

scaffolds

Update on Pest Management
and Crop Development

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

May 18, 2015

VOLUME 24, No. 8

Geneva, NY

NEW
ENTRIES

ORCHARD
RADAR
DIGEST



Spotted Tentiform Leafminer

1st generation sapfeeding mines start
showing: May 15 (H)/May 20 (G).



[H = Highland; G = Geneva]:

Roundheaded Appletree Borer

RAB egg laying begins: June 2 (H)/June 5 (G).
Peak egg laying period roughly: June 23 to July 7
(H)/June 27 to July 11 (G).

Dogwood Borer

First DWB egg hatch roughly: June 21 (H)/June
25 (G).

Codling Moth

1st generation 3% egg hatch expected: June 9 (H)/
June 12 (G).

Lesser Appleworm

Peak LAW trap catch: May 17 (H)/May 19 (G).

Obliquebanded Leafroller

1st generation OBLR flight, first trap catch ex-
pected: June 4 (H)/June 8 (G).

Oriental Fruit Moth

1st generation 55% egg hatch and first treatment
date, if needed: May 19 (H)/ May 25 (G).

San Jose Scale

First adult SJS caught on trap: May 16 (H)/May
17 (G).

1st generation SJS crawlers appear: June 15 (H)/
June 18 (G).



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DON'T BLINK

NEW YORK MINUTE
(Art Agnello, Entomology,
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❖❖ It doesn't take long for things to see-saw back and forth between being way behind to suddenly back on track to slowing down again, and with the factor of site locality and variability thrown in, it seems we've got trees ranging from still in bloom to fruit approaching thinning size this week, so even a weekly newsletter can't always do justice to the different advice needed in specific places. Nevertheless, we're confident that the "old faithful" insect pests we always look out for at petal fall will continue their progress towards the newly formed fruits, so this overview will help take your mind off the current fluxes in the weather and make preparations for when things heat up again.

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 is occurring recently and may recur later 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 use an oviposition model to determine 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 corresponds 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. We'll attempt to give

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local updates for the major fruit areas as the post-PF period progresses. 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, 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, Calypso (if you still have it), 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 this pest, but should not be considered as the first choices in high-pressure blocks.

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. (or beyond). The adult sawfly emerges about the time apple trees come into bloom and lays eggs in the apple blossoms. 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. Following this feeding, 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 -- Calypso, 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. To minimize the hazard to honey bees, apply any pesticide 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 Dipel, Deliver, Agree, Biobit 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 Belt all offer very good efficacy against not only OBLR, but also the internal 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 to conserving beneficial mites and insects.

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Oriental Fruit Moth

Biofix is spread out across NY again this year, ranging from April 30 in the Hudson Valley to around May 5 in Geneva and Wayne Co.; cooler temperatures forecast for this week will likely continue the indistinct 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 Belt, 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, if available, Calypso.

European Red Mite

Maybe just because this season is already so atypical, we've already received reports of problematic red mite numbers showing up in a number of orchards, particularly in the Hudson Valley. Irrespective of whatever early season program you might have applied already, 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. 73 in the Recommends), even though we're 2 weeks 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, and Envidor. Additionally, if you're already applying 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. ❖❖

ORGANIC APPLE WORKSHOP

EVENT
ANNOUNCEMENT

❖❖ On Wednesday, June 10, NOFA-NY will be joining with Cornell to sponsor a Field Day Workshop entitled "Organic Production: Managing Productivity, Insects, Diseases and Weeds" at the NYSAES Loomis Farm, 3135 County Rd. 6, Geneva, from 1:00–4:30 PM. Presentations by entomologist Arthur Agnello, horticulturists Terence Robinson and Susan Brown, and plant pathologist Kerik Cox will focus on organic orchard practices informed by their ongoing research in the Station's 3-acre organic apple planting. Growth and productivity will be discussed, including new and upcoming disease-resistant varieties, rootstocks, training systems, pruning, weed control options, and nitrogen fertilization. Basic and advanced seasonal management approaches to insect control will be shared such as the use of entomopathogenic nematodes for biological control of plum curculio, and predatory mite seeding for the control of European red mite. The group will also go over organic fire blight management techniques and results from last year's summer disease trials. Registration fees are \$15/person or \$25 for two or more people/farm.

