pattern of emergence in most sites. Use the NEWA Apple Insect Models page to chart current degree day (base 45°F) progress towards the recommended totals of 170 (in peaches) and 350 (in apples) as the timing at which to apply a protective spray. To maximize the efficacy of 1st brood control, peach growers should use one of the suggested options from the Recommends starting at petal fall, backed up 10–14 days later. In apples, in addition to Delegate, Altacor, and Exirel, a number of the petal fall selection of insecticides will do an acceptable job of controlling this generation, including Imidan, the pyrethroids, Intrepid, Assail, Avaunt and Grandevo.

European Red Mite

We haven't actually received any reports of problematic red mite numbers showing up just yet. However, because the prebloom conditions were so transient for allowing applications of oil or even ovicides, it would be prudent to have a look at your rapidly expanding terminal shoots for evidence of hungry motile mites, and consider an early "summer" application of a suitable material to head off problems before they get out ahead of you; it's suitable to use the regular June 2.5/leaf threshold (p. 75 in the Recommends), even though we're over a week away from June 1. There are numerous choices of products available at this time, including the traditionally considered ovicides such as Apollo, Savey and Onager (if not already used this season), as well as Agri-Mek, which can still easily get into the tender leaf tissue to do its work, plus a host of moderate- and quicker-acting maintenance/rescue materials such as Zeal, Kanemite, Nexter, Portal, Acramite, Envidor, and Nealta. Additionally, if you're planning to apply Proclaim for OBLR, you'll get some miticidal activity too. Be aware of seasonal use limits and IRAC rotational considerations with anything you use now.

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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>>