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Update on Pest Management  
and Crop Development

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

May 15, 2006

VOLUME 15, No. 9

Geneva, NY

WEATHER  
THOU  
GOEST

ORCHARD  
RADAR  
DIGEST



### Oriental Fruit Moth

Optimum 1st generation second treatment date, if needed: June 1.

### San Jose Scale

First adult SJS caught on trap: May 19.

### Spotted Tentiform Leafminer

1st generation sapfeeding mines start showing: May 23.

Optimum sample date is around May 26, when a larger portion of the mines have become detectable.

### White Apple Leafhopper

1st generation WALH found on apple foliage: May 14.

### Geneva Predictions:

#### Roundheaded Appletree Borer

RAB adult emergence begins: June 2; Peak emergence: June 17.

RAB egg laying begins: June 12. Peak egg laying period roughly: June 1 to July 16.

#### Codling Moth

1st generation 3% CM egg hatch: June 13 (= target date for first spray where multiple sprays needed to control 1st generation CM).

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

#### Lesser Appleworm

1st LAW flight, peak trap catch: May 24.

#### Mullein Plant Bug

Expected 50% egg hatch date: May 14, which is 12 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 25.

#### Obliquebanded Leafroller

1st generation OBLR flight, first trap catch expected: June 13.



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## BEFORE THE FALL

### PETALS TO THE METTLE

(Art Agnello, Entomology,  
Geneva)

❖❖ The freight train of warm temperatures that carried us into such a memorable and early bloom has slowed up a bit, and most of the state's apple crop has probably been made by now because of very favorable pollination weather. How long the blossoms hang on the trees is dependent on this week's weather, which looks fairly changeable, but with petal fall not far from view, here are some of the more significant pest management decisions to keep in mind.

#### 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. Adult females oviposit in fruit during both day and night but feed mostly at night. Depending on temperature, overwintering adults remain active for two to six 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 greatly affected by temperature, an oviposition model has been developed 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 control sprays after petal fall only need to be maintained on fruit and foliage until PC adults

stop immigrating into orchards, which corresponds with 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. Probably, this strategy works because, after 40% of PC oviposition is complete, adults usually are not moving into the orchard from outside sources, or moving around 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 (base 50°F). (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. Note that, in addition to previously labeled products, recent registration decisions have resulted in some additional choices you may want to consider this

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#### scaffolds

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season: Lorsban 75WG can now be used at petal fall in apples (as well as tart cherries), and Calypso is labeled for plum curculio in apples and pears.

### 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 slowly making its presence known in the more western sites, progressing even as far as Wayne Co. 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 these pests 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 recently registered insecticides with activity against both plum curculio and sawfly — Calypso, Avaunt and Actara — may have a slight advantage over conventional OPs in this case. Calypso is considered safe to honey bees; Avaunt and Actara, although highly toxic to bees exposed to direct treatment, are relatively non-toxic when dried. Another recently registered product, Assail, gives yet 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. As mentioned in a previous article, Assail can be applied during bloom, which may give it the chance to persist into the period when newly set fruitlets are first susceptible to injury. 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 our ample prebloom 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 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., they weren't used last year).

### Obliquebanded Leafroller

Because these insects overwintered as 1st or 2nd stage larvae, they probably have taken advantage of some of our earlier warm weather to feed and grow into good-sized caterpillars, although I have to say that they haven't been especially numerous or sizeable up to this point. 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 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 and Javelin. Pyrethroids such as Asana, Danitol, Warrior or Proaxis can also be effective, depending on past use history, but be

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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. Another new/old product to consider this year is Lorsban 75WG, which had been the last of the 'unconventional' OPs to retain efficacy against OBLR when it was available for summer use. Now that it is registered for use in apples (and tart cherries) at petal fall, populations may be susceptible to this a.i. as a good rotational option.

