SCAFFOLDS Fruit Journal, Geneva, NY
Volume 23, No. 9
Update on Pest Management and Crop Development
May 19, 2014

COMING EVENTS

	43°F	50°F
Current DD accumulations		
(Geneva 1/1-5/12):	424	230
(Geneva 1/1-5/12/2013):	442	241
(Geneva "Normal"):	512	265
(Geneva 1/1-5/19/14, predicted):	561	313
(Highland 1/1-5/12/14):	595	322

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

American plum borer 1st catch	392-494	195-265
Codling moth 1st catch	398-572	200-310
Comstock mealybug		
crawlers in pear buds	215-441	80-254
European red mite		
1st summer eggs	447-555	237-309
Green fruitworm flight subsides	255-457	117-243
Lesser appleworm 1st catch	263-561	121-303
Lesser peachtree borer 1st catch...	480-680	251-377
Mullein plant bug 50% hatch	429-473	208-262
Mullein plant bug 90% hatch	472-610	247-323

Mullein plant bug		
hatch complete	508-656	264-358
Oriental fruit moth 1st flight peak .	338-544	170-290
Pear psylla hardshells present	493-643	271-361
Plum curculio		
oviposition scars present	485-589	256-310
Redbanded leafroller		
1st flight peak.....	228-366	103-187
San Jose scale 1st catch	433-615	217-339
Spotted tentiform leafminer		
1st flight peak.....	265-401	123-207
McIntosh at petal fall.....	446-522	230-280
McIntosh at fruit set	508-598	267-325

Phenologies 5/27 (Geneva):	Current	Predicted
Apple (McIntosh, Empire):	25% petal fall	fruit set
Apple (Red Delicious):	bloom	petal fall-fruit set
Sweet cherry (early):	fruit set, shucks off	
Sweet cherry (late):	petal fall	
Peach:	petal fall	fruit set
Plum (early):	fruit set, shucks on	
Plum (late):	petal fall	

(Highland):

Apple:	petal fall
Pear (Bartlett, Bosc):	petal fall
Apricot (Early):	fruit set, shucks on
Apricot (Late):	fruit set, shucks on
Cherry (Early):	petal fall
Cherry (Late):	petal fall
Peach (early):	petal fall
Peach (late):	petal fall
Plum (Stanley):	petal fall

Pest Focus

Geneva:	Brown Marmorated Stink Bug 1st catch, 5/13.
Highland:	1st Codling Moth catch today, 5/19.

TRAP CATCHES (Number/trap/day)

Geneva

	5/5	5/8	5/12	5/19
Green fruitworm	0.1	0.0	0.1	0.0
Redbanded Leafroller	3.4	2.5	6.5	5.1
Spotted Tentiform Leafminer	0.0	3.7*	26	23.6
Oriental Fruit Moth	0.0	0.2*	15.4	4.1
Codling Moth	0.0	0.0	0.0	0.0

Highland (Peter Jentsch)

	4/28	5/5	5/12	5/19
Green fruitworm	0.5	0.1	0.0	0.0
Redbanded Leafroller	16.1	18.9	15.8	5.6
Spotted Tentiform Leafminer	4.5	12.3	30.0	10.2
Oriental Fruit Moth	0.1*	1.1	12.6	3.9
Lesser Appleworm	-	-	1.0*	0.8
Brown Marmorated Stink Bug	-	-	1.0*	0.0
Variegated Leafroller	-	-	0.0	0.2
Tufted Apple Bud Moth	-	-	0.0	0.0
Codling Moth	-	-	-	1.0*

* = 1st catch

ORCHARD RADAR DIGEST

[Box Text: MACRO BURST]

We've gotten the kinks sorted out of this year's Orchard Radar operation; as a slight correction to the May 5 issue, the "regular" (open to the public) Orchard Radar sites, which are located in the New England States, can be found at: http://extension.umaine.edu/ipm/programs/apple/pestcasts/

For Geneva and Highland, we will print predictions for the some of the more important pests, as follows:

[H = Highland; G = Geneva]:

Roundheaded Appletree Borer

RAB egglaying begins: June 5 (H)/June 9 (G);. Peak egglaying period roughly: June 24 to July 18 (H)/June 28 to July 12 (G).