Please pre-register online at: <http://www.event.com/events/organic-apple-production-managing-productivity-insects-disease-and-weeds/event-summary-dd51400a20b0417e89d-847bae3565cf2.aspx>

Pre-registration closes at 4pm on June 8th. [NOTE: This field day is free to Cornell faculty and CCE staff; please sign in at the event, as pre-registration is not necessary.]

This event is produced by NOFA-NY in partnership with the NYS Agricultural Experiment Station and support from the NYS Dept. of Ag & Mkts Specialty Crop Block Grant Program.

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PHENOLOGIES

| | |
|---|------------------------|
| Geneva: | <u>5/25, predicted</u> |
| Apple (McIntosh, Empire): petal fall | fruit set |
| Apple (Red Delicious): 95% petal fall | fruit set |
| Sweet cherry (early): fruit 13mm | |
| Sweet cherry (late): fruit set, shucks off | |
| Peach: petal fall | fruit set |
| Highland: | |
| Apple (McIntosh): fruit set | |
| Apple (Empire, Spur Red Delicious): fruit set | |
| Apple (Ginger Gold): fruit set | |
| Apple (Golden Delicious): fruit set | |
| Pear (Bartlett, Bosc): fruit set | |
| Peach (Early): fruit set, shucks on | |
| Apricot: fruit >10mm | |

INSECT TRAP CATCHES (Number/Trap/Day)

| | Geneva, NY | | | Highland, NY | | |
|-----------------------------|-------------|-------------|-------------|-----------------------------|-------------|------|
| | <u>5/11</u> | <u>5/13</u> | <u>5/18</u> | <u>5/11</u> | <u>5/18</u> | |
| Green fruitworm | 0.5 | 0.0 | 0.0 | Green fruitworm | 0.1 | 0.0 |
| Redbanded leafroller | 17.2 | 5.0 | 3.0 | Redbanded leafroller | 18.9 | 5.1 |
| Spotted tentiform leafminer | 24.3 | 2.5 | 4.5 | Lesser appleworm | 0.0 | 1.1 |
| Oriental fruit moth | 29.8 | 2.8 | 3.0 | Oriental fruit moth | 2.6 | 1.4 |
| Lesser appleworm | 0.5* | 0.6 | 0.5 | Codling moth | 0.4* | 4.7 |
| Codling moth | 0.0 | 0.3* | 1.2 | Spotted tentiform leafminer | 32.4 | 7.7 |
| San Jose scale | 0.0 | 0.0 | 0.0 | San Jose scale | 4.7 | 19.9 |
| American plum borer | 0.0 | 0.0 | 0.1* | Dogwood borer | 0.0 | 0.7 |
| Lesser peachtree borer | 0.0 | 0.0 | 2.1* | | | |

* first catch

PEST FOCUS

Geneva: 1st **lesser peachtree borer** and **American plum borer** trap catch today, 5/18.

UPCOMING PEST EVENTS

| | 43°F | 50°F |
|---|------|------|
| Current DD* accumulations (Geneva 1/1–5/18/15): | 503 | 308 |
| (Geneva 1/1–5/18/2014): | 417 | 226 |
| (Geneva "Normal"): | 501 | 259 |
| (Geneva 1/1–5/25, predicted): | 605 | 371 |
| (Highland 1/1–5/18/15): | 654 | 400 |

| Coming Events: | Ranges (Normal ±StDev): | |
|---|-------------------------|---------|
| Spotted tentiform leafminer 1st flight peak | 267–409 | 123–213 |
| Spotted tentiform leafminer sap-feeders present | 343–601 | 165–317 |
| Lesser appleworm 1st flight peak | 359–781 | 176–448 |
| Mullein bug 90% hatch | 472–610 | 247–323 |
| Mullein bug hatch complete | 508–656 | 264–358 |
| Oriental fruit moth 1st flight peak | 332–540 | 168–288 |
| American plum borer 1st flight peak | 594–966 | 323–585 |
| Codling moth 1st flight peak | 555–983 | 302–580 |
| Plum curculio oviposition scars present | 485–589 | 256–310 |
| Pear psylla hardshell present | 493–643 | 271–361 |
| San Jose scale 1st catch | 435–615 | 218–340 |
| San Jose scale 1st flight peak | 555–739 | 297–415 |
| European red mite 1st summer eggs | 447–555 | 237–309 |
| McIntosh fruit set | 510–598 | 267–327 |

*[all DDs are Baskerville-Emin (B.E.)]

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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