scaffolds Update on Pest Management and Crop Development

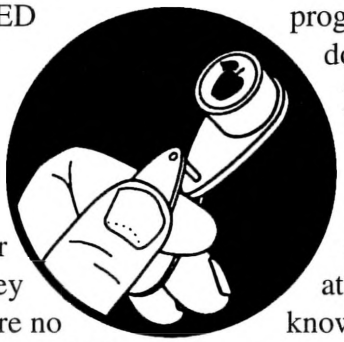
FRUIT JOURNAL

June 10, 1996 VOLUME 5 Geneva, NY

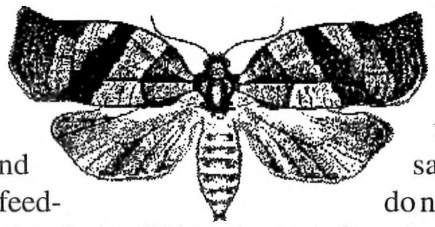
INSECTS

IN THE WINGS

OBLIQUEBANDED LEAFROLLER
(Art Agnello, Entomology, Geneva)



❖❖ The first moths this year were taken both in the Hudson Valley and in Wolcott today, 6/10; there are no other reports of adult catches in western N.Y. yet, but some pupae have been noted in more advanced sites, so they're due any time now. Larval development is all over the place, as usual (everything from 3rd to 6th instars). In western N.Y., it's a good time to hang a wing-type pheromone trap in problem apple blocks, to fix the date of first emergence in your specific area. Recall that, in orchards where populations are not annually at the "problem" level and you wish to use a threshold-based management strategy, we recommend sampling at 600 DD (base 43°F) after the first adult catch. It pays to keep an eye on the daily highs and lows for your area if you are doing your own trapping, in case our "normal" sampling date of July 10 turns out not to be accurate this year.



Larvae of the first OBLR summer brood cause two kinds of damage — foliar feeding injury and rolling of the leaves, and more important, injury caused by feeding on the surface of the developing fruits. This fruit damage is usually more serious than the spring feeding by overwintered larvae, because more of the fruit injured late in the season remains on the tree at harvest. Despite some rather aggressive campaigns we have seen this spring against the early generation larvae, you should keep in mind that even an excellent control program against the overwintered brood does not eliminate the possibility of a problem summer population. To maximize the effectiveness of any sprays against the first summer generation OBLR infestation, you should sample leaf and fruit clusters at the proper time. You will need to know the date of the first adult flight in your area; the value of knowing the precise date of this event on your own farm cannot be emphasized too strongly, and maintaining a few pheromone traps is not very difficult or time consuming. Check traps two or three times a week until the first adult is caught. Wait for 600 degree-days (43°F base) after this date. Degree-day (DD) values can be obtained simply by looking them up in the charts provided on pp. 105–106 of the 1996 Tree-Fruit Recommendations. If you do not have access to any max/min temperature information, use July 10 as an estimated best sample date in a "normal" year.

Guidelines for sampling can be found on pp. 88–89, 92 and 97 of the Recommends. Sample from random trees that are representative of the entire block, examining 10 expanding leaf terminals per tree. It is not necessary to pick the terminals. Record the number of samples infested with live larvae; do not count actual numbers of larvae in an infested terminal, and do not count damaged terminals that have no OBLR in them, or those containing only dead OBLR. To minimize bias, choose half of your samples from inside the tree canopy, including some watersprouts, and the other half from near the outside of the canopy. If the tree is more than 10 ft tall, try to include

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some clusters from the mid- to upper canopy area. Use the 3% infestation threshold for fresh fruit, and 10% for processing fruit. A "Stop Sampling and Treat" decision means that a spray to control OBLR is recommended at this time. A "Stop Sampling, Don't Treat" decision indicates that you should return in 3–5 days, after 100 more degree-days have accumulated, and repeat the sample. A second "Below Threshold" decision indicates that no treatment against this generation of OBLR is recommended. If you have one of those problem orchards mentioned above, you should probably be using a 3-spray Confirm program beginning at first hatch, as outlined in last week's issue [NOTE: As of press time, we have heard that the Confirm Section 18 has been approved for Pennsylvania; we anticipate that N.Y. will receive similar notification within 1–2 days]. In blocks where you're not going to elect such an approach, it is probably better to choose one of the other available products rather than trying some sort of "scaled-down" Confirm program, for which we could only make guesses about expected efficacy. Recommended materials include a B.t. product (such as Dipel, Biobit or MVP), Lorsban, Lannate, or possibly Asana or Penncap-M, if these products have still been giving adequate control in your orchards.❖❖

