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Update on Pest Management  
and Crop Development

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

July 2, 2007

VOLUME 16, No. 16

Geneva, NY

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ORCHARD  
RADAR  
DIGEST



### 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 8.



### Geneva Prdeictions:

#### Roