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Update on Pest Management
and Crop Development

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

June 25, 2007

VOLUME 16, No. 15

Geneva, NY

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**BLOWIN'
IN THE
WIND**

**ORCHARD
RADAR
DIGEST**



Oriental Fruit Moth

2nd generation flight begins around:
June 27.

2nd generation first treatment date, if
needed, July 6.

Redbanded Leafroller

2nd flight begins around: June 28.

Spotted Tentiform Leafminer

Rough guess of when 2nd generation sap-feeding
mines begin showing: July 2.

Optimum first sample date for 2nd generation sap-
feeding mines is: July 9. ❖❖

Geneva Predictions:

Roundheaded Appletree Borer and Dogwood Borer

Peak egg-laying period roughly: June 20 to July 6.

RAB peak egg hatch roughly: July 5 to July 26.

First Dogwood borer egg hatch roughly: June 24.

Codling Moth

Codling moth development as of June 25: 1st
generation adult emergence at 99% and 1st gen-
eration egg hatch at 82%.

Lesser Appleworm

2nd flight begins around: July 6.

Obliquebanded Leafroller

Where waiting to sample late instar OBLR lar-
vae is not an option (= where OBLR is known
to be a problem, and will be managed with in-
secticide 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):
June 25.

Where waiting to sample late instar OBLR lar-
vae to determine need for treatment is an op-
tion, or to check on results from earlier sprays:

Optimum sample date for late-instar summer
generation OBLR larvae: July 5.

If first OBLR late-instar larvae sample is below
threshold, date for confirmation follow-up: July 8.

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INSECT TRAP CATCHES

PEST FOCUS

THERMAL NERMAL

MODEL BUILDING

Insect model degree day accumulations:

Codling Moth (Treatment period for the 2nd generation starts at 1260 DD base 50°F after biofix):

<u>Location</u>	<u>Biofix</u>	<u>DD (as of 6/25)</u>
Highland	May 14	736
Clintondale	May 14	659
Geneva	May 17	586
Sodus	May 17	537
Ithaca	May 24	489
Lansing	May 24	537
Albion	May 25	561
Williamson	May 25	498
Appleton (South)	May 25	544
Appleton (North)	May 25	501
Waterport	May 28	561

Obliquebanded Leafroller (targeted spray application at newly hatching larvae, predicted at 360 DD base 43°F after biofix):

<u>Location</u>	<u>Biofix</u>	<u>DD (as of 6/25)</u>
Highland	6/1	556
Clintondale	6/4	478
Albion	6/7 (est'd)	462
Sodus	6/9	360
Appleton (South)	6/10 (est'd)	373
Williamson	6/10 (est'd)	342
Geneva	6/11	337
Lansing	6/11	324
Ithaca	6/11	293

[NOTE: Consult our mini expert system for arthropod pest management, the Apple Pest Degree Day Calculator:

<http://www.nysaes.cornell.edu/ipm/specware/newa/appledd.php>

Find accumulated degree days between dates with the Degree Day Calculator:

<http://www.nysaes.cornell.edu/ipm/specware/newa/>

Powered by the NYS IPM Program's NEWA weather data and the Baskerville-Emin formula]

PEST FOCUS

Geneva:

Spotted tentiform leafminer 2nd flight began 6/21.

Highland:

Pear psylla nymphs at above threshold numbers. High numbers of **potato leafhopper** observed on McIntosh. 1st **apple maggot** caught on baited spheres. **Redbanded leafroller** 2nd flight beginning.

