

scaffolds

Update on Pest Management
and Crop Development

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

April 26, 2010

VOLUME 19, No. 6

Geneva, NY

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EARLY
ARRIVALS

ORCHARD
RADAR
DIGEST



Oriental Fruit Moth

1st generation - 55% egg hatch and first treatment date, if needed: May 26.

San Jose Scale

First adult SJS caught on trap: May 10.

Spotted Tentiform Leafminer

1st STLM flight, peak trap catch: April 29.

1st generation sapfeeding mines start showing: May 14.

Optimum sample date is around May 16, when a larger portion of the mines have become detectable.

Roundheaded Appletree Borer

RAB adult emergence begins: May 25;

Peak emergence: June 10.

RAB egg laying begins: June 5. Peak egg laying period roughly: June 26 to July 11.

Codling Moth

1st generation 3% CM egg hatch: June 6 (= target date for first spray where multiple sprays needed to control 1st generation CM).

1st generation 20% CM egg hatch: June 14 (= target date where one spray needed to control 1st generation codling moth).

White Apple Leafhopper

1st generation WALH found on apple foliage: May 5.

Lesser Appleworm

1st LAW flight, 1st trap catch: May 2.

Mullein Plant Bug

Expected 50% egg hatch date: May 10, which is 7 days before rough estimate of Red Delicious petal fall date.

The most accurate time for limb tapping counts, but possibly after MPB damage has occurred, is when 90% of eggs have hatched.

90% egg hatch date: May 16.

Obliquebanded Leafroller

1st generation OBLR flight, first trap catch expected: June 6.

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GETS
THE
BIRD

THE EARLY WORM
(Art Agnello, Entomology,
Geneva)

❖❖ We're not even finished with April yet, but it looks like we're already having to confront the impending petal fall segment of the season, at least in some varieties and in some areas of the state. Trees are in a variety of developmental stages right now, more or less centered around the pink-to-bloom state, but the cooler temps we've seen over the past few days are due to move upwards again soon, so there's just a bit of breathing room now for us to consider some of the more significant pest management decisions to keep in mind during this part of the season.

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 neces-

sary 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.

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(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 is no longer labeled for this use in apples (unless you are using product purchased before this year); 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.

Bear in mind that, owing to the warmer temperatures we saw in late April, PC adults (and for that matter, also European apple sawfly, below) are likely to be in most orchards already, waiting for the appearance of suitable fruitlets to attack. This will underscore the importance of timely petal fall applications, which may be more complicated in mixed variety plantings.

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 the 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).

Mites

If you applied oil or a miticide during the pre-bloom mite control window this season, you're in good shape. If not, and you are concerned about early buildup in certain problem blocks, Agri-Mek, Apollo, Savey/Onager and Zeal are all appropriate choices to consider at petal fall. Because of the cool temperatures (particularly at night) that can still occur, nymphal populations are likely to be small enough to be effectively handled by any one of these materials, if they fit into your product rotation schedule (i.e., if they weren't used last year).

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Obliquebanded Leafroller

Larvae overwintering as 1st or 2nd stage caterpillars may have had the ability to take advantage of some of our earlier warm weather to feed and grow into a respectable size, although I have to say that we haven't actually seen many up to this point, so most are likely still relatively small. It would be prudent to have a quick look for late-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, Bio-bit 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 and Altacor, both relatively new on the scene, both offer very good efficacy against not only OBLR, but also the internal leps (below). 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 how many beneficial mites and insects you can afford to lose.

Oriental Fruit Moth

Biofix has been variably spread out across NY, as usual, spanning the period from early April in the Hudson Valley to last week in western NY, and trap numbers are still idling until the temperatures warm again. Current degree day (base 45°F) readings are somewhere in the low 20s-30s towards the recommended totals of 170 (in peaches) and 350 (in apples) as the timing at which to start a protective spray program. To maximize the efficacy of 1st brood control, peach growers in western N.Y.

should use one of the suggested OP or pyrethroid options from the Recommends starting at petal fall, backed up 10–14 days later. In apples, in addition to the newly available Delegate and Altacor, 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.

