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Update on Pest Management
and Crop Development

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

May 11, 1998

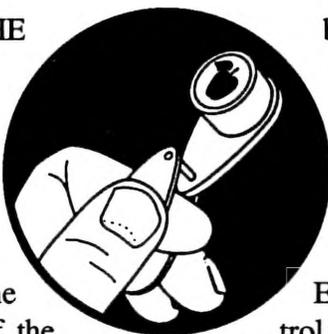
VOLUME 7, No. 8

Geneva, NY

STEP
ON
IT!

PETALS TO THE METTLE

(Art Agnello and
Harvey Reissig,
Entomology,
Geneva)



❖❖ This is probably past the point of being timely for many of the orchards in the eastern parts of the state, but even with a weekly format, it's difficult for us to keep on top of the schedule when a season has the starts and stops we've seen during the past few weeks. Weather allowing, many western N.Y. orchards will be entering the petal fall period this week, which is the pivotal time for establishing a foundation for the control of many of the most important arthropod pests. Here are a few points to keep in mind for the petal fall insecticide sprays:

1) To minimize the hazard to honey bees, apply pesticides 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).

2) Do not use Lannate on early McIntosh, Wealthy, or Dutchess because of possible injury to fruit and foliage.

3) Postbloom use of any pyrethroid insecticide has been known to encourage the buildup of mites and woolly apple aphid. If a pyrethroid (Asana, Ambush, Pounce) was used in any of the prebloom sprays, do not apply another pyrethroid at petal fall. Try to limit use of these materials to one application per season to delay resistance development and extend their useful field life.

4) When choosing an insecticide for this application, keep in mind its range of activity,

both adverse and beneficial. For example,

- if Sevin is applied for thinning, it will also help to control plum curculio and white apple leafhopper (even at the 1 lb rate).

- Carzol acts not only against European red mite, but will also control white apple leafhopper; however, it is not kind to predatory mites.

- Agri-Mek is recommended at petal fall for maximum efficacy against mites; this is also the timing at which it will have its greatest effect against white apple leafhopper nymphs and sapfeeding spotted tentiform leafminers. It is not likely to be too useful against rosy apple aphid.

5) Be aware of the destructive effects of any spray materials on beneficial mites and insects (refer to Tables 8 and 12 on pp. 37 and 44 in the 1998 Recommends.)

6) Do not use Vydate or Sevin during the first 30 days after bloom without taking into account their thinning effects.

MITES

Because tree development this year was earlier and more rapid than normal, European red mite management strategies will need to compensate for some atypical situations this season. First, the trees in many spots were well into the pink bud stage before the first mite eggs began to hatch, so it might be tempting to think that mite population development is 'delayed' this year. However, the post-hatch weather has been more favorable than normal for mite growth, so if anything, the mites are probably better primed for a rapid buildup than they normally would be by this date. Furthermore, although spraying

continued...

conditions were fairly acceptable during the prebloom period, it didn't last long enough for many people to complete their tight cluster or pink miticide sprays, so there's probably going to be a lot of waiting-until-they-show management decisions this summer. This approach is possible of course, especially with the availability of a good threshold-response product like Pyramite, but it carries the implicit requirement of vigilant monitoring for threshold numbers and timely action when a rescue treatment is needed. This summer has all the markings of being longer and warmer than normal, which could enable red mites to complete an entire extra generation before bowing out in the fall. High numbers and significant leaf damage can develop very rapidly under such conditions.

Our message, not surprisingly, is that it is always wise to keep an eye on the foliage throughout June and July to detect unreasonable mite buildup, because it doesn't take much to boost numbers into the problem category. Until June 30, we recommend a threshold of 2.5 motile stages (anything except eggs) per leaf. You can determine the mite densities on the foliage by using the presence/absence technique:

Examine intermediate-aged leaves (from the middle of the fruit cluster) for motile stages. Check at least 50 leaves (5 per tree), for the presence of any number of mites; no treatment is recommended if <62% of the leaves examined are infested. A sequential sampling table (p. 91) and chart (p. 98) are provided in the Recommends. The choices are as follows if you detect over-threshold levels:

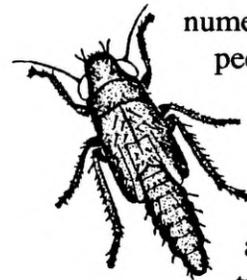
Pyramite applied in a timely manner should generally do the best job, and is most likely to give you control for the remainder of the season, but don't stop examining the foliage altogether. It's advisable not to use this product more than once per season, even though 2 applications are allowable. This is not only out of consideration for potential resistance development, but also because Pyramite has some toxicity to predator mites, and hitting them twice won't do much to allow their establishment.

