

scaffolds

Update on Pest Management
and Crop Development

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

May 19, 1997

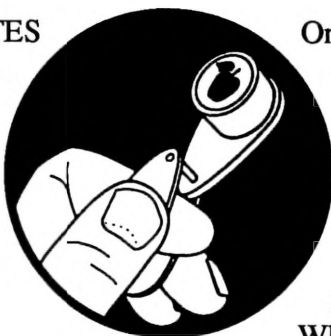
VOLUME 6, No. 9

Geneva, NY

FRUIT COCKTAIL

INSECT BITES

(Art Agnello
and
Dave Kain,
Entomology,
Geneva)



Once the nymph begins to feed, a honeydew drop forms over the insect; the psylla develops within this drop for the first few instars. Honeydew injury occurs when excess honeydew drips onto and congregates on lower leaves and fruit. The honeydew is a good medium for sooty mold growth.

When it occurs on the fruit, it russets the skin and makes the fruit unsaleable. Ladybird

beetles, lacewings, syrphids, snakeflies (Raphidiidae), and predatory bugs have been recorded feeding on the psylla. There are also two chalcid parasites of pear psylla in the U.S. However, to obtain commercially acceptable fruit in New York, pear psylla must be controlled with insecticides.

Stone Fruit Aphids

❖❖ Although green peach aphids are not always as serious a problem as they can be, these greenish, smooth-looking aphids can start showing up in peach blocks around this time of the year. They cause curled leaves that may turn yellow or red in severe cases. The young aphids begin to hatch about the time of peach bloom and remain on the trees for 2–3 generations, until early summer, when they seek other hosts (mainly vegetable truck crops). Green peach aphids suck the sap from the new fruits and twigs, and are also found on plum, apricot, cherry, and many ornamental shrubs. These insects are difficult to control; Lannate or Thiodan are recommended postbloom, before excessive leaf curling occurs, in order to maximize the spray's effectiveness. Also, keep an eye out for black cherry aphid in your cherry trees after shuck fall. If colonies are building up on the foliage, recommended materials include Sevin, malathion, Imidan (tart cherries only), and PennCap-M.

Pear Psylla

The pear psylla is a "flush feeder", meaning that the nymphs feed and develop primarily on the newer, more tender growth. By midway through the growing season, the majority of leaves are hardened off and psylla development then may be limited primarily to the water sprouts.

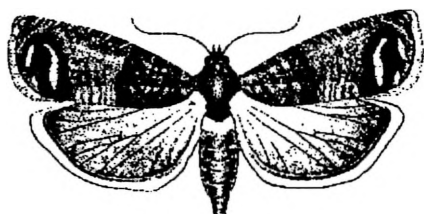
For psylla control, we have historically recommended an application of an effective insecticide when nymphs start to build to the level of 1–2 per leaf after petal fall. More than one application of some material is often necessary. In the most recent past, the pyrethroids and Mitac have been the most widely used psylla products in our area. During the past 5 years, we have additionally been able to use Agri-Mek under Section 18 exemptions and as a Special Local Need use; this year, it is at last available under a full federal and state label. This chemical is absorbed into the leaf tissue and kills the psylla when it feeds; its mode of action is also different from the other contact toxicants. In field trials, it has provided 4–6 weeks or more of protection under normal growing conditions. Current guidelines call for it to be applied within the first 1–2 weeks after petal fall, which means that the effectiveness of a single application may not carry through the entire season, depending on

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how late the spray is made and how absorptive the tissue is at the time of application. Our dearth of warm temperatures so far this season has allowed the pear foliage to remain relatively succulent for the time being, but these things can change quickly. The Agri-Mek label allows for the option of a second spray, but considering the cost, late summer leaf condition, and resistance factors, a better approach would be to keep a watchful eye on the trees in mid- to late July, and switch to something different if needed, such as Provado or Mitac.

