

scaffolds

Update on Pest Management
and Crop Development

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

April 23, 2012

VOLUME 21, No. 7

Geneva, NY

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SNOW
FOOLIN¹

SNOWFALL/PETAL
FALL
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❖❖ I suppose we have to assume that, once all the snow from this atypical storm melts and the temperatures climb back into the 50s, the insects will resume doing what they always do, and we'll eventually need to consider the utility of petal fall management tactics. It's less certain what sort of crop we'll be protecting at this point, but assuming there will still be sufficient fruit buds and fruitlets to provide variable portions of a normal crop, the following insects are the main concerns needing to be addressed:

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 we may have to wait another week to happen. 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.

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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 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, including 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; for practical purposes this abnormal season, assume that emergence has taken place and at least some will retreat during the cold wave and regroup after it has passed. 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 (which may occur in May this year).

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).

Obliquebanded Leafroller

Larvae overwintering as 1st or 2nd stage caterpillars may have had the ability to grow to a noticeable

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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 3 pm Monday to:

scaffolds FRUIT JOURNAL
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This newsletter available online at:
<http://www.scaffolds.entomology.cornell.edu/index.html>

size, although we haven't actually seen any up to this point, so most are likely still relatively small. 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 now also 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 how many beneficial mites and insects you can afford to lose.

Oriental Fruit Moth

Biofix will be very spread out across NY again this year, with most WNY sites yet to record any moth captures; warmer temperatures, when they do occur again, should bring them out 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 start a protective spray program. To maximize the efficacy of 1st brood control, peach growers 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 Delegate, Altacor, and the newly available 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.❖❖

ALL
MIXED
UP

AGRI-FLEX LABEL
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❖❖ After printing last week's note about the Voliam Flexi label, I was made aware of another pre-mix insecticide from Syngenta that was registered last year, but which apparently slipped by me. Agri-Flex (EPA Reg. No. 100-1350) is registered for use against a range of pests in apples and pears in NYS, except in Nassau and Suffolk Counties. This product is a mixture of thiamethoxam, the a.i. of Actara, and abamectin, the a.i. found in Agri-Mek. In apples, its label lists plum curculio, European apple sawfly, green aphids, mealybugs, leafminers and leafhoppers, pear psylla (in pears), and mites. The label states that it must be mixed with a nonionic adjuvant or horticultural spray oil (not a dormant oil). It has a 4-day REI, and a PHI of 35 days. This is a restricted-use product, and due to NY restrictions on thiamethoxam-containing products, no more than a total of 17.3 fl oz/acre of formulated product may be applied per season; this use corresponds to the total amount of 0.172 lb a.i./acre of thiamethoxam allowed, whether applied as Agri-Flex, Voliam Flexi, Actara, or Endigo.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds; it may not be applied between early pink and petal fall in apples, or between green cluster and petal fall in pears. For best effectiveness and insecticide resistance management, use of pre-mixes such as Agri-Flex should be reserved for situations when multiple pest species are present and appropriately matched to the combination of active ingredients and modes of action contained in the product.

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PEST FOCUS

Geneva: **Lesser appleworm** 1st catch
4/19.

PHENOLOGIES

Geneva:	<u>4/30 Predicted:</u>
Apple (McIntosh): king bloom	bloom
Apple (Red Delicious): king bloom	bloom
Apple (Empire): 50% bloom	bloom
Pear: petal fall	petal fall
Peach: petal fall	petal fall
Sweet cherry: 50% petal fall – petal fall	petal fall
Highland:	
Apple(Golden Delicious, Red Delicious): late bloom	
Apple(Empire, Ginger Gold, McIntosh): petal fall	
Pear (Bartlett, Bosc): fruit set	
Apricot (early): petal fall, shucks off	
Sweet cherry(early, mid): petal fall	
Sweet cherry(late): late bloom	
Peach (early, late): petal fall, shucks on	
Plum (Stanley): petal fall	

UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1–4/23/12):	402	212
(Geneva 1/1–4/23/2011):	142	53
(Geneva "Normal"):	206	94
(Geneva 1/1–4/30 predicted):	423	217
(Highland 1/1–4/23/12):	508	268
(Highland 1/1–4/23/11):	177	66

<u>Coming Events:</u>	<u>Ranges (Normal ±StDev):</u>	
Green fruitworm flight subsides	247–451	111–239
Spotted tentiform leafminer 1st oviposition	143–273	58–130
European red mite egg hatch complete	368–470	182–280
Oriental fruit moth 1st flight peak	352–550	178–294
Comstock mealybug crawlers in pear buds	215–441	80–254
Redbanded leafroller 1st flight peak	231–363	105–185
Rose leafhopper nymphs on multiflora rose	239–397	96–198
Spotted tentiform leafminer 1st flight peak	266–402	123–207
Spotted tentiform leafminer sap-feeders present	343–601	165–317
Lesser appleworm 1st flight peak	355–773	174–440
American plum borer 1st catch	391–493	194–266
Codling moth 1st catch	400–578	201–313
Mullein bug 1st hatch	331–443	163–229
Mullein bug 50% hatch	429–473	208–262
McIntosh bloom	348–420	171–219
McIntosh petal fall	445–525	229–281

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.