scaffolds FRUIT JOURNAL

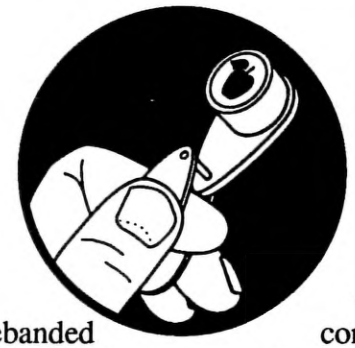
Update on Pest Management and Crop Development

June 1, 1998 VOLUME 7, No. 11 Geneva, NY

INSECTS

OUR SLANT ON THE ISSUE

OBLIQUE OBLOQUY (Art Agnello & Harvey Reissig, Entomology, Geneva)



❖❖ Moths of the obliquebanded leafroller have been flying in the Hudson Valley since 5/26, and in western N.Y. since 5/28–29, which establishes a record for earliest date of first catch in this area for as long as we've been keeping track (since the early 80's). First hatch is generally assumed to occur about 360 DD (base 43°F) after the flight starts, and as of today our values stand at 164 for Highland and 106 for Geneva. This brings us inevitably to the perennial question of how to approach management of OBLR populations, so a brief synopsis of last year's research efficacy trials might be appropriate.

Pesticide control programs for the first summer brood of OBLR were conducted in two orchards in 1997, one of Idared trees in Orleans Co., and one of Red Delicious in Niagara Co. All sprays were applied using two or more of the following timings: First Catch (6/20), First Hatch (7/1), Mid-Hatch (7/16), and "Final Window" (7/30):

- Confirm was tested in six schedules — (1): 4 sprays (all timings); (2): 2 sprays (First Catch + First Hatch); (3): 2 sprays (First Catch + Mid-Hatch); (4): 2 sprays (Mid-Hatch + Final Window); (5): 2 sprays (First Hatch + Mid-Hatch); and (6): 3 sprays (First Hatch, Mid-Hatch + Final Window). Confirm was also tested (on the 3-spray schedule, as in No. 6) using summer oil or Latron B-1956 as an adjuvant, compared with no adjuvants.
- SpinTor, the Dow spinosyn material that is anticipated to be available for commercial use in 1999, was compared in three treatments: 3 sprays (First Hatch, Mid-Hatch + Final Window) at a lower rate vs. a higher rate; and 3 sprays at the lower rate, mixed with Confirm at a lower rate.
- Lorsban 50W, Asana, and DiPel were applied as standard treatments using the 3-spray program.

OBLR infestations were considerably lighter in the Delicious orchard than in the Idareds, and the relative effectiveness of the different treatments tested varied considerably at the two locations. Most of the treatments in the Delicious trees, including the standard materials DiPel, Lorsban, and Asana, were quite effective in preventing fruit injury at harvest. In the Idared orchard, the most effective treatments were the Lorsban standard, and the 4-spray program of Confirm. Levels of fruit damage were generally similar (3.2–8.0%) in all of the programs set up to compare different schedules of Confirm. The addition of Latron-B or oil did not improve fruit protection in the Confirm treatments. Fruit damage in the SpinTor plots were likewise all comparable, ranging from 4.5–5.5%.

Our recommendations for OBLR management this year follow along lines similar to those we have given previously. Most materials available should be at their maximum potential effec-