MODEL RUNS

Art Agnello

Plum Curculio

❖❖ As noted last week, plum curculio adults should be finished moving into the orchard to lay eggs by 340 DD (base 50°F) after petal fall. Any sites where this amount of heat units has accumulated should not need further cover sprays to protect the newly-set fruits. According to our weather records, the following are values corresponding to what's happening in a few representative sites:

Location	Petal Fall (McIntosh)	DD (base 50°F)
Geneva	May 28	189
Highland	May 20	318
Williamson	May 28	165
Albion	May 27	172
Waterport	May 30	135
Appleton	Mayu 31	120

Codling Moth

As of today, 6/10, a total of 318 DD have accumulated in the Hudson Valley since the "1st adult catch" biofix; in Geneva, the value is 189. The recommended spray window to control 1st generation codling moth is 250–360 DD. The more problematic 2nd generation has a control window starting 1260 DD from the same biofix date; we will endeavor to keep everyone posted.❖❖

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FLY FISHING

APPLE MAGGOT
(Art Agnello)

❖❖ It will soon be time to expect the first appearance of these adults (which are flies) in abandoned orchards, particularly in Eastern N.Y. (western N.Y. should be a couple of weeks from now if all goes normally). Crop scouts and consultants have been using traps to monitor apple maggot (AM) populations for a long time. Some orchards have such high AM populations that monitoring for them is a waste of time (that is, sprays are always needed, and on a calendar basis). But most commercial N.Y. orchards have moderate or erratic pressure from this pest, and monitoring to determine when damaging numbers of them are present can reduce the number of sprays used in the summer with no decrease in fruit quality.

Sticky yellow panels have been in use for over 20 years, and can be very helpful for determining when AM flies are present. These insects emerge from their hibernation sites in the soil from mid-June to early July in New York, and spend the first 7–10 days of their adult life feeding on substances such as aphid honeydew until they are sexually mature. Because honeydew is most likely to be found on foliage, and because the flies see the yellow panel as a "super leaf", they are naturally attracted to it during this early adult stage. A few of these panels hung in an orchard can serve as an early-warning device for growers if there is an AM emergence site nearby.

Many flies pass this period outside of the orchard, however, and then begin searching for fruit only when they are ready to mate and lay eggs. That means this advance warning doesn't always have a chance to take place — the catch of a single (sexually mature) fly then means that a spray is necessary immediately to adequately protect the fruit. This can translate into an undesirable risk if the traps are not being checked daily, which is often the case.

To regain this time advantage, researchers have developed newer traps that have the form of a "super apple" — large, round, deep red, and sometimes even with the smell of a ripe apple — in an attempt to catch that first AM fly in the orchard. Because this kind of trap is so much more efficient at detecting AM flies when they are still at relatively low levels in the orchard, the traps can usually be checked twice a week to allow a one- or two-day response period (before spraying) after a catch is recorded, without incurring any risk to the fruit. In fact, research done in Geneva over a number of years indicates that some of these traps work so well, it is possible to use a higher threshold than the old "one fly and spray" guidelines recommended for the panel traps. Specifically, it was found that sphere-type traps baited with a lure that emits apple volatiles attract AM flies so efficiently, an insecticide cover spray is not required until a threshold of 5 flies per trap is reached.

The recommended practice is to hang three volatile-baited sphere traps in a 10- to 15-acre orchard, on the outside row facing the most probable direction of AM migration (south, or else toward woods or abandoned apple trees). Then, periodically check the traps to get a total number of flies caught; divide this by 3 to get the average catch per trap, and spray when the result is 5 or more. In home apple plantings, these traps can be used to "trap out" local populations of AM flies by attracting any adult female in the tree's vicinity to the sticky surface of the red sphere before it can lay eggs in the fruit. Research done in Massachusetts suggests that this strategy will protect the fruit if one trap is used for every 100–150 apples normally produced by the tree (i.e., a maximum of three to four traps per tree in most cases).

