**IN THIS ISSUE…**

**INSECTS**
- Orchard Radar Digest
- Post-Petal fall insects

**GENERAL INFO**
- Cornell Fruit Field Day 2016

**PEST FOCUS**
- Upcoming Pest Events
- Phenologies

---

**BEAT THE CROWD**

**ORCHARD RADAR DIGEST**

**Geneva Predictions:**

**Roundheaded Appletree Borer**
RAB egglaying begins: June 8. Peak egglaying period roughly: June 27 to July 11. First RAB eggs hatch roughly: June 23.

**Dogwood Borer**
First DWB egg hatch roughly: June 24.

**Codling Moth**
Codling moth development as of May 23: 1st generation adult emergence at 1% and 1st generation egg hatch at 0%
1st generation 3% egg hatch expected: June 8 (= target date for first spray where multiple sprays needed to control 1st generation CM).

**Lesser Appleworm**
Peak LAW trap catch: May 27.

**Obliquebanded Leafroller**
1st generation OBLR flight, first trap catch expected: June 10.

**Oriental Fruit Moth**
1st generation 55% egg hatch and first treatment date, if needed: May 30.

**San Jose Scale**
First adult SJS caught on trap: May 25. 1st generation SJS crawlers appear: June 20.

---

**PEST FOCUS**

**Geneva:**
- Codling Moth 1st trap catch, 5/20.
- Lesser Appleworm 1st trap catch today, 5/23.

**Highland:**
- Plum curculio injury noted in untreated Ginger Gold (2%) and Red Delicious (8%).
- Pear Psylla 2nd generation increase in Bartlett.
- Codling Moth 1st trap catch recorded today (traps set May 18).
- Obliquebanded Leafroller 1st trap catch recorded today (traps set May 18).

---

**Spotted Tentiform Leafminer**
1st generation sapfeeding mines start showing: May 27.
Optimum sample date is around May 28.
Like most regular biological events, insect development responds positively to warmer conditions, so anticipating that this week's forecast of 80-plus degree weather will provide the needed push, pest management decisions for most major will tend to need addressing on a fairly predictable schedule. Although this week's temperatures probably won't translate into a lot of management decisions having to be made all at once, the following is a long-view update of some of the traditional crop protection scenarios during this period. Dates in parentheses, where present, are the mean date of occurrence in Geneva, according to our recent records.

Plum Curculio (May 25 - scars present)
Curcs have only so much egg-laying activity programmed into their behavior, and it's directly related to the temperature. The warmer the post-petal fall period is, the quicker they finish, so the long-term forecast will be instrumental in determining how many cover sprays might be needed after petal fall to adequately protect the region's orchards until the ovipositing is finished. Most orchards probably will have received their petal fall spray this week. We should just begin to notice a few instances of injury from this pest in western NY, and the Apple IPM Insect Models Website (http://newa.nrcc.cornell.edu/newaModel/apple_pest) puts curculios just barely into their egg-laying activity. For apples, if you additionally have Rosy Apple Aphid colonies active in your trees, consider using Actara now, which has good activity against both species.

European Apple Sawfly
Traditionally confined to the eastern half of the state, but steadily making westward prog-
ress in recent years, the adults start laying eggs on or near newly set fruitlets at petal fall, so the plum curculio applications will do double duty against this pest as well.