Codling Moth

Most New York apple growers have traditionally ignored the potential threat to their crop posed by this widely endemic orchard resident, as the regular OP sprays for plum curculio and apple maggot between petal fall and mid-August make fruit infestations by codling moth relatively rare. During the past few years, however, with the advent of trapping-based spray decisions for apple maggot, and a resulting decrease in cover sprays in some cases, we have begun to hear more about an unwelcome return of the worm in the apple, which is all the more unacceptable because it is a fairly easy problem to prevent. To that end, we will again publicize suggested codling moth treatment windows this season, for those growers who don't necessarily spray certain blocks for maggot each year, and who have evidence (or suspicion) that codling moth is starting to pose a significant threat.



The Michigan model for predicting this insect's development gives fairly accurate predictions of codling moth activity in N.Y. As many as two insecticide applications may be made for each of the two generations per year, depending on the severity

of pressure. Degree days are accumulated from the date of first sustained moth catch, and the first spray is applied at 250 DD (base 50°F), which corresponds with predicted 3% egg hatch. A second spray may be applied 10–14 days later. If pressure is not too severe, one spray will suffice, applied instead at 360 DD after the biofix date (which hasn't arrived just yet). To control the second generation, the timing is 1260 DD after this same biofix date. We will be providing regular updates to identify imminent spray dates.

American Plum Borer

Eggs of this moth are deposited on cherry and peach trees in cracks under loose bark and hatch in a few days. Larval tunnels are shallow with frequent openings to the outer bark, where red frass accumulates. The larvae can't bore into the cambium unless a wound of some sort is present. Because most of the tart cherries in New York are mechanically harvested, APB has become the major borer pest in some orchards in the Lake Ontario fruit growing region. These susceptible trees are not only damaged by APB, but likely serve as reservoirs from which

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scaffolds

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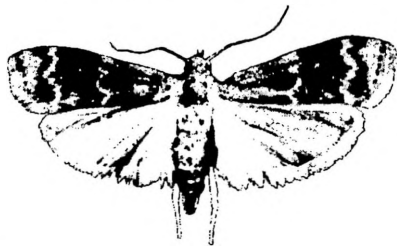
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other susceptible crops (such as peaches infected with canker diseases) may be infested.

In Michigan, directed trunk sprays are recommended in cherries at petal fall, when first generation adults are emerging. Flight phenology in New York is similar. Adults begin to emerge during bloom and the flight peaks around petal fall or shortly thereafter. Lorsban 4E used for lesser peachtree borers at petal fall will provide control against any APB that may be present. Results of New York field trials indicate that if APB number just a few per tree on average, this single application at petal fall would probably be adequate, given the economic constraints of tart cherry production. Under conditions of more severe pressure, a second application around the beginning of August would be warranted against the second generation larvae. This would also correspond with the timing for the last of the season's peachtree borer sprays.



A new fact sheet on American Plum Borer, published by the New York State IPM Program, is now available. The fact sheet gives physical descriptions (with photographs) and describes the biology and life history, damage caused, and sampling and management considerations. It is available from Cornell Media Services in Ithaca (Resource Center-GP, 7 Business and Technology Park, Cornell University, Ithaca, NY 14850. Fax: 607-255-9946) for \$1.50 per copy. Quantity discounts are available. Request Insect Identification Sheet No. I-24.

San Jose Scale

The San Jose scale (SJS) is a pest of tree fruit that attacks not only apple, but also pear, peach, plum, and sweet cherry. The minute SJS adult males emerge in the spring from beneath scale covers on the trees, usually during bloom, and mate. The first of this year's adults should be showing up any day

now in our traps at Geneva. The females produce live crawlers within 4–6 weeks of mating; these are bright yellow, very tiny insects resembling larval spider mites. About 24 hours after birth, the crawlers have walked or drifted to new sites and settled in by inserting their mouthparts into the tree and secreting a white waxy covering that eventually darkens to black.