White Apple Leafhopper

We haven't spotted any yet, but WALH nymphs can be numerous in some blocks at petal fall, especially in the eastern part of the state. Nymphal populations of 1 or more per leaf can result in stippling damage to the leaves. Provado, Actara, Avaunt, Assail and Calypso have proven to be effective against this pest, and a petal fall application of any of these materials also gives leafminer control. Rosy apple aphids can similarly be cleaned up with this strategy (for most of the above; not so well with Avaunt), although petal fall is often too late to prevent fruit damage that their feeding may have caused. Growers using Sevin in their thinning sprays will get some WALH control at the 1 lb rate. Alternative choices include Thionex, Lannate, and the pyrethroids; Agri-Mek or Carzol used for mites now will also do the job, although Carzol will be harmful to predator mites. ❖❖

WHAT'S YOUR 20?

ANOTHER COUNTY HEARD FROM

(Art Agnello,
Entomology, Geneva)

❖❖ Starting today, we will be presenting the trap data from a number of our field research plots set up in different NY production regions, as a means of keeping tabs on insect activity around the state.

April 22-23, Avg No./trap

<u>Location/County</u>	<u>STLM</u>	<u>OFM</u>	<u>LAW</u>
Lyndonville/Orleans	16.3	0.3	0.0
Waterport/Orleans	33.3	4.3	0.0
Hilton/Monroe	1485	0.0	0.0
Lincoln/Wayne	13.3	0.3	0.0
Sodus-Lakesite/Wayne	13.0	0.3	0.0
Sodus-Inland/Wayne	5.3	0.3	0.0
Alton/Wayne	45.3	0.0	0.0
Wolcott/Wayne	1.0	0.0	0.0
Lafayette/Onondaga	38.7	0.0	0.0



PHENOLOGIES

Geneva:

	<u>4/26</u>	<u>5/3 (Predicted)</u>
Apple(McIntosh):	50 % king bloom	bloom
Apple(Red Delicious):	10% king bloom	king bloom
Apple(Empire):	bloom	bloom
Pear:	bloom	petal fall
Sweet cherry:	10% petal fall	petal fall
Tart cherry	bloom	petal fall
Plum:	10% petal fall	petal fall
Peach:	10% petal fall	petal fall

Highland:

Apple (Ginger Gold):	petal fall–fruit set
Apple (McIntosh):	petal fall
Apple (Red Delicious, Golden Delicious):	early petal fall
Pear (Bartlett/Bosc):	fruit set
Peach (early):	shucks 10% off
Peach (late):	shucks on
Plum (Italian/Stanley):	shucks on
Apricot:	shucks off
Sweet cherry (Attica):	fruit set

INSECT TRAP CATCHES (Number/Trap/Day)

	Geneva, NY			Highland, NY		
	<u>4/19</u>	<u>4/22</u>	<u>4/26</u>		<u>4/20</u>	<u>4/26</u>
Redbanded leafroller	1.2	4.5	3.0	Redbanded leafroller	11.4	10.6
Spotted tentiform leafminer	0.2	3.0	8.8	Spotted tentiform leafminer	68.2	72.8
Oriental fruit moth	0.3	8.5	0.9	Oriental fruit moth	3.6	13.6
Lesser appleworm	–	0.0	0.0	Lesser appleworm	0.0	0.0
American plum borer	–	0.0	0.0			
* first catch						

UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1–4/26/10):	333	170
(Geneva 1/1–4/26/2009):	209	90
(Geneva "Normal"):	226	101
(Geneva 1/1–5/3 predicted):	403	207
(Highland 3/1–4/26/10):	456	238
<u>Coming Events:</u>	<u>Ranges (Normal ±StDev):</u>	
Green fruitworm flight subsides	246–456	111–241
Redbanded leafroller 1st flight peak	231–367	104–188
Spotted tentiform leafminer 1st flight peak	263–387	121–199
Spotted tentiform leafminer sap-feeders present	343–601	165–317
Comstock mealybug 1st gen. crawlers in pear	215–441	80–254
European red mite egg hatch	231–337	100–168
Rose leafhopper nymphs on multiflora rose	239–397	96–198
Lesser appleworm 1st catch	260–538	119–287
Mirid bugs 1st hatch	331–443	163–229
American plum borer 1st catch	389–487	190–262
Codling moth 1st catch	399–579	200–314
Oriental fruit moth 1st flight peak	348–542	176–288
McIntosh at bloom	349–419	171–219

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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