Obliquebanded Leafroller (June 9)
We have yet to catch the first obliquebanded leafroller adult in western N.Y., but this has already occurred in the Hudson Valley as populations there are usually at least a week ahead of us, so don't be surprised to begin seeing them in the near future. Depending on the location, larvae should be able to be found now in various stages of development. This week would therefore be an advisable time to be sure a pheromone trap is hung in problem apple blocks, to fix the date of first emergence in your specific area. Recall that we recommend sampling at 600 DD (base 43°F) after the first adult catch, to determine the need and timing for treatment. For problem orchards with a reliable OBLR history where sampling is generally not needed, egg hatch (which equates to the first occurrence of susceptible larvae) occurs more or less 350 DD after the 1st adult catch. It pays to keep an eye on the daily highs and lows for your area if
you are doing your own trapping, as it's likely that our "normal" first sampling date of July 5 won't turn out to be necessarily appropriate this year; once again, the Apple IPM Insect Models Website can help you zero in on these events in your specific area. In orchards not too removed from petal fall and containing large larvae, an application of Intrepid, Proclaim, Rimon, or a B.t. product (e.g., Agree, Dipel, Deliver) at this time will help diminish the population for better management during the summer. Although Altacor, Belt, Delegate, or Exirel are also very effective against OBLR, it would be advisable to save these big guns for the summer generation larvae, which are more of a direct threat to the developing fruits.

**Stone Fruit Aphids**

Although green peach aphids are not always a serious pest every year, colonies of these greenish, smooth-looking aphids are likely to occur in peach blocks during this period, along with their damage, which causes curled leaves that may turn yellow or red in severe cases. The young aphids begin to hatch about the time of peach bloom and remain on the trees for 2–3 generations, until early summer, when they seek other hosts (mainly vegetable truck crops). Green peach aphids suck the sap from the new fruits and twigs, and are also found on plum, apricot, cherry, and many ornamental shrubs. These insects are difficult to control; the recommended options, where needed, include Actara, Admire, Assail, Belleaf, and Movento. Lannate is an alternative, but possibly less effective choice. Applications are recommended before excessive leaf curling occurs, in order to maximize the spray’s effectiveness. Also, keep an eye out for black cherry aphid in your cherry trees after shuck fall. If colonies are building up on the foliage, recommended materials include Admire, Assail, Belleaf, Lorsban, Movento, Sevin, and pyrethrins such as Asana, and Baythroid. Pre-mixes labeled for this use include Endigo, Leverage, Voliam Flexi and Voliam Xpress.

**Cherry Fruit Flies (June 16)**

It's too early for catches of adults on sticky board traps, but because of the zero tolerance in cherries for insect damage or presence, it's prudent to begin sprays in your cherries soon after shuck split (for this pest as well as for curculio). Imidan (tart cherries only), Sevin, Diazinon, Assail, Actara, Delegate or the pyrethrins are all effective treatments. Sevin will also control black cherry aphid.

**Lesser Peachtree Borer (May 24)**

The first adults should be caught in Geneva any day now. Remember to get your trunk and scaffold sprays on peaches and cherries during the next couple of weeks if borers are a problem in your blocks and you are electing this approach. A better and effective alternative is Isomate-PTB Dual for pheromone disruption. Now is a good time to think about hanging the ties (150–250/acre will disrupt both species -- Peacbtree Borer appears about mid-June in our region; use the higher rate where pressure is more severe). This pest increases the severity of Cytospora canker infections in peaches and is often found within the canker; by feeding in the callous tissues, it interferes with the tree's natural defenses against the disease. Infestations can be determined by the presence of the insect's frass, which resembles sawdust, in the gum exuded from the wound. In peaches, you can use Ambush, Asana, Baythroid, Lorsban (all formulations), Pounce, Voliam Xpress or Warrior for this application (or pre-mixes such as Endigo, Gladiator, Leverage, or Voliam Xpress). In cherries, use Ambush, Asana, Baythroid, [Lorsban (tarts only), as a trunk spray ONLY; do not spray the fruit], Pounce, Warrior, Endigo, Gladiator or Voliam Xpress, and observe the proper PHIs for these respective continued...
materials. Check the labels of all products for the recommended target area, where applicable (trunk vs. foliar).

**European Red Mite**

Mite populations should already be starting to build this season, and adults may already be present, which means that they'll be laying summer eggs that will hatch into potential problems before long. We did not have much favorable pre-bloom weather for early season oil or miticide applications this year; if you failed to take advantage of any opportunities that did occur before bloom, it's not too late to use one of the preventive materials such as Savey/Onager, Apollo, Agri-Mek, Nealta, Portal, or Zeal in problem blocks or where you may have noted ERM eggs.