SJS infestations on the bark contribute to an overall decline in tree vigor, growth, and productivity. Fruit feeding causes distinct red-purple spots that decrease the cosmetic appeal of the fruit. Control measures for SJS are recommended when the scale or their feeding blemishes have been found on fruit at harvest during the previous season. Insecticidal sprays are most effective when directed against the first generation crawlers, specifically timed for the first and peak crawler activity, which are usually 7–10 days apart.

The most reliable method of determining first appearance of the crawlers in your specific area is by putting sticky-tape traps on the tree limb near encrusted areas and checking them at least twice a week, starting about the second week of June. Alternatively, a degree-day accumulation of 310 (50°F base) from the date of first adult catch has also been shown to be reliable if the degree-days are known with some accuracy.

Effective materials for SJS control include Lorsban 50WP, Guthion, Imidan and PennCap-M. These sprays may also help in the control of OBLR, apple maggot, and codling moth. Coverage and control are generally better if the pesticide is applied dilute and in every row. SJS is frequently more of a problem in larger, poorly pruned standard size trees that do not receive adequate spray coverage. Dormant or delayed-dormant sprays of oil, or 1/2-inch green applications of Lorsban 4EC or Supracide will have helped prevent populations from getting established. Early season pruning is important for removing infested branches and suckers, as well as for opening up the canopy to allow better coverage in the tree tops where SJS are often concentrated. ♦♦

HUDSON
VALLEY

DISEASE UPDATE
(Dave Rosenberger,
Plant Pathology,
Highland)

Apple scab:

Recent apple scab infection periods at Highland:

May 9-10	12 hrs wetting, 51°F, 0.11 inches rain
May 13-14	14 hrs wetting, 47°F, 0.10 inches rain
May 17-18	15 hrs wetting, 47°F, 0.06 inches rain

❖❖ At the Hudson Valley Lab, our degree-day total (base 32°F) is now >860. According to the degree-day model for ascospore development and release, the supply of ascospores is now depleted and primary scab will no longer be a concern after the warm rain of May 18-19 (infection period still in progress as of this writing). However, fungicide protection should be maintained for several more weeks to prevent secondary infections on highly susceptible fruit and foliage.

Fire blight:

Temperatures have remained too cold to trigger fire blight infection periods according to the MaryBlyte model. Pears are at or past petal fall in the Hudson Valley, and the degree-hour accumulations used to estimate epiphytic infection potential never exceeded about 50% of the hours needed to trigger an infection. However, we had conditions that triggered "high risk" periods on May 14 and May 18. Pear growers who had blight last year should have applied at least one strep spray to protect trees during these high risk periods.

Black rot on pears:

Black rot causes fruit rots on pears as well as on apples. Last year, black rot appeared in some

blocks of Bosc pears. The control for black rot on pears is similar to that for apples, but the choice of fungicides is more limited. Captan and Topsin M are not registered on pears. Therefore, Benlate is the only really effective fungicide for controlling black rot on pears. The mancozeb fungicides will be adequate under light pressure, but not where inoculum levels or weather conditions favor development of black rot.

Black rot infections can occur throughout the season. Therefore, in blocks where black rot is a concern, Benlate should be added to mancozeb sprays beginning at petal fall and included with ziram sprays applied during the summer.

Fabraea on pears:

Fabraea leaf spot is a sporadic but very serious problem on Bosc pears. This disease is caused by a fungus, *Fabraea maculata*, that overwinters either in small (<one-quarter inch), indistinct cankers on pear twigs or in fallen leaves on the orchard floor. Fabraea first appears as small round purple leaf spots. Very few growers or fieldmen recognize the early Fabraea infections because they are rather nondescript leaf spots and there are very few of them at first. Each of these initial infections, however, can produce millions of slimy spores that are disseminated by splashing rain or by pear psylla and other insects. If spores are disseminated by insects, infection can occur during long dew periods in the absence of rain. Economic damage is usually caused by the rapid development of secondary infections in orchards where primary infections became established in late May or during June. If fungicide protection is lacking or inadequate, fruit can become infected during July and August. Severely infected Bosc trees can lose most of their leaves by late August. Bosc are more susceptible than Bartlett, but the disease can affect most pear cultivars.

