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Update on Pest Management
and Crop Development

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

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Geneva, NY

BEFORE THE FALL

A PILE OF
PETALS AT
YOUR FEET
(Art Agnello,
Entomology,
Geneva)



reports of TPB activity at the start of the warm-up period, not because they were necessarily more numerous this year.

Growers may be better advised to base their petal fall spray needs on what is actually going on in the field at this moment rather than what "normally" occurs at petal fall. Some specifics:

❖❖ Before we completely lose the opportunity to address spring pest decisions, as the trees seem destined to get the whole season over with by July, we should probably discuss a few petal fall considerations and how this year's highly irregular weather may be affecting what the insects are and aren't doing out there.

First of all, this is one of those years where the long-observed relationships between tree development and pest activity may not exactly hold true to our expectations. The concept of what's "normal" is a tenuous one, and easily subject to modification after something generally thought to be rare occurs more than once or twice. We have now seen a few years where the tight cluster-to-pink-to-bloom sequence has been contracted into just a few days, and the result can easily have the trees outrunning the insects. This differential response to heat units appears to push certain pest events "back" one or two phenological stages, compared with what we normally expect. Mite eggs, which normally start hatching at tight cluster, hold on until pink or later; leafminer eggs aren't seen until bloom rather than pink; oriental fruit moths, normally in full flight by peach petal fall, are only just starting to appear in traps. Other species, such as pear psylla and tarnished plant bug, may be quick responders, needing only a day or two of warm temperatures to explode into full activity. This might have been why we heard so many

Mites

If you managed to get a prebloom oil or miticide applied, fine. If you didn't, and are concerned about early buildup in certain problem blocks, Apollo and Savey are just as appropriate to consider at petal fall as is Agri-Mek, which we normally recommend at this time. Nymphal populations are still likely to be small enough to be effectively handled by any one of these materials, if they fit into your product rotation (i.e., weren't used last year).

Obliquebanded Leafroller

Because these insects overwintered as 1st or 2nd stage larvae, they probably haven't had enough time to feed and grow as much as in a normal year, and may be somewhat smaller than

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they usually are by petal fall. This translates into potentially higher control efficacy with whatever product is used against them, as smaller larvae are generally easier to kill. Among the selective insecticides available, Confirm and B.t. products such as Dipel are options, and the latter can be used while blossoms are still present. Pyrethroids such as Asana or Danitol can 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

OFM has been receiving more attention recently, as we have been made increasingly aware of its ability to overcome some of the older OP-based control programs, particularly in peaches. However, now that we've made such a big stink about starting to consider control at petal fall instead of shuck split, this year has us seeing a flight that's just barely getting off the ground even though many peach orchards are certainly at (or past) petal fall. To maximize the efficacy of your 1st brood control, growers in western N.Y. at least could probably wait until the end of this week before starting a program such as Asana, backed up 10-14 days later.

On the Other Hand: Plum Curculio and European Apple Sawfly

The activities of these two pests may not be so easily waylaid by advanced tree development, because they tend to be active and in the trees during bloom in a normal year anyway, and the only reason we don't worry about them until petal fall is that there's no fruit around to be bothered until then.

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 about 40% of the oviposition cycle is complete, which is predicted by the model to occur at 340 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

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Dept. of Entomology
NYSAES, Barton Laboratory
P.O. Box 462
Geneva, NY 14456-0462

Phone: 315-787-2341 FAX 315-787-2326
E-mail: ama4@cornell.edu

Editors: A. Agnello, D. Kain

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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 340 DD falls within 10-14 days after a previous spray.

European apple sawfly, a 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. 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. One newly registered insecticide with activity against both pests, Avaunt, may have a slight advantage in this case. Although highly toxic

to bees exposed to direct treatment, it is relatively non-toxic when dried. To minimize the hazard to honey bees, apply any pesticide only after ALL petals have fallen in the block and when no bees are actively foraging on blooming weeds (evening is better than early morning).❖❖

PEST FOCUS

Highland:

Obliquebanded leafroller, redbanded leafroller and **green fruitworm** feeding damage and larvae observed. 1st **European red mite** motiles observed. **Pear psylla** in hardshell stage.

PHENOLOGIES

Geneva:

Apple (McIntosh): Bloom
Apple (Red Delicious): King bloom
Pear (Bartlett): 50% petal fall
Peach: Petal fall
Tart cherry (Montmorency): Bloom
Sweet cherry: Petal fall
Plum (Stanley): Petal fall

Highland:

Apple (McIntosh): 90% petal fall
Apple (Red Delicious): 50% petal fall
Peach: Shuck split
Plum: Shuck split
Quince: Bloom

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Dept. of Entomology
 NYS Agricultural Exp. Sta.
 P.O. Box 462
 Geneva, NY 14456-0462

UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1-5/6):	375	195
(Geneva 1/1-5/6/2001):	333	194
(Geneva "Normal"):	307	144
(Highland 1/1-5/6):	549	291

Coming Events:**Ranges:**

Rose leafhopper nymphs on multiflora rose	188-402	68-208
San Jose scale 1st catch	189-704	69-385
Spotted tentiform leafminer 1st flight peak	180-544	65-275
European red mite egg hatch	157-358	74-208
Obliquebanded leafroller larvae active	149-388	54-201
Tarnished plant bug adults active	71-536	34-299
Comstock mealybug 1st gen. crawlers in pear	220-425	82-242
American plum borer 1st catch	194-567	55-294
Codling moth 1st catch	273-805	141-491
Mirid bugs 1st hatch	322-481	156-246
McIntosh at petal fall	418-563	210-298
Peach at shuck split	362-518	174-287
Pear at petal fall	343-544	144-275
Plum at fruit set	411-527	206-287
Sweet cherry at petal fall	257-448	131-251
Tart cherry at petal fall	385-563	185-289

INSECT TRAP CATCHES
(Number/Trap/Day)
Geneva, NY**Highland, NY**

	<u>4/29</u>	<u>5/3</u>	<u>5/6</u>		<u>4/29</u>	<u>5/6</u>
Green fruitworm	0.3	0.0	0.0	Green fruitworm	0.0	0.0
Redbanded leafroller	0.0	0.3	1.0	Redbanded leafroller	11.0	4.1
Spotted tentiform leafminer	4.5	23.6	103.2	Spotted tentiform leafminer	9.9	10.0
Oriental fruit moth	0.0	0.3	32.0	Oriental fruit moth	0.3	4.0
Lesser appleworm	0.0	0.3	79.2	Codling moth	0.1*	0.0
Codling moth	0.0	0.0	0.0	Lesser appleworm	0.0	0.0
				Tufted apple budmoth	0.0	0.0
				Variegated leafroller	0.0	0.0

* first catch

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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