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Update on Pest Management
and Crop Development

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

May 13, 1996

VOLUME 5

Geneva, NY

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MITEY GOOD NEWS

AGRI-MEK
APPROVED FOR
N.Y. APPLES
(Art Agnello,
Entomology,
Geneva)



❖❖ Last Friday, we were notified that the NYS Dept. of Environmental Conservation has approved the Section 24(c) Special Local Need label request submitted by the New York State Horticultural Society for the use of Agri-Mek to control European red mite on apples. This label is available only to current NYS Hort Society members; membership is open to all interested growers. Any grower who is interested in using Agri-Mek on apples is urged to contact the NYS Hort Society office immediately at 315/787-2404 (phone) or 315/787-2216 (FAX) to initiate the required paperwork. The grower request procedure follows:

1. Contact the Horticultural Society and request the Agri-Mek label package.

2. Sign and notarize the User Disclaimer and sign the Membership Agreement.

3. Return all copies to the Horticultural Society office, along with a check for \$60 (current members) or \$95 (non-members), payable to the NYS Horticultural Society. \$35 of the non-member fee will be credited to 1996-97 membership dues.

4. The Horticultural Society will return the authorized grower label as quickly as possible.

Growers must have a copy of the Hort Society-authorized label in their possession at the

time of the application and retain the label with their application records.

Research in N.Y. and elsewhere has indicated that Agri-Mek is a safe and effective early post-bloom material for red mite control, and it is being made available as a service to N.Y. apple growers who feel that potential losses from ERM can be minimized by using this product in their summer mite program. The label allows for a single application of 10-20 fl.oz. (plus 1 gal paraffinic spray oil) per acre, which we recommend at a timing of 1-2 weeks after petal fall.❖❖

HEAD START

PETAL FALL POINTERS
(Art Agnello & Harvey
Reissig, Entomology,
Geneva)

❖❖ It's difficult to find many apple flower buds that are even showing pink in western N.Y. right now, but trees have a way of making up for lost time in a hurry once the weather moderates, and that could happen any time (as soon as they take snow out of the forecast). This time of the season is when growers are traditionally thinking about petal fall, which is when the effort to circumvent insect pest problems starts its most active phase. Following are a few points to keep in mind for your petal fall insecticide sprays:

- 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

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than early morning).

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

- Postbloom use of any pyrethroid insecticide has on been known to encourage the build-up 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.

- 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.

- 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 43 in the 1996 Recommends.)

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

MITES

Although there have been fears expressed about the inability to get into the orchards for early season sprays and the lack of a good contact acaricide available for midsummer rescue treatments, the good news is that our cool and wet spring weather is also unfavorable for mite development, so the outlook is not too bleak. Also, with the approval of the Agri-Mek label, growers will have the option of a post-petal fall application in blocks where the early season program may not have been all that was desired. Regardless of how the next 4–6 weeks pan out (and what was applied earlier), remember that it is always wise to keep an eye on the foliage throughout late June and July to detect unreasonable mite buildup, because a little warm weather can quickly 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. 87) and chart (p. 94) are provided in the Recommends. The choices are not numerous if you detect over-threshold levels; Kelthane can be used if you have no reason to suspect resistance in your populations, or Agri-Mek is a potential (if expensive) choice up to about 6 weeks past petal fall, provided it hasn't been applied already and the tissue isn't too hardened off. 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;

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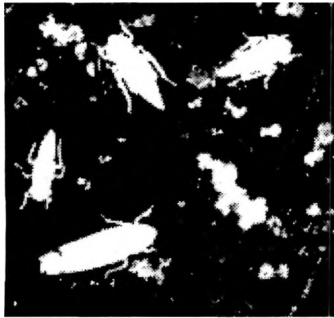
scaffolds FRUIT JOURNAL

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growers using Sevin in their thinning sprays will get some control at the 1 lb rate. Alternative choices for control include Thiodan and Lannate; Carzol used for mites now will also do the job, but will be harm-

ful to your predator mites; this first generation is generally not problematic enough to be worth the trade-off.

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. 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. Various techniques have been used in other areas to monitor plum curculio damage and the presence of 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 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 because adults may be active for two to six weeks after petal fall depending on temperatures. 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.