A variety of traps and lures are currently available from commercial suppliers; among them: permanent sphere traps made of wood (from Gemplers Pest Management Supply) or stiff plastic (from

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Great Lakes IPM or Gemplers Pest Management Supply), disposable sphere traps made of flexible plastic (from Olson), and sphere-plus-panel traps (from Ladd). The disposable traps are cheaper than the others, of course, but only last one season. Ladd traps are very effective at catching flies, but are harder to keep clean, and performed no better than any other sphere trap in field tests. Brush-on stickum is available to facilitate trap setup in the orchard. Apple volatile lures are available from Ladd Industries (septa) and Consep (membranes). Addresses of these suppliers follow:

Consep, Inc., 213 S.W. Columbia St., Bend, OR 97702-1013, 1-800-367-8727

Gemplers Pest Management Supply, P.O. Box 270, Blue Mound Rd., Mount Horeb, WI 53572, 1-800-272-7672

Great Lakes IPM, 10220 Church Road NE, Vestaburg, MI 48891, 1-800-235-0285

Ladd Research Industries, Inc., P.O. Box 1005, Burlington, VT 05402-1005, 802-878-6711

Olson Products, Inc., P.O. Box 1043, Medina, OH 44258, 216-723-3210

By preparing now for the apple maggot season, you can simplify the decisions required to get your apples through the summer in good shape for harvest.❖❖

DISEASES

DISEASE UPDATE

(Dave Rosenberger, Plant Pathology, Highland)

Apple Scab

❖❖ Scab lesions are present on cluster and early terminal leaves in a few orchards throughout eastern NY. Fruitlets and new terminal leaves are still very susceptible to secondary scab infection. What is the best way to prevent scab from spreading to fruit?

Applying captan plus an SI fungicide (Rubigan or Nova) in back-to-back sprays about 7–10 days apart is probably the most effective way to shut down apple scab that appears on leaves during late May and early June. The SI fungicides reduce sporulation and protect new leaves, thereby reducing the total amount of inoculum available for secondary infections. However, SI fungicides are less active on fruit than on leaves. Captan is the best bet for protecting fruitlets when primary scab is present in the tree. Captan is slightly more effectively than the mancozeb fungicides when scab inoculum is abundant. Mancozeb should be substituted for captan where summer oils are being applied, but remember to observe the 77 day preharvest interval and 21 lb/A/year limits for mancozeb.

Captan alone (applied at 4–6 lb/A of Captan 50W or the equivalent of other captan formulations) will effectively control secondary scab provided the weather cooperates. A few days of hot, dry weather after sprays are applied seems to increase the effectiveness of captan. However, if June weather stays cool and wet, then captan applied alone may fail to provide complete control of scab in orchards with abundant secondary inoculum.

Applying captan plus a benzimidazole fungicide (Benlate or Topsin M) in back-to-back applications is an effective and less expensive alternative to the captan-SI combination in areas where scab has not developed resistance to benzimidazoles. Benlate and Topsin M are NOT reliable for scab control in the Hudson Valley and most other areas of New York State because benzimidazole-resistant isolates are present in many orchards. However, in the Champlain Valley and parts of New England, the benzimidazoles have rarely been used for scab control. Last week we assayed scab samples from a large

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orchard in the Champlain Valley and found that none of the 49 isolates we recovered were resistant to benzimidazole fungicides. In the absence of benzimidazole-resistance, a captan-benzimidazole combination will probably be more effective than a captan-SI combination because the benzimidazoles provide better protection of fruitlets than do the SI fungicides. Unfortunately, using benzimidazoles in eradicant or "bail-out" treatments increases selection pressure for resistant isolates and increases the likelihood that the benzimidazoles will not work against scab the next time a "bail-out" or clean-up treatment is needed.

In an ideal world, bail-out treatments in orchards where benzimidazole fungicides still work should probably consist of a 3-way mix of an SI fungicide plus a benzimidazole fungicide plus captan. The benzimidazole theoretically would act both as a contact fungicide to supplement the captan and as a limited systemic to supplement the SI fungicide. However, the cost of such a 3-way mix would be less than ideal, and "bail-out" treatments would never be needed in an ideal world anyway.