Dogwood Borer

First DWB egg hatch roughly: June 24 (H)/June 28 (G).

Codling Moth

1st generation, first sustained trap catch biofix date: May 18 (H). Codling moth development as of May 18: 1st generation adult emergence at 1% and 1st generation egg hatch at 0%.

Lesser Appleworm

1st generation LAW peak trap catch: May 23 (H)/May 26 (G).

Mullein Plant Bug

Expected 50% egg hatch date: May 16 (H)/May 19 (G), which is 6 days before rough estimate of Red Delicious petal fall date.

Most accurate time for limb tapping counts, or treatment if needed, but possibly after some MPB damage has occurred, is 90% egg hatch date: May 21 (H)/May 24 (G).

Obliquebanded Leafroller

1st generation OBLR flight, first trap catch expected: June 8 (H)/June 11 (G).

Oriental Fruit Moth

1st generation 55% egg hatch and first treatment date, if needed: May 24 (H)/June 1 (G).

San Jose Scale

First adult SJS caught on trap: May 21 (H)/May 24 (G).

1st generation SJS crawlers appear: June 18 (H)/June 21 (G).

Spotted Tentiform Leafminer

1st generation sapfeeding mines start showing: May 22 (H)/May 25 (G). Optimum sample date is around May 23 (H)/May 26 (G), when a larger portion of the mines are visible.

White Apple Leafhopper

1st generation WALH found on apple foliage: May 1 (H)/May 16 (G).

[Section: INSECTS]

THE PROMISE OF PETAL FALL

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

[Box text: GET READY, GET SET!]

Although our brief stretch of warm spring weather was abruptly interrupted by the cool rainy cell moving through our area last week, the temperatures will rebound in a couple of days, and 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 chill in the air 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 will recur 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 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, 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 a pest mainly in eastern N.Y., although it has been gradually making its presence known in the more western sites, recently progressing 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 newer insecticides with activity against both plum curculio and sawfly -- Calypso, Avaunt and Actara -- may have a slight advantage over conventional OPs 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 has 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.

Oriental Fruit Moth

Biofix is spread out across NY again this year, ranging from April 28 in the Hudson Valley to May 8-9 in Geneva and Wayne Co., and other sites yet to record any moth captures; moderate 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 the OPs, pyrethroids, Intrepid, Assail, Avaunt, and Calypso.

[Section: CHEM NEWS]

ASANA XL 2(ee) REGISTRATION

The New York State Department of Environmental Conservation has approved a 2(ee) recommendation for the use of DuPont Asana XL Insecticide (EPA Reg.

No. 352-515) on apple, pear, and stone fruits against the unlabeled pest spotted wing drosophila. A copy of the approved 2(ee) has been posted to the PMEP website at: http://pmep.cce.cornell.edu/regulation/2ee/unlabeled_pest/index.html under apple, pear, and stone fruits, and is also available on PIMS at: http://pmep.cce.cornell.edu/profiles/insect-mite/ddt-famphur/esfenvalerate/asana_2ee_0414.pdf Users must have a copy of the 2(ee) and the primary product label in their possession at the time of application.

MADEX HP LABELED IN NYS

The New York State Department of Environmental Conservation has approved the labeling of Madex HP (EPA Reg. No. 69553-1) from Certis USA, for use in controlling codling moth and oriental fruit moth in NYS pome and stone fruit crops. The active ingredient, *Cydia pomonella* granulosis virus isolate V22, has activity against both of these tortricid pest species, is OMRI approved for use in organic production, and is harmless to natural enemies and other non-target organisms. Application should target the 5% egg hatch

point of each generation of OFM and CM, and can be applied on a 7-day interval. It has a 4-hr REI and no PHI.

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.

Scaffolds is published weekly from March to September by Cornell University -- NYS Agricultural Experiment Station (Geneva), and Ithaca -- with the assistance of Cornell Cooperative Extension. New York field reports welcomed. Send submissions by 2 p.m. Monday to:

Scaffolds Fruit Journal
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