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GREEN FRUITWORM (GFW)

This is a collective common name used in New York to refer to a number of Lepidoptera, but one of the more common members of this group is the speckled green fruitworm, *Orthosia hibisci*. Traditionally, orchards in eastern N.Y., particularly the Hudson Valley, have had greater problems with GFW than those in the western part of the state. The GFW has a single generation per year and overwinters in the pupal stage in the soil. Adult emergence begins at about green tip and is complete by the pink stage of McIntosh apples. The adults are about 2/3 of an inch long, and are grayish-pink in color with two purplish-gray spots on the forewings. Egg laying begins at about half-inch green. Eggs are laid singly or in pairs. They are white to grayish in color and have ridges radiating from the center. GFW larvae begin hatching between tight cluster and



pink. The larvae feed on new leaves, flowers, and developing fruit. Fruit feeding is normally restricted to larger larvae. The larvae mature between late May and late June, at which time they drop to the ground and pupate in the soil at a depth of 2 to 4 inches. In the past, sprays were applied at pink and petal fall to control the GFW. However, research has indicated that a single spray at petal fall provides comparable control to the two-spray program. Monitoring for the GFW is the same as monitoring for the obliquebanded leafroller, which should take place during the late bloom stage, and both species may be considered together in making a control decision. Pesticides recommended for control of this caterpillar include: Lorsban, Thiodan, Lannate, and the pyrethroids Asana, Ambush, or Pounce.

EUROPEAN APPLE SAWFLY (EAS)

EAS is an introduced pest and its natural enemies in the United States have been little studied. It overwinters in a puparium in the soil, and adults emerge at the beginning of bloom. Eggs are laid in blossoms at the base of the stamens and hatch in one to two weeks. Larvae feed below the skin near the apple calyx in a spiral pattern that will cause scarring around the circumference of the fruit at harvest. The larvae then molt and feed deeper inside the apple, causing the fruit to abort. Sawfly damage can be distinguished from that of internally feeding lepidopterous larvae because sawfly exit holes are covered with reddish-brown frass pushed out by the feeding larva. This insect is generally a pest only in Eastern New York. Because adults are visually attracted to apple blossoms, sticky-coated white rectangles that are non-UV-reflecting can be used to monitor adults. In Massachusetts, a spray is recommended at petal fall if more than an average of 6–9 EAS per trap are captured by petal fall in an orchard that received prebloom insecticide, or 4–5 in an orchard that did not receive prebloom insecticide. We do not recommend monitoring for this pest in New York because it is normally controlled by the initial spray applied at petal fall to control the plum curculio. ♦♦

PHENOLOGIES

Geneva:

Apple (McIntosh) - tight cluster to pink
Sweet cherry (Windsor) - bloom
Tart cherry (Montmorency) - white bud
Pear - green cluster
Peach - pink
Plum (Darrow) - bud burst

Highland:

Apple (McIntosh) - full bloom
Pear (Bartlett) - petal fall

SCAB

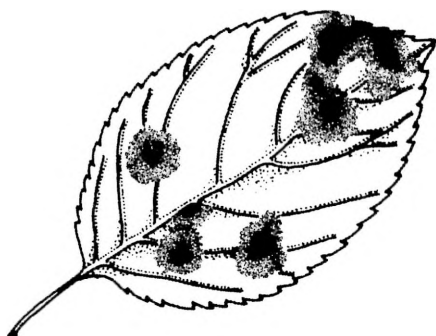
APPLE SCAB UPDATE
(Dave Rosenberger,
Plant Pathology, Highland)

Hudson Valley scab infection periods May 6-13:

May 5: 19.5 hrs, 45 F, 0.32 inches rain;
Light Mills infection period

May 10: 11 hrs, 64 F, 0.07 inches rain;
Light Mills infection period

May 11: 14.5 hrs 48 F, 0.69 inches rain;
Light Mills infection period



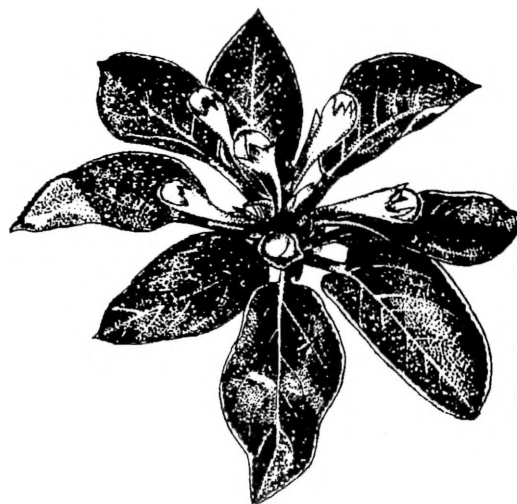
HUDSON VALLEY DISEASE UPDATE (Dave Rosenberger, Plant Pathology, Highland)