Fire Blight

The MaryBlyt model predicted that blossom blight symptoms should appear between June 1 and June 6 as a result of three blight infection periods that occurred on May 20, 22 and 23. Rome trees were at risk during the May infection periods, but pears and most other apples were past petal fall before the infection periods occurred. The gross symptoms of shoot wilting and die-back that are visible from the tractor seat frequently are not detected until several days after the MaryBlyt predictions for first blossom blight symptoms. Thus, some fire blight may appear in Romes this week.

Nectria Twig Blight

...is already prevalent in some blocks of Rome trees. This disease can easily be confused with fire blight. Nectria causes terminal shoots to wilt and die, with shoot tips forming "shepherd's crooks" similar to those caused by fire blight. The disease occurs when the fungus *Nectria cinnabarina* invades pulled or broken stems after harvest and progresses into the twigs below the stem. Infection may be promoted by a cold shock in late fall or early winter. The quick freeze last fall that caused trees to retain leaves through mid-winter may have contributed to the current outbreak of Nectria twig blight. After invading pulled or broken stems, the fungus continues to grow into the fruiting node and eventually girdles the twigs. Terminal shoots beyond the infection point wilt suddenly after the twig is girdled. During late June and July, bright orange fruiting structures 2–3 mm in diameter will erupt through the bark of the node just below the pulled stem. Nectria twig blight is most common on Romes and other cultivars that have enlarged nodes where flowers are produced.

Nectria twig blight can be differentiated from fire blight by the orange fruiting structures that are unique to Nectria and by the fact that the cankers associated with nectria twig blight rarely extend more than an inch or two back into the tree from the affected node, whereas fire blight cankers can "run" considerably further. When affected twigs are sliced open, there is usually a sharp transition between healthy wood and necrotic tissue in a nectria twig blight canker, whereas fire blight cankers frequently have indistinct canker margins at this time of year. Diagnosis can be complicated when both diseases are present in the same orchard. The presence of nectria twig blight makes scouting for fire blight very difficult.

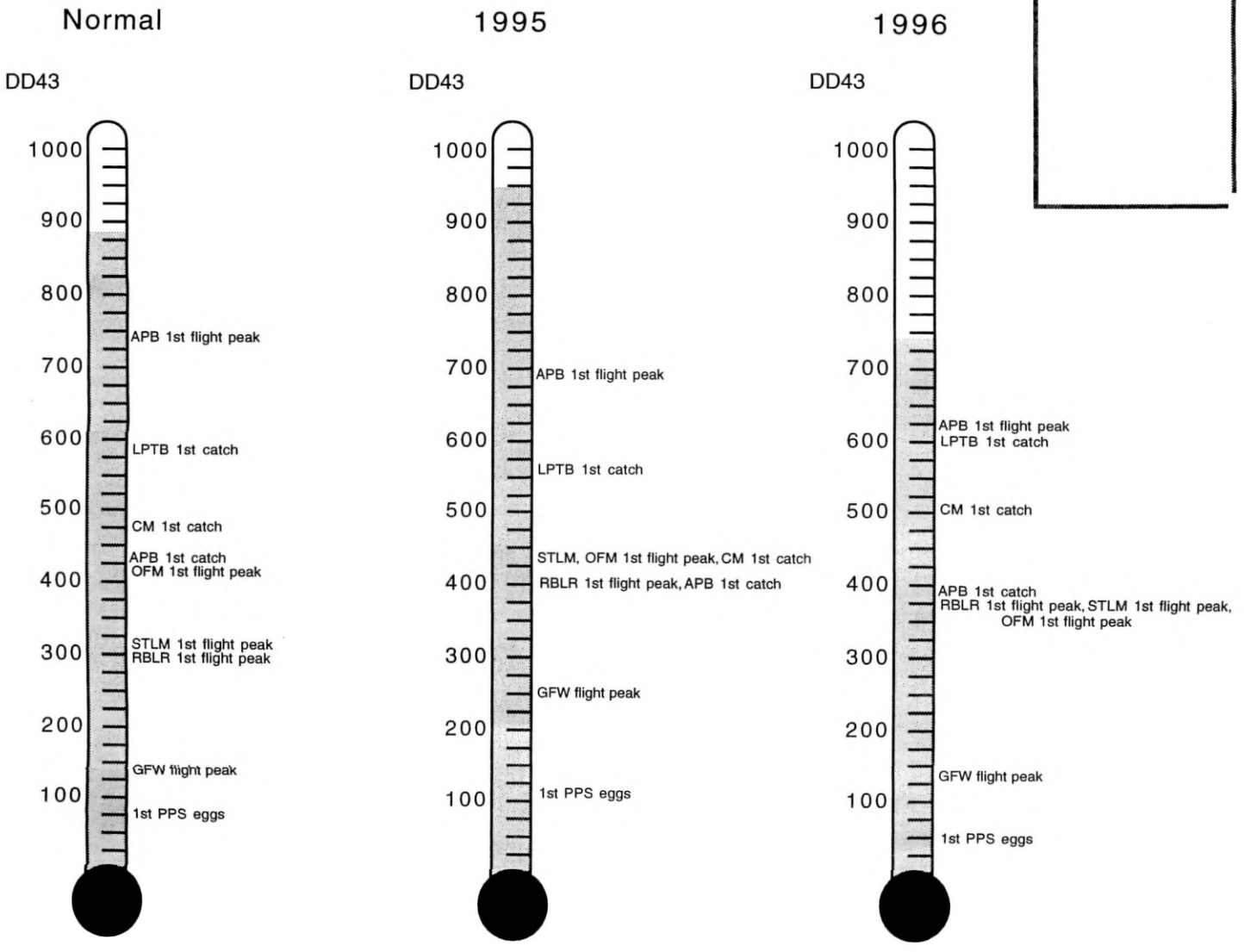
Although the wilted and dying shoots can make a tree look sick, Nectria canker generally causes minimal damage to trees. No fungicides have proven effective for limiting spread of this disease. Nectria twig blight occurs sporadically, but infections are usually most common and abundant in low-lying blocks with poor air drainage (i.e., blocks subject to cold damage.)❖❖