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This newsletter is available on the World Wide Web at: <http://www.nysaes.cornell.edu/ent/scaffolds/>

STICK
'EM
TO IT

ON THE FLY
(Harvey Reissig and
Art Agnello, Entomology,
Geneva)

❖❖ Once again, it is 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 not time-efficient. 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 40 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 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/fact-sheets/treefruit/pests/am/am.asp>. In home apple

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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. ❖❖

HOT DOGS

THE SUMMER WIND
(Art Agnello and
Dave Kain, Entomology,
Geneva)

Mites

Mites generally have not been too apparent yet in most places, but with the generally typical summer weather patterns we’ve been having, European red mites should be starting to build in their favorite haunts before long. This is still the early part of the season, and trees are quite sensitive to big mite buildups right now (the threshold in apples is 2.5/leaf in June and 5.0/leaf in July), so please do not pass up this opportunity to examine the foliage of all your tree fruits, not just apples, for emerging populations of either ERM or even twospotted spider mites. Two-spots, especially, respond quite rapidly to high temperatures. Simplified sampling charts can be found on pp. 72–73 of the Recommendations. Options for confronting threshold populations include Acramite, Kanemite, Nexter, and Zeal.

Obliquebanded Leafroller

Although early season populations of OBLR did not seem to be as high as they have been traditionally, this durable pest has repeatedly demonstrated its ability to persist and rebound with little fanfare. We caught the first moths between June 7–11 in most WNY sites, and June 1 in the Hudson Valley, which means that the 360 DD (base 43°F) timing for expected first hatch occurred either last week or will do so by the first part of this week. In problem blocks, this would be a prudent time for an initial B.t. or Intrepid application; low- or variable-pressure blocks can wait until 600 DD, when a visual sample for infested terminals can provide information on the need for a treatment (your attention is directed to sampling guidelines on p. 70 of the Recommendations). This year, Proclaim joins the list of insecticidal alternatives, which is rounded out by SpinTor and a variety of pyrethroids. Proclaim also provides suppression of mites.

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San Jose Scale

The first crawlers of the season should be showing up in tape traps by now, for those inclined to set them out, so this would be an advisable time for the first application of an effective insecticide against the most susceptible stage of this recently rejuvenated pest. Materials recommended include Esteem and Provado, although OPs such as Guthion and Imidan are capable of some control if well timed.

Comstock Mealybug

It also shouldn't be long before we start seeing adult Comstock mealybugs in pear foliage, followed by their invasive crawler offspring. The crawlers are the most susceptible stage for chemical control, which we expect sometime during the next couple of weeks, especially in the Hudson Valley. Adults tend to congregate on older branches at a pruning scar, a node, or at a branch base, as well as inside the calyx of pears. Second- (summer) generation nymphs are present from about mid-July to mid-September.

To date, the Comstock mealybug has been a problem to growers of processing pears because of contamination and aesthetic reasons. An infestation generally requires one or more insecticide sprays during the growing season, directed against the migrating crawlers. Examine the terminal growth for crawler activity periodically throughout the summer. Crawler and adult female activity can also be monitored by wrapping double-sided tape such as white carpet tape around low scaffold branches and inspecting for crawlers that have been caught by the tape. They can be recognized with a hand lens or, with some experience, by the unaided eye.

In early August, we'll advise an application of a material such as Provado, Diazinon, Actara, Calypso or Assail to control this insect.

Dogwood Borers

Adults should be laying eggs in susceptible apple orchards now (those with succulent burrknot tissue or suckers). The larva of this clearwing moth

feeds on apple trees, primarily on burrknot tissue on clonal rootstocks. Burrknots are aggregations of root initials that can develop on the above-ground portion of the rootstock; all commercial dwarfing and semi-dwarfing rootstocks have a tendency to develop burrknots. Some chemicals with hormone effects, such as NAA, can increase the expression of burrknots, as will failure to keep the area around the trunk weed-free and open to sunlight. White latex paint brushed on the exposed portion of the rootstock will prevent new infestations of the borers, and also protect against southwest injury to the bark.

Dilute trunk applications of an insecticide with good residual activity can provide control of established infestations. Lorsban 75G, 4E or 50W may be used postbloom as a directed trunk spray in N.Y. for borer control in apples. We feel that Lorsban is the best tool we presently have for this use, and early to mid-July would be a good time to take advantage of this welcome opportunity to use it on apples to control both dogwood borer and the second generation of American plum borer.