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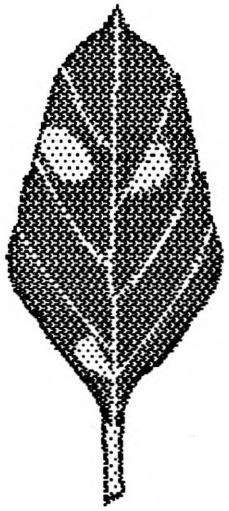
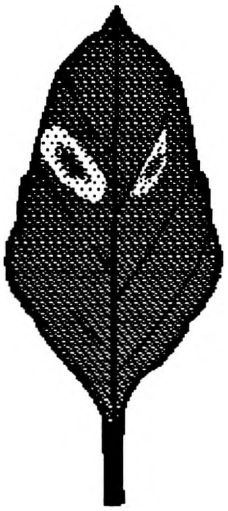
tiveness when used 2–3 times (in moderate or high pressure orchards, respectively) against the first summer brood larvae. Applications in a 3-spray program should be made at times approximately corresponding to periods of first hatch, mid-hatch, and 2 weeks after mid-hatch. In orchards where Confirm is being used, the suggested optimal treatment times are more specifically defined as 200–300, 500–600, and 800–900 DD (base 43°F) after first catch of the adults. Increased efficacy with any of the B.t. products may be obtained by making more low-rate applications at shorter intervals (e.g., 4–5 sprays of DiPel at 0.5 lb/A, on a 1-week interval). Standard materials such as Lorsban, Asana, and Penncap-M are likely to work better against populations not having a history of extensive exposure to them.

SPOTTED TENTIFORM LEAFMINER

As reflected in the pheromone trap counts, the 1st brood spotted tentiform leafminer flight is subsiding in both Geneva and Highland, and the 2nd brood should be starting any day. Because of the advanced season, this flight may have peaked and the eggs hatched by as early as the last week in June. This is the time at which time we recommend sampling leaves for the young (sap-feeding) mines of the second generation, to determine the need for a spray. Sampling should be conducted when the first of the mines reach the tissue-feeding stage.



sap feeding



tissue feeding

This is the time when most of the population is in the sap-feeding stage, and it usually occurs about 500–700 degree-days (base 43°F) after the start of the second moth flight. The larvae can be found easily, but at that stage they have not yet caused much damage to the leaf. You may wish to make a note of the 2nd flight's start date in your region, or use the Geneva date for accumulating degree-days in your locality if you don't happen to document this event in local traps.

EUROPEAN CORN BORER

Infestations of ECB in orchards are not very common, but when they do appear, as has been the case occasionally in N.Y., they can be quite serious. Considerable feeding damage will be noted in late June in terminals of newly planted apple and cherry trees, and early fruit feeding on apple is often evident by this time of the year. Infestations of this pest on apple are spotty and unpredictable; incidence in an orchard one year has no correlation with its likelihood to occur the next season. The ECB occurs as two separate strains in N.Y., usually designated by their pheromone chemistry. The univoltine "Z" race (peak

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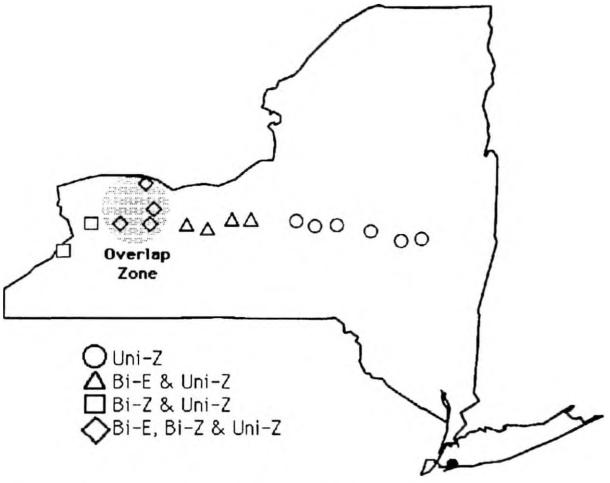
flight normally in mid-July), can be found almost continuously from Buffalo to Albany. The bivoltine "Z" race (peak flights in mid-June and mid-August) is present from Buffalo to about Rochester, and the bivoltine "E" race (also with peak flights in mid-June and mid-August) picks up from Rochester to Syracuse or thereabouts. In the Hudson Valley, all 3 races are probably present. What this means to most apple growers



is that most places have flights in the middle of June, July AND August. Susceptible orchards (young non-bearing, and others in proximity to sweet corn populations) must therefore be protected almost continuously during the summer, using something that's relatively long-lasting.