WHAT'S HAPPENING?

PROGRESSION OF EVENTS
(Dave Kain and Art Agnello, Entomology, Geneva)

❖❖ Now that we finally have a few pest events to include, here's our comparison of events so far this year with last season and the "normal":

DD base 43°F
AS OF 6/10



INSECT TRAP CATCHES (Number/Trap/Day)

Geneva NY

	6/3	6/6	6/10
Redbanded leafroller	0.1	0.3	0
Spotted tentiform leafminer	63.4	29.2	15.4
Oriental fruit moth	1.5	1.8	0.8
Lesser appleworm	5.3	0.8	0.5
Codling moth	6.3	5.3	5.5
San Jose scale	0	0.5*	0
American plum borer	1.6	1.7	1.8
Lesser peachtree borer (cherry)	0.1*	0.2	0
Lesser peachtree borer (peach)	0	0.2*	0.8

HVL, Highland NY

	5/28	6/3	6/10
Redbanded leafroller	0.6	0.6	0
Spotted tentiform leafminer	5.1	0.3	1.8
Oriental fruit moth	0.9	1.2	1.4
Lesser appleworm	0.2	0.2	0.1
Codling moth	2.8	4.1	6.8
Fruittree leafroller	0	0	0
Tufted apple budmoth	0.4	0.8	0.6
Obliquebanded leafroller	-	0	0.1*
Sparganothis fruitworm	-	0	0.1*

*=1st catch

(Dick Straub, Peter Jentsch)

PEST FOCUS

Albion: **Black cherry fruit fly** present.
Wolcott: 1st catch of **Obliquebanded Leafroller**.
Highland: 1st **Rose Leafhopper** adult observed on apple. 1st catch of **Obliquebanded Leafroller.**

UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1- 6/10):	742	462
(Highland 1/1-6/10):	1104	658

Coming Events:	**Ranges:**	
American plum borer 1st flight peak	360-962	134-601
STLM 1st flght subsides	489-978	270-636
Codling moth 1st flight peak	547-1326	307-824
San Jose scale 1st flight peak	581-761	308-449
Obliquebanded leafroller 1st catch	686-1059	392-681
European red mite summer egg hatch	773-938	442-582

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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