Kelthane can be used if you have no reason to

suspect resistance in your populations, or if none has been applied in a given block for at least 5 years.

Carzol is another choice if you don't mind eliminating any predator mites in the block; back-to-back sprays of this product would probably be needed.

WHITE APPLE LEAFHOPPER



WALH nymphs can be numerous in some blocks, especially in the eastern part of the state. Provado has proven itself effective against this pest, and a petal fall application also gives leafminer control. Furthermore, it will have an added effect on green aphid populations, which might otherwise be more problematic this spring, owing to the advanced tree development and sustained availability of succulent green tissue. Growers using Sevin in their thinning sprays will get some control at the 1 lb rate. Alternative choices for control include Thiodan and Lannate; Agri-Mek or Carzol used for mites

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now will also do the job, but Carzol will be harmful to predator mites. The damage potential of this first generation should be evaluated carefully before deciding on the need for a specific control of this pest.

PLUM CURCULIO

Plum curculio adults move into orchards from overwintering sites in hedgerows or the edges of woods and are present in the trees from late pink to early bloom before the fruit is susceptible to damage. Adults are active in the spring when temperatures exceed 60°F, which means that more than likely they've already started. 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. Although adults may feed on blossoms, apples are not susceptible to damage until petal fall, at which time adults damage fruit by both feeding and ovipositing. Unlike fruit injured by other pests, many apples damaged by plum curculio will remain on the tree until harvest. 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.

Monitoring for plum curculio is not currently recommended in New York because of the amount of time and labor involved and because plum curculio is generally assumed to be present in every orchard. However, various techniques have been used in other areas to monitor plum curculio damage and the presence of adults:

- The Tedders "pyramid" trap, a gray bi-fold wood board unit topped with an inverted screen funnel, can be placed in the orchard, preferably as close as possible to a tree, to attract curc adults.
- Clubs or shakers can be used to jar adults from limbs into catching frames or cloths for counting.
- Polyethylene funnels hung under branches can be used to capture adult plum curculio.
- Immature "scout apples" hung in trees near the edges of orchards serve to measure oviposition scars



before petal fall so potential damage can be estimated before control sprays are applied.

- Oviposition scars on immature fruit can be counted in orchards starting at petal fall to estimate damage from plum curculio. Because substantial oviposition and damage can occur even after a single warm day and night, frequent scouting for damaged fruit is necessary after petal fall. The economic threshold for plum curculio damage after petal fall in Massachusetts has been set at 1 feeding or oviposition scar among 60 apples, 6 from each of 10 trees per block.

Several species of wasps parasitize eggs and larvae of plum curculio. Ants, lacewings, and ground beetles prey on larvae in the soil, and some fungi kill

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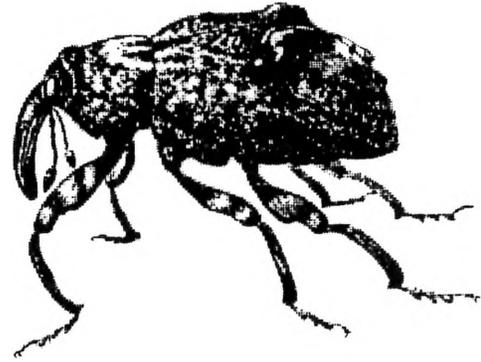
PEST FOCUS

Geneva: **Codling moth** and **San Jose scale** 1st catch in apple 5/7 (Begin accumulating degree days (base 50°F) from 5/7 to determine timing of codling moth spray). **American plum borer** and **lesser peachtree borer** 1st catch in cherry and peach 5/7.