Peachtree Borers

If you're not using pheromone disruption ties (Isomate-LPTB) against peachtree and lesser peachtree borers, this is the time of the season when a trunk application of a pesticide should be made against these pests in cherries and peaches. A coarse spray directed at the trunk and scaffold branches gives the best protection against ovipositing adults; shutting off all but the bottom nozzles on a speed sprayer won't do an effective job. Use Lorsban (do not spray the fruit), Thionex, or a pyrethroid (Ambush, Asana, Baythroid, Pounce, Proaxis, or Warrior; Danitol is NOT registered in stone fruits). ❖❖

ON
TAP

EVENT LINEUP

❖❖ Normally we wouldn't publicize all of these events so far in advance, but this year there are a number of large public gatherings, so to keep from getting them confused on your calendar, we are posting announcements now and periodically during the summer as a reminder of the schedule. In order:

Cornell Fruit Field Day

Cornell University will host the 2007 Fruit Field Day and Equipment Show at the New York State Agricultural Experiment Station in Geneva, NY, on Wednesday, July 25, from 8:00 a.m. to 5:00 p.m. This is one of several events that commemorates the 125th anniversary of the Experiment Station, which opened its doors on March 1, 1882.

Fruit growers, consultants, and industry personnel are invited to tour field plots and laboratories and learn about the latest research and extension efforts being carried out by researchers on the Geneva, Highland and Ithaca campuses. The focus will be on all commodities key to New York's \$300 million fruit industry: apples, grapes, raspberries, strawberries, peaches, pears and cherries.

During lunch, equipment dealers will showcase the latest techniques to improve sprayer deposition and reducing drift. Representatives from various companies will advise growers on the latest technologies.

The event will be held on the Experiment Station's Fruit and Vegetable Research Farm South, 1097 County Road No. 4, 1 mile west

of Pre-emption Rd. in Geneva, NY. Signs will be posted. Attendees will be able to select from tours of apples, stone fruits, small fruits, and grapes, as well as a tour of the Experiment Station's labs and greenhouses. Admission is free and lunch is provided courtesy of industry sponsors. Pre-registration is encouraged.

For sponsorship and exhibitor information, contact Debbie Breth at 585-798-4265 or dib1@cornell.edu. More information will be posted to <http://www.nysaes.cornell.edu/hort/fieldday/> in the very near future.

For additional information, contact Nancy Long at 315-787-2288 or NPL1@cornell.edu. Register on line at: <http://www.nysaes.cornell.edu/hort/field-day/index.html>

NY Fruit Pest Control Field Day

We're more than 2 months away from the annual N.Y. Fruit Pest Control Field Day, which will take place during Labor Day week on Sept. 5 and 6, as dictated by tradition. This year, the dates fall on the Wednesday and Thursday of the week, with the Geneva installment taking place first (Wednesday Sept. 5), and the Hudson Valley installment on the second day (Thursday Sept. 6). Activities will commence in Geneva on the 5th, with registration, coffee, etc., in the lobby of Barton Lab at 8:30 am. The tour will proceed to the orchards to view plots and preliminary data from field trials involving new fungicides, bactericides, miticides, and insecticides on tree fruits and grapes. It is anticipated that the tour of field plots will be completed by noon. On the 6th, participants will register at the Hudson Valley Laboratory starting at 8:30, after which we will view and discuss results from field trials on apples.

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NYS Agricultural Experiment Station celebrates its 125th anniversary with an Open House on September 15

Healthy food and healthy plants meet healthy people on a healthy planet at an Open House to celebrate the 125th anniversary of the New York State Agricultural Experiment Station (NYSAES) in Geneva, NY, on Saturday, September 15, from 10 a.m.–4 p.m. The event is free and open to the public. Enjoy exotic butterflies and other live insects; tours of labs, farms, and the Cornell Agriculture and Food Technology Park; tractors and heirloom gardens; wine, cider and jam tastings; a farmers' market, and more.