In situations where European red mite pressure or the crop's sensitivity to them haven't necessarily justified an early season treatment with any of the above options, this is the time of year when a summer oil program also might be considered as an alternate preventive approach, particularly considering this species' slow start during the spring. Our field research trials have shown the effectiveness of using a highly refined oil in a seasonal program to control mites throughout the summer. Some examples of these products are PureSpray Spray Oil 10E, BioCover UL, or PureSpray Green (all from Petro Canada), Stylet-Oil (JMS Flower Farms), and Omni (an ExxonMobil product formulated using Orchex 796 and distributed by Helena); others are available, such as Damoil (Drexel), Saf-T-Side (Brandt Consolidated) and Mite-E-Oil (Helena), although we haven't tested all brands.

Our approach is to make three applications, on a preventive schedule, immediately after the petal fall period, before mite populations have a chance to build. The first application can be any time from petal fall to 1–2 weeks later, followed by two additional sprays at 10–14-day intervals. The oil is not concentrated in the tank, but rather mixed on the basis of a rate per 100 gallons of finish spray solution; in most cases, we recommend 100 gal per acre. A rate of 1–2 gal/100 should maintain control of most moderate populations. Don't apply without leaving at least a 10–14-day interval before or after a captan spray, or an application of any thinning materials.

**San Jose Scale (June 19 - 1st crawlers)**

Minute SJS adult males emerge in the spring from beneath scale covers on the trees, usually following petal fall, and mate; 1st catch began last week in the Hudson Valley, and should occur in Geneva any day now. The females produce live crawlers within 4–6 weeks of mating; these make their way to new sites and insert their mouthparts into the tree, secreting a white waxy covering that eventually darkens to black. SJS infestations on the bark contribute to an overall decline in tree vigor, growth, and productivity. Fruit feeding causes distinct red-purple spots that decrease the cosmetic appeal of the fruit. Insecticidal sprays are most effective when directed against the first generation crawlers, specifically timed for the first and peak crawler activity, which are usually 7–10 days apart.

In the Geneva area, first crawler emergence has tended to occur sometime around mid-June. If and when a treatment against this stage is needed, Esteem 35WP is one option. It should be applied at 4-5 oz/acre at first crawler emergence; a low rate (0.25% or 1 qt/100) of a highly refined summer oil (see above) has been shown to improve penetration and, therefore, control. Additional products showing control efficacy include Assail, Centaur (except Nassau and Suffolk Counties) and Movento (which must be mixed with an organosilicone or non-ionic spray adjuvant). Other options include...
Imidan, Admire, or pre-mixes such as Endigo, Leverage, or Voliam Xpress. These applications will also be effective against White Prunica Scale, which has gotten to be increasingly common in our area, in apples as well as peaches.

**Oriental Fruit Moth (May 2)**

We're generally calling biofix May 11 in western NY this year. In problem blocks (i.e., those with a history of more than 1–2% fruit infestation over the past 10 years), the first spray against the first larval brood in apples is recommended at 350–375 DD (base 45°F) from biofix, which corresponds with 55–60% hatch. The records as of today show the DD accumulation in Geneva to be 216 (May 2 biofix), and 324 DD for the Highland Lab (April 25 biofix). This would put us very near the window in both locations for a timely treatment in apples. If you need something specific against OFM in your petal fall sprays, Altacor, Assail, Avaunt, Belt, Delegate, Exirel, Intrepid, and Rimon are recommended options in apples, and Altacor, Assail, Belt, Delegate, Exirel, Asana, Danitol or Warrior in peaches.