Highland: **Plum curculio** damage observed 5/7. **1st spotted tentiform leafminer** mines observed. **European apple sawfly** damage observed on apple fruitlets.

larvae. These organisms are not usually sufficient to regulate populations of plum curculio in commercial orchards. Plum curculio is difficult to control completely with insecticides. Relatively high rates and persistent applications are important of the difficult to predict period of adult activity. In normal orchards that are not near woodlots or hedgerows and have not suffered previous damage, a single application at petal fall will provide seasonal control.

In problem orchards, a petal fall application followed by a second spray 10 to 14 days later will provide adequate control. In orchards with chronic problems, or in seasons when adult activity is prolonged by unusually cool and wet weather, two cover sprays applied 10 to 14 days apart after petal fall may be necessary to prevent late damage. This recommendation derives from a developmental model tested several years in the field at Geneva, which predicts that control sprays are no longer necessary whenever the last spray has been applied with 10–14 days after the accumulation of 340 DD (base 50°F) from petal fall. Guthion, Imidan, Lorsban, and all pyrethroid insecticides are effective at controlling plum curculio. These materials will also control codling moth later on. ♦♦



INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

HVL, Highland, NY

	<u>5/4</u>	<u>5/7</u>	<u>5/11</u>		<u>4/27</u>	<u>5/4</u>	<u>5/11</u>
Spotted tentiform leafminer	741	589	85.5	Pear psylla eggs/leaf	16.3	12.8	2.1
Redbanded leafroller	12.6	7.0	4.8	Pear psylla hardshells/leaf	-	0.2	0.3
Oriental fruit moth (apple)	8.0	2.2	3.3	Spotted tentiform leafminer	17.2	18.3	7.4
Lesser appleworm	1.9*	4.0	7.0	Redbanded leafroller	8.3	7.4	2.3
Codling moth	-	1.3*	1.4	Oriental fruit moth	2.3	3.0	1.0
San Jose scale	-	0	0.5*	Lesser appleworm	0	0	0
American plum borer	-	0.7*	1.1	Codling moth	0	0.1*	0.1
Lesser peactree borer	-	0.2*	0.1	Obliquebanded leafroller	0	0	0

* 1st catch

(Dick Straub, Peter Jentsch)

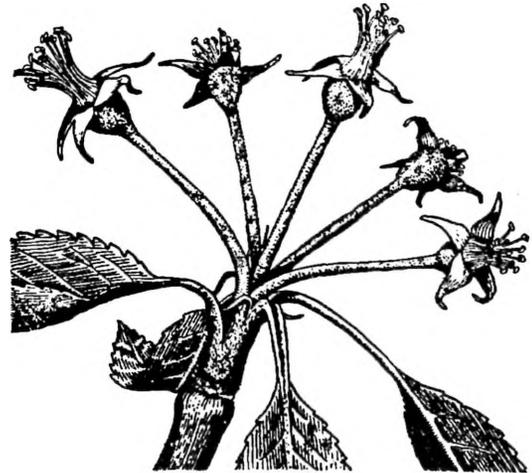
PHENOLOGIES

Geneva:

Apple(Mac) - petal fall
 Red Delicious) - petal fall
 Pear (Bartlett) - fruit set
 Sweet cherry (Darrow) - fruit 10mm
 Tart cherry (Montmorency) - petal fall
 Peach - shuck split
 Plum - fruit set

Highland:

Apple (Mac) - fruit set
 Apple (Red Delicious) - fruit set
 Pear (Bartlett) - fruit 10mm



UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1- 5/11):	520	280
(Geneva 1997 1/1-5/11):	302	138
(Geneva "Normal" 1/1-5/11):	350	164
(Highland 1/1-5/11):	701	383

Coming Events(Geneva):

	Ranges:	
Redbanded leafroller 1st flight peak	180-455	65-221
STLM 1st flight peak	180-544	65-275
STLM sap-feeders present	295-628	130-325
Comstock mealybug 1st gen. crawlers in pear buds	220-425	82-242
Oriental fruit moth 1st flight peak	259-606	96-298
San Jose scale 1st catch	189-704	69-385
American plum borer 1st flight peak	360-962	134-601
Codling moth 1st catch	273-805	141-491
European red mite summer eggs present	448-559	235-320
Lesser appleworm 1st flight peak	372-851	181-483
Pear psylla hardshells present	463-651	259-377
Mirid bug hatch complete	532-720	252-390
McIntosh at fruit set	467-648	242-339

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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