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Update on Pest Management and Crop Development

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INSECTS

BUGEYE WITNESS

ORCHARD RADAR DIGEST

Geneva Predictions:

Roundheaded Appletree Borer

RAB adult peak emergence: June 15.
RAB egglaying begins: June 7. Peak egglaying period roughly: June 28 to July 13.
First RAB eggs hatch roughly: June 22.

Codling Moth

Codling moth development as of June 19: 1st generation adult emergence at 88% and 1st generation egg hatch at 45%.
1st generation 20% CM egg hatch: June 14 (= target date where one spray needed to control 1st generation codling moth).

Obliquebanded Leafroller

Where waiting to sample late instar OBLR larvae is not an option (OBLR is known to be a problem, and will be managed with insecticide application against young larvae):
Early egg hatch and optimum date for initial application of B.t., Intrepid, SpinTor or other insecticide with comparable efficacy against OBLR (*with follow-up* applications as needed) is: June 26.
Where waiting to sample late instar OBLR larvae to determine need for treatment is an option, or to check on results from earlier sprays: Optimum sample date for late instar summer generation OBLR larvae: July 6.

Oriental Fruit Moth

2nd generation OFM flight begins around: July 2.

San Jose Scale

1st generation SJS crawlers appear: June 20.

Spotted Tentiform Leafminer

2nd generation flight begins around: June 18.

MODEL BUILDING:

Insect model degree day accumulations:
DD50 since petal fall (End of **Plum Curculio** oviposition @ 308):
GENEVA: 375
HIGHLAND: 449
DD50 since March 1 = (**San Jose Scale** 1st generation crawlers emerge @ 500.)
GENEVA: 625
HIGHLAND: 684
DD43 since 1st **Obliquebanded Leafroller** (1st larval hatch @ 360):
GENEVA: 180
HIGHLAND: 283

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IN THIS ISSUE...

SWATTER UP

FLY BALL
(Art Agnello and Harvey Reissig, Entomology, Geneva)

❖❖ Once again, it is nearly time to expect the first appearance of apple maggot (AM) flies in volunteer apple stands and abandoned orchards, particularly in eastern N.Y.; western N.Y. could be about a week later, or not, depending on what kind of temperatures we get over the next week or so. Crop scouts and consultants have been using traps to monitor AM populations for a long time, but this tactic, useful as it is, nevertheless is not recommended in all cases. Some orchards have such high or such low AM populations that monitoring for them is a waste of time. That is, sprays are needed predictably every season in some blocks, and on a calendar basis; conversely, they are rarely needed at all in other blocks. However, most commercial N.Y. orchards have moderate or variable pressure from this pest, so 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 30 years, and can be very helpful in 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 a likely 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 that this advance warning doesn't always have a chance to take place -- the catch of a single (sexually mature) fly then indicates 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, something that is not always possible during a busy summer.

To regain this time advantage, researchers developed newer traps that have the form of a "super apple" -- large, round, deep red, and often accompanied by 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 has been found that sphere-type traps baited with a lure that emits apple volatiles attract AM flies so efficiently that

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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 (towards woods or abandoned apple trees, or else towards the south). 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. Be sure you know how to distinguish AM flies from others that will be collected by the inviting-looking sphere. There are good photos for identifying the adults on the Apple Maggot IPM Fact Sheet (No. 102GFSTF-I8); check the web version at: http://www.nysipm.cornell.edu/factsheets/treefruit/pests/am/am.asp. 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 density that makes this strategy fairly impractical on the commercial level.

A variety of traps and lures are currently available from commercial suppliers; among them: permanent sphere traps made of wood or stiff plastic, disposable sphere traps made of flexible plastic, and sphere-plus-panel ("Ladd") traps. 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 our field tests. Brush-on stickum is available to facilitate trap setup in the orchard. Apple volatile lures are available for use in combination with any of these traps. These tools are available from a number of orchard pest monitoring suppliers, among them:

- Gempler's Inc., 100 Countryside Dr., PO Box 328, Belleville, WI 53508; 608-424-1544, Fax, 608-424-1555
- Great Lakes IPM, 10220 Church Rd. NE, Vestaburg, MI 48891; 800-235-0285, Fax 989-268-5311
- Harmony Farm Supply, 3244 Gravenstein Hwy, No. B, Sebastopol, CA 95472; 707-823-9125, Fax 707-823-1734
- Ladd Research Industries Inc., 83 Holly Court, Williston, VT 05495; 800-451-3406, Fax 802-660-8859
- Olson Products Inc., PO Box 1043, Medina, OH 44258; 330-723-3210, Fax 330-723-9977
- Scenturion Inc., P.O. Box 585, Clinton, WA 98236; 360-341-3989, Fax 360-341-3242

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. ❖❖

WHITE OUT

WOOLLY BULLY
(Art Agnello, Entomology, Geneva)

❖❖ Jim Eve reports that infestations of woolly apple aphid (WAA) are already starting to show up in problem sites in western NY. WAA colonizes both aboveground parts of the apple tree and the roots and commonly overwinters on the roots. In the spring, nymphs crawl up on apple trees from the roots to initiate aerial colonies. Most nymphs are born alive to unmated females on apple trees during the summer. Colonies initially build up on the inside of the canopy on sites such as wounds or pruning scars and later become numerous in the outer portion of the tree canopy, usually during late July to early August.