❖❖ Fire Blight: Temperatures in eastern NY remained too cool to trigger a MaryBlyt infection period. The MaryBlyt model indicated a high-risk period for blossom blight infection on Saturday, May 11, when the temperature reached 80°F and rain occurred later in the day. However, the epiphytic infection potential remained below the threshold required for an infection period. Growers that had fire blight in their orchards anytime during the past two years were advised to apply streptomycin either Friday afternoon or Saturday morning.

Apple scab lesions appeared on unsprayed trees in the Hudson Valley sometime around May 8. Where early-season scab was not adequately controlled, there is now potential for secondary spread of scab. In one orchard that was reportedly sprayed last year but abandoned

this spring, we found sheet scab on the second and third cluster leaves on many clusters that had retained petioles from last year's leaves. Based on leaf litter on the orchard floor, it was obvious that the orchard had considerable scab last year. Apparently, some of the petioles carried scab through the winter and contributed to early scab this season in this particular orchard. This is an interesting biological phenomenon, but is probably of little importance in orchards that were well-sprayed last season.

Powdery mildew has been favored by the cool temperatures and high humidity that has prevailed over the past few weeks. Secondary mildew lesions are becoming evident in unsprayed trees. Mildew may be favored this year because the foliage is unusually tender due to lack of any really warm, dry, sunny days. Growers who are controlling scab using only mancozeb will need to include a mildewcide on susceptible cultivars. The first mildewcide application should have occurred no later than pink, but acceptable control can usually be achieved by applying Rubigan, Nova, or Bayleton in three or four applications beginning at petal fall. Benlate and Topsin M are still working against mildew in some orchards, but they are ineffective in other orchards where mildew is apparently resistant to these fungicides.❖❖



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

	<u>5/6</u>	<u>5/9</u>	<u>5/13</u>		<u>4/29</u>	<u>5/6</u>	<u>5/13</u>
Green fruitworm	0.3	0	0.3	Green fruitworm	0.2	0	0.1
Redbanded leafroller	0.3	0.3	1.9	Redbanded leafroller	14.7	8.1	0.9
Spotted tentiform leafminer	506	392	276	Spotted tentiform leafminer	15.3	15.6	16.4
Oriental fruit moth (apple)	0	0	0	Oriental fruit moth	0.3	4.4	4.5
Oriental fruit moth (peach)	0	0	0	Lesser appleworm	-	-	0
Lesser appleworm	0	0	0	Codling moth	-	-	0
Codling moth	-	-	0	Fruittree leafroller	-	-	0
San Jose scale	0	0	0	Tufted apple budmoth	-	-	0
American plum borer	-	-	0				
Lesser peachtree borer (cherry)	-	-	0				
Lesser peachtree borer (peach)	-	-	0				

* = 1st catch

(Dick Straub, Peter Jentsch)

UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1- 5/13):	263	114
(Highland 1/1- 5/13):	544	275

Coming Events:**Ranges:**

Green fruitworm peak flight	64-255	19-108
Pear psylla 1st egg hatch	111-402	55-208
Redbanded leafroller 1st flight peak	180-455	65-221
STLM 1st flight peak	180-439	65-217
STLM 1st eggs	141-319	48-154
Green apple aphid present	127-297	54-156
Rosy apple aphid nymphs present	91-291	45-148
Pear thrips in pear buds	137-221	54-101
Obliquebanded leafroller larvae active	149-388	54-201
Oriental fruit moth 1st catch	129-587	44-338
European red mite egg hatch	157-358	74-208
Syrphid predator eggs present	137-366	67-214
McIntosh at tight cluster	188-279	68-138

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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