Cornell University scientists at the Station will use interactive exhibits and field tours of cutting-edge research and outreach to showcase how their work impacts agriculture, food, and bio-based industries in New York. There will be hands-on exhibits for children of all ages while the contributions to agriculture that researchers at the Station have made over the years will be highlighted in historical tours and displays.

“Everyone is welcome to come and participate in the celebration,” said Station director Thomas J. Burr. “We were established by an act of the state legislature to promote agriculture in New York through scientific investigation, and have been working to do just that in New York ever since. The Station Open House is our opportunity to show the public some of the current research and outreach that furthers this legacy.” The Geneva Experiment Station officially opened its doors in 1882.

The Open House will include exhibits from the departments of horticultural sciences, entomology, plant pathology, and food science and technology. Participating partners include the USDA-ARS, the Cornell Agriculture and Food Technology Park, NYS Ag & Markets, the NYS Farm Bureau, the NYS Seed Laboratory, Integrated Pest Management (IPM), the NYS wine industry, the Strong Museum, and others.

Since becoming part of Cornell in 1923, NYSAES has gained national prominence as a center for research focused on the production, protection, and utilization of fruit and vegetable crops, and has generated many billions of dollars for the New York State economy. To learn more, visit www.nysaes.cornell.edu. ❖❖

INSECT TRAP CATCHES (Number/Trap/Day)

	Geneva, NY				Highland, NY		
	6/14	6/21	6/25		6/11	6/18	6/25
Redbanded leafroller	0.0	0.0	0.0	Redbanded leafroller	0.0	0.0	1.6*
Spotted tentiform leafminer	0.0	1.1*	7.1	Spotted tentiform leafminer	8.1	16.3	21.8
Oriental fruit moth	0.0	0.0	0.0	Oriental fruit moth	0.1*	0.1	4.0
Codling moth	0.0	0.0	0.0	Codling moth	2.4	1.2	0.7
Lesser appleworm	0.0	0.4	0.3	Lesser appleworm	4.5	2.6	2.7
San Jose scale	0.0	0.0	0.0	Obliquebanded leafroller	2.4	1.4	0.7
American plum borer	0.2	0.0	0.1	Variiegated leafroller	0.9*	0.4	0.3
Lesser peachtree borer	1.0	0.6	0.9	Apple maggot	–	0.0	0.1*
Pandemis leafroller	0.2	0.4	0.5				
Obliquebanded leafroller	1.2	0.6	0.1				
Dogwood borer	0.0	0.0	–				
Peachtree borer	–	–	1.0*				

UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1–6/25/07):	1256	783
(Geneva 1/1–6/25/2006):	1285	767
(Geneva "Normal"):	1247	756
(Geneva 1/1–7/2/2007, Predicted):	1465	946
(Highland 3/1-6/25/07):	1372	923

<u>Coming Events:</u>	<u>Ranges (Normal±StDev):</u>	
American plum borer 1st flight subsiding	1169-1553	702-1032
Cherry fruit fly 1st catch	650-1500	424-806
Codling moth 1st flight peak	529-1326	325-581
Comstock mealybug 1st adult catch	1308-1554	809-1015
Codling moth 1st flight subsides	1296-1946	808-1252
Lesser appleworm 1st flight subsides	961-1471	578-940
Obliquebanded leafroller 1st flight peak	900-1322	534-834
Obliquebanded leafroller summer larvae hatch	1076-1513	625-957
Oriental fruit moth 2nd flight start	1272-1564	784-1020
Apple maggot 1st catch	1045-2057	750-1034
Pandemis leafroller flight subsides	1347-1665	870-1054
Redbanded leafroller 2nd flight begins	1096-2029	775-1077

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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