### Oriental Fruit Moth

Biofix generally occurred around April 29 to May 3 in western NY, and trap numbers are particularly high this spring. Current degree day readings total somewhere between 120–190 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 at petal fall, backed up 10–14 days later. In apples, a number of the petal fall selection of insecticides will do an acceptable job of controlling this generation, including the OP's, pyrethroids, Intrepid, Assail, 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 all of the above except 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 and Lannate; Agri-Mek or Carzol used for mites now will also do the job, although Carzol will be harmful to predator mites. ❖❖

## IN THE BAG

A  
TENTS  
MOMENT  
(Art Agnello, Entomology,  
Geneva)

❖❖ Populations of Eastern tent caterpillar are very numerous this spring, particularly in the eastern part of the state, so you should be aware that this insect could show up in your orchard (or adjacent wooded areas) if it isn't there already. Infestations are noticeable as large, thick webs containing many hairy brown caterpillars (with a yellow line down their back) occurring in the forks and crotches of fruit and shade trees during the spring. Leaves may be completely eaten on all the branches within a few feet of these nests, which can be found on many trees, including wild cherry, apple, peach, plum, and a number of non-fruit trees such as beech, birch, oak, willow and poplar. They can nearly defoliate smaller trees when populations are high.

Physical control of the colonies is possible by removal of the webs and larvae from the tree; remove egg masses when detected while pruning. Localized intervention is recommended on the most severely infested trees. Economic infestations can be controlled by the use of selective (such as B.t.) or broad-spectrum insecticides. ❖❖

## PEST FOCUS

Geneva:

**American plum borer** 1st catch on 5/11. **Lesser peachtree borer** 1st catch today.

Highland:

**Lesser appleworm, tufted apple bud moth** and **lesser peachtree borer** 1st trap catch. **Codling moth** sustained flight under way. **Pear psylla** 2nd generation adults and new eggs observed in pears.

## INSECT TRAP CATCHES (Number/Trap/Day)

### Geneva, NY

### Highland, NY

	<u>5/8</u>	<u>5/11</u>	<u>5/15</u>		<u>5/8</u>	<u>5/15</u>
Redbanded leafroller	2.6	3.5	1.6	Spotted tentiform leafminer	36.3	6.4
Spotted tentiform leafminer	24.1	32.5	9.9	Oriental fruit moth	5.3	3.4
Lesser appleworm	0.0	0.0	0.0	Codling moth	0.0	0.2
Oriental fruit moth	0.6	0.3	0.1	Obliquebanded leafroller	0.0	0.0
Codling moth	—	—	0.0	Fruit tree leafroller	0.0	0.0
San Jose scale	—	—	0.0	Tufted apple budmoth	0.0	0.1*
American plum borer	0.0	0.7*	0.6	Variiegated leafroller	0.0	0.0
Lesser peachtree borer	—	—	0.4*	Lesser peachtree borer	0.0	0.1*
				Dogwood borer	0.0	0.0
				Lesser appleworm	0.0	0.4*

\* first catch

## PHENOLOGIES

### Geneva:

	<u>5/15</u>	<u>5/22 (Predicted)</u>
Apple(McIntosh):	75% petal fall	fruit set
Apple(Red Delicious):	25% petal fall	fruit set
Apple(Empire):	75% petal fall	fruit set
Pear:	fruit set	—
Sweet cherry:	fruit set, shucks off	—
Tart cherry	fruit set, shucks on	—
Plum:	fruit set, shucks on	—
Peach:	petal fall	fruit set, shucks off

### Highland:

Apple(McIntosh):	fruit set
Apple(Red Delicious):	fruit set
Apple(Empire):	fruit set
Apple(Golden Delicious):	fruit set
Apple(Honey Crisp):	fruit set
Plum (Stanley):	fruit set, shucks 50% off
Plum (Italian):	fruit set, shucks on
Peach (early):	fruit set, shucks off
Peach (late):	fruit set, shucks 50% off

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**scaffolds**

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### UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1-5/15/06):	480	228
(Geneva 1/1-5/15/2005):	277	183
(Geneva "Normal"):	357	234
(Geneva 1/1-5/22 Predicted):	551	258
(Highland 3/1-5/15/06):	514	268

Coming Events:	Ranges(Normal±StDev):	
Lesser appleworm 1st catch	246-550	108-292
Codling moth 1st catch	389-597	190-330
Spotted tentiform leafminer sap-feeders present	343-601	165-317
American plum borer peak catch	569-837	279-495
Mirid bugs 50% hatch	407-523	203-281
Mirid bugs 90% hatch	467-615	240-322
Oriental fruit moth 1st flight peak	328-536	159-285
Pear psylla hardshell present	493-643	271-361
San Jose scale 1st catch	377-597	186-324
European red mite 1st summer eggs	447-555	237-309
McIntosh at petal fall	442-526	227-283
McIntosh at fruit set	516-610	270-332

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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