Damage to newly planted, non-bearing trees is caused by larval tunneling in the current season's growth. Browning of terminal leaves is a good indication of corn borer larval presence. The feeding will kill the terminal and disfigure the tree. Non-bearing, newly planted orchards normally do not receive the intensive cover spray program bearing orchards do; therefore, corn borer infestations can build up more easily in young orchards. Corn borer attack on young trees can occur from June through August. Damage to the fruit usually shows up in late summer, when the August flight of the bivoltine strain is active.

Bearing orchards are more likely to show some early corn borer damage on the fruit if growers relax their spray program in June or early July. However, most fruit feeding occurs between the last cover spray (mid-August) and harvest. Weedy sites provide plenty of alternative hosts for this insect, especially those containing broadleaf dock, ragweed, pigweed, smartweed, and barnyard grass. Penncap-M, Lannate, Lorsban and Asana can give very good control of ECB larvae, provided application is made before the caterpillars become concealed in the plant tissue. Potential problem plantings should be checked periodically in August for shoot infestations of this caterpillar, which is cream colored with a dark head.❖❖

PEAR ILLS OF '98

PEAR PROBLEMS: BLAST, FROST, AND FABRAEA

(Dave Rosenberger, Plant Pathology, Highland)

DISEASES

❖❖ Pear growers in eastern N.Y. will remember 1998 as a difficult year. Trees came into bloom about 15 days earlier than usual (April 16–26), and the crop was threatened by frost on numerous occasions. The cool, damp spring and associated light frosts created the potential for severe infections by *Pseudomonas syringae*, the bacterium that causes pear blast (See *Scaffolds* for 13 April 1998). In fact, symptoms of pear blast did show up in many orchards during early May. Symptoms included characteristic leaf spotting, blackening of flowers that then remained attached long after unpollinated flowers had abscised and fallen from the tree, developing fruitlets with blacked calyxes, and occasional wilting and death of entire spurs. Some observers reported that infections seemed less severe in orchards where streptomycin sprays had been applied prior to the onset of the cold damp weather.

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Despite localized frost damage and varying levels of pear blast, most pear orchards in the lower Hudson Valley appeared to have a good crop as of mid-May. As the small fruitlets began developing, however, severe injury became apparent on many Bosc fruitlets. (Bosc is the primary pear variety in eastern N.Y.). Injured Bosc fruitlets showed severe russetting that subsequently caused longitudinal cracking of the fruit. In some cases, longitudinal cracking has been supplemented with horizontal cracking that produces a cross-hatched appearance on the affected face of the fruit. The proportion of fruit affected varies from block to block but exceeds 75% in some blocks. Bartlett fruit have not developed the cracking problem although some Bartlett pears are showing typical frost rings.

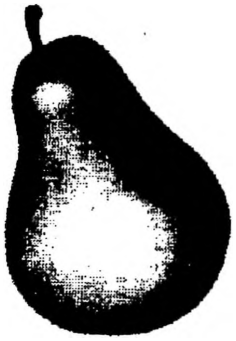
Even where the pear crop may have been annihilated, Bosc pear trees should be protected from Fabraea leaf spot during June. Fabraea leaf spot is a perennial threat to Bosc pears, but it can be especially severe following mild winters and wet springs (e.g., years like 1998). Fabraea leaf spot is one of the most "explosive" diseases of tree fruits. It often seems to appear almost overnight during June or early July. The actual chain of events that leads to a Fabraea epidemic is more complex. Epidemics usually occur when a few primary infections are not prevented during the three to four weeks after petal fall. These primary infections appear as nondescript, round leaf spots that usually escape notice. If fungicides are then omitted or inadequate during June or early July, a few primary infections can provide enough inoculum for a very rapidly developing epidemic. Foliar symptoms can appear almost simultaneously on many leaves throughout much of the tree canopy during late June or early July. The disease causes premature defoliation of trees where infection is severe.

Fabraea can build up more quickly than diseases like apple scab because older apple leaves gradually become resistant to infection by the apple scab fungus, whereas leaf age does not affect susceptibility to Fabraea. All leaves and fruit on Bosc pear trees remain susceptible to Fabraea leaf spot right up until harvest. Thus, when Fabraea leaf spot epidemics develop in early summer, all of the existing leaves can become infected over a short period of time if inoculum is present and trees are left unprotected.