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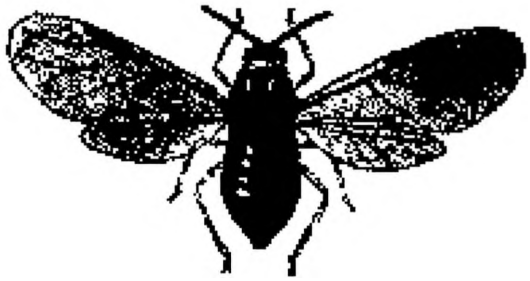
Aerial colonies occur most frequently on succulent tissue such as the current season's growth, water sprouts, unhealed pruning wounds, or cankers. Heavy infestations cause honeydew and sooty mold on the fruit and galls on the plant parts. Severe root infestations can stunt or kill young trees but usually do not damage mature trees. Large numbers of colonies on trees may leave sooty mold on the fruit, which annoys pickers because red sticky residues from crushed WAA colonies may accumulate on their hands and clothing.

During late June, water sprouts, pruning wounds, and scars on the inside of the tree canopy should be examined for WAA nymphs. During mid-July, new growth around the outside of the canopy should be examined for WAA colonies. No economic threshold has been determined for treatment of WAA, but they are difficult to control, so the occurrence of any colonies should prompt the consideration of some remedial action.

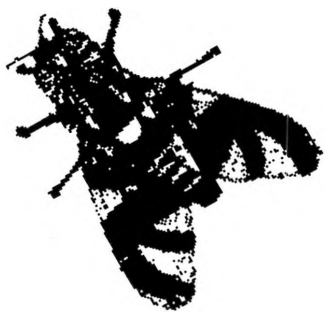
WAA is difficult to control with insecticides because of its waxy outer covering and tendency to form dense colonies that are impenetrable to sprays. WAA is resistant to the commonly used organophosphates, but other insecticides are effective against WAA, including Diazinon and Thiodan/Thionex, and some newer products such as Assail offer some suppression. Additionally, Lorsban trunk applications for borers made at this time will effectively control any crawlers that might be contacted by these sprays. ❖❖



PEST FOCUS

Geneva:
First **peachtree borer** trap catch today, 6/12. **Spotted tentiform leafminer** 2nd flight began today.

Highland:
Plum curculio immigration is complete. **San Jose scale** crawlers have emerged. First **apple maggot** caught on a white tent trap.



INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

	6/12	6/15	6/19
Redbanded leafroller	0.0	0.0	0.0
Spotted tentiform leafminer	0.0	0.0	3.9*
Lesser appleworm	0.0	0.3	2.3
Oriental fruit moth	0.0	0.3	0.1
Codling moth	0.0	0.0	0.0
San Jose scale	0.0	0.0	0.0
American plum borer	0.0	0.7	0.5
Lesser peachtree borer	0.0	0.2	1.0
Dogwood borer	0.2	–	0.7
Pandemis leafroller	0.3	0.0	1.0
Obliquebanded leafroller	0.1*	0.2	0.3
Peachtree borer	–	–	0.9*

Highland, NY

	6/5	6/19
Spotted tentiform leafminer	3.3	84.9
Oriental fruit moth	0.8	0.1
Codling moth	0.2	2.5
Obliquebanded leafroller	0.1*	0.5
Fruit tree leafroller	0.0	0.1
Tufted apple budmoth	1.0	0.0
Variegated leafroller	0.8	0.0
Lesser peachtree borer	0.1	2.4
Dogwood borer	0.0	0.1
Lesser appleworm	4.2	1.7
Apple maggot	0.0	0.1*

* first catch

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UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1–6/19/06):	1127	652
(Geneva 1/1–6/19/2005):	1084	668
(Geneva "Normal"):	1088	645
(Geneva 1/1–6/26 Predicted):	1306	769
(Highland 3/1–6/19/06):	1155	684

Coming Events:	Ranges(Normal±StDev):	
Obliquebanded leafroller 1st flight peak	943–1313	565–827
Obliquebanded leafroller summer larvae hatch	1038–1460	625–957
Spotted tentiform leafminer 2nd flight begins	952–1184	560–740
Oriental fruit moth 2nd flight begins	1272–1564	784–1020
Peachtree borer 1st catch	770–1358	439–841
San Jose scale 1st gen. crawlers present	1033–1215	619–757
Lesser appleworm 1st flight subsides	950–1436	570–920
Pear psylla 2nd brood nymphs hatch	967–1185	584–750
American plum borer 1st flight subsides	1163–1549	698–1032
Apple maggot first catch	1191–1597	750–1034

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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