Fabraea is relatively easy to control if fungicides are applied before the disease reaches

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epidemic proportions in an orchard. Mancozeb is the most effective fungicide for controlling *Fabreaa*. Mancozeb fungicides cannot be applied within 77 days of harvest, but they should be used until the 77-day preharvest interval is reached. Because captan is not labeled for pears, ziram is probably the best choice for controlling spread of *Fabreaa* during summer. Ferbam would be more effective but leaves a black residue on fruit. Benlate has been effective in some trials and ineffective in others. Ziram applied on a 3 week interval will provide adequate protection except where heavy rains remove fungicide residues, or where the disease was well established before the first spray was applied. Where disease pressure is very high (i.e., early infections were not controlled), sprays may need to be applied on a 14-day interval.

Pear growers should be especially careful to maintain fungicide coverage in pear blocks throughout June and early July. During this early summer period, fungicide programs on apples are often relaxed because the major scab threat has passed. However, this is the critical time period for controlling *Fabreaa* on pears. *Fabreaa* epidemics are usually reported in early July when the disease suddenly "explodes" in certain blocks. Fungicide protection during late June is necessary to prevent the early infections that provide inoculum for the July epidemics. ♦♦



PEST FOCUS

Geneva: 1st catch of **Oriental fruit moth** and **American plum borer**.

Highland: **Codling moth** and **lesser appleworm** 1st catch 5/16. **Flea beetles** and **apple blotch leafminer** observed on McIntosh.



PHENOLOGIES

Geneva:

Apple(Mac) - bloom
 Apple(Red Delicious) - king bloom
 Pear (Bartlett) - bloom
 Sweet cherry (Windsor) - petal fall
 Tart cherry (Montmorency) - bloom
 Plum - 25% petal fall
 Peach - 90% petal fall

Highland:

Apple (Mac) - 5 days post-petal fall
 Apple (Liberty) - petal fall
 Pear (Bartlett) - 7 days post-petal fall

INSECT TRAP CATCHES (Number/Trap/Day)

Geneva NY

HVL, Highland NY

	5/12	5/15	5/19		5/12	5/19
Green fruitworm	0.1	0	0	Green fruitworm	0	0
Redbanded leafroller	0.9	2.2	2.3	Redbanded Leafroller	5.9	3.2
Spotted tentiform leafminer	456	618	499	Pear psylla (eggs/leaf)	3.5	1.8
Lesser appleworm	0.6	10.3	7.6	Pear psylla (nymphs/leaf)	1.0	3.4
Oriental fruit moth (apple)	0	0.8*	0.8	Spotted tentiform leafminer	41.8	28.6
Oriental fruit moth (peach)	0	0	0.1*	Oriental fruit moth	3.2	4.2
San Jose scale	0	0	0	Lesser appleworm	0	0.3*
Codling moth	-	0	0	Codling moth	0	0.3*
American plum borer	0	0	0.4*			

(Dick Straub, Peter Jentsch)

* 1st catch

UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1- 5/19):	360	162
(Highland 1/1-5/19):	537	252

Coming Events:**Ranges:**

Apple grain aphid present	137-496	67-251
Comstock mealybug 1st gen. crawlers		
in pear buds	220-425	82-242
European red mite egg hatch complete	361-484	183-298
OBLR overwintered larvae active	149-388	54-201
Pear psylla eggs hatch	111-402	55-208
STLM 1st flight peak	180-544	65-275
Oriental fruit moth 1st flight peak	259-606	96-298
San Jose scale 1st catch	189-704	69-385
White apple leafhopper nymphs on apple	236-708	123-404
Codling moth 1st catch	273-805	141-491
Redbanded leafroller 1st flight peak	180-455	65-221
Green fruitworm flight subsides	170-544	75-280
McIntosh at petal fall	418-649	210-340

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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