To avoid Fabraea epidemics, Bosc pears should be protected with fungicide from petal fall through July 4. These sprays will prevent the primary infections that subsequently produce the abundant conidia that cause the epidemics. If trees are protected with fungicides applied on a 14–21-day interval through July 4, then the chances for late season development of Fabraea are minimized.

The mancozeb fungicides are the most effective for controlling Fabraea, but their use is restricted by the 77-day-to-harvest interval for mancozeb. Benlate has not provided consistent control of Fabraea, so the only effective fungicides for summer sprays are ziram and sulfur. Ziram alone is only moderately effective, especially if early season control has not been 100% effective. The combination of ziram plus sulfur (one pound of each per 100 gallons of dilute spray) has proven more effective for controlling flyspeck on apples than either product used alone. A ziram/sulfur combination might also prove effective for controlling Fabraea, but this combination has not been evaluated on pears.

Pears should be protected from Fabraea even in orchards where the pear crop has been lost to frost. If Fabraea causes premature defoliation, trees may fail to set fruit buds for next year and the high inoculum levels that result may cause problems in controlling Fabraea next year.❖❖



UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1- 6/1):	975	593
(Geneva 1997 1/1-6/1):	502	236
(Geneva "Normal" 1/1-6/1):	689	379
(Highland 1/1-6/1):	1162	707

Coming Events(Geneva):	**Ranges:**	
Obliquebanded leafroller 1st flight peak	869-1548	506-987
Cherry fruit fly 1st catch	650-1500	368-961
Dogwood borer 1st catch	798-1182	456-718
Pear psylla 2nd brood hatches	992-1200	609-763
STLM 2nd flight begins	795-1379	449-880
Lesser appleworm 1st flight subsides	818-1548	444-999
Oriental fruit moth 1st flight subsides	781-1574	442-1026
San Jose scale 1st gen. crawlers present	987-1247	569-784

PEST FOCUS

Geneva: Degree days (base 50°F) from 1st **codling moth** catch (5/7) = 352. Control sprays for **plum curculio** are no longer necessary whenever the last spray has been applied within 10-14 days after 340 DD_{50} have accumulated since McIntosh petal fall (5/11). 313 DD_{50} have accumulated since then.
1st **obliquebanded leafroller** trap catch in Western N.Y. = 5/28. DD (base 43 °F) since 1st catch = 106.

Highland: Degree days (base 50°F) from 1st **codling moth** catch (5/4) = 400. DD_{50} since McIntosh petal fall (5/4) in the Hudson Valley, for use in **plum curculio** spray decision = 400.
DD (base 43 °F) since 1st **obliquebanded leafroller** trap catch = 164. **Potato leafhopper** adults caught in traps.

INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

	5/26	5/29	6/1
Spotted tentiform leafminer	2.2	7.5	1.3
Redbanded leafroller	0.1	0.2	0
Oriental fruit moth (apple)	0.6	2.0	1.3
Lesser appleworm	1.9	2.0	5.8
Codling moth	6.5	41.3	31.8
San Jose scale	0.7	0.3	1.5
American plum borer	2.5	5.3	0.8
Lesser peactree borer	6.1	5.0	5.0
Peachtree borer	0.7	1.7	0.3
Pandemis leafroller	0.9*	4.5	2.2
Obliquebanded leafroller	0	4.7*	2.8

HVL, Highland, NY

	5/18	5/26	6/1
Pear psylla eggs/leaf	15.1	145	40
Pear psylla nymphs/leaf	1.8	3.3	3.0
Spotted tentiform leafminer	4.1	1.6	2.9
Redbanded leafroller	1.1	0.1	0
Oriental fruit moth	0.9	0.4	0.2
Lesser appleworm	0.4*	0.1	0.2
Codling moth	0.9	2.3	2.9
Obliquebanded leafroller	0	0.1*	2.3
Variegated leafroller	-	-	2.2*
Tufted apple budmoth	-	-	5.0*
Fruittree leafroller	-	-	0

* 1st catch

(Dick Straub, Peter Jentsch)

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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