**Pear Psylla**

These insects have also been making steady progress, and the gradually warming temperatures will eventually result in the production of summer nymphs. Particularly if you weren't able to get an oil spray on before bloom, populations of 1–2 per leaf would be an indication of the need for a prudent application of Agri-Mek at this time; alternatively, Actara, Asana, Assail, Centaur, Danitol, Delegate, Esteem, Movento, Nectar, Portal, Proclaim, Provado, and Warrior also have varying degrees of effectiveness against this pest, usually negatively correlated with frequency of past use.

---

**CORNELL AND CCE EMPLOYEES** get free admission, but please pre-register using the same link; there's a [Cornell Staff](http://events.cals.cornell.edu/ffd2016) tab at the top of the home page, which will take you to a page to pre-register and select a 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](http://www.ifruittree.org)
PHENOLOGIES

Geneva:
Apple (McIntosh): fruit set
Apple (Empire/Red Delicious): fruit set
Pear (Bartlett/Bosc): fruit set
Sweet Cherry (early): fruit set
Sweet Cherry (late): fruit set
Tart Cherry: fruit set
Plum: fruit set

Highland:
Apple
(McIntosh): 14.5-17 mm
(Red Delicious): 12-14.5 mm
(Ginger Gold): 8.5-14.5 mm
(Golden Delicious): 12-20 mm
Pear
(Bartlett): 10.25-19.5 mm
(Bosc): 9.25-17.25 mm
Peach (early): petal fall-shucks off
Peach (late): petal fall-shucks off

UPCOMING PEST EVENTS

Current DD accumulations (Geneva 1/1–5/16/23): 476.8 219.7
(Geneva 1/1–5/23/2015): 568.7 347.6
(Geneva “Normal”): 564.9 309.5
(Geneva 1/1-5/30, predicted): 667.3 361.2
(Highland 1/1–5/23/16): 787.9 389.5

Coming Events:
American plum borer 1st catch 390-516 194-284
American plum borer 1st flight peak 594-966 323-585
Codling moth 1st flight peak 557-977 306-578
European red mite 1st summer eggs 447-555 237-309
Lesser appleworm 1st flight peak 354-772 176-442
Lesser peachtree borer 1st adult catch 480-676 253-375
Mirid bugs hatch complete 508-656 264-358
Obliquebanded leafroller pupae present 601-821 328-482
Oriental fruit moth 1st flight peak 331-537 168-286
Pear psylla hardshells present 493-643 271-361
Plum curculio oviposition scars present 485-589 256-310
Redbanded leafroller 1st flight subsides 598-894 336-558
San Jose scale 1st adult catch 435-615 218-340
San Jose scale 1st flight peak 555-739 297-415
Spotted tentiform leafminer mines present 367-641 170-342
White apple leafhopper nymphs on apple 302-560 146-308

all DDs 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.

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.

### INSECT TRAP CATCHES
(Number/Trap)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Green Fruitworm</td>
<td>3.0</td>
<td>0.5</td>
<td>0.0</td>
<td>Green Fruitworm</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Redbanded leafroller</td>
<td>21.0</td>
<td>19.5</td>
<td>26.5</td>
<td>Redbanded leafroller</td>
<td>19.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Spotted Tentiform Leafminer</td>
<td>18.0</td>
<td>20.5</td>
<td>36.0</td>
<td>Spotted Tentiform Leafminer</td>
<td>25.5</td>
<td>17.5</td>
</tr>
<tr>
<td>Oriental Fruit Moth</td>
<td>19.5</td>
<td>11.0</td>
<td>31.5</td>
<td>Oriental Fruit Moth</td>
<td>24.5</td>
<td>4.5</td>
</tr>
<tr>
<td>San Jose Scale</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>Lesser Appleworm</td>
<td>17.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Codling Moth</td>
<td>0.0</td>
<td>0.5*</td>
<td>2.5</td>
<td>San Jose Scale</td>
<td>513.5*</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Codling Moth</td>
<td>-</td>
<td>35.0*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Obliquebanded Leafroller</td>
<td>-</td>
<td>0.5*</td>
</tr>
</tbody>
</table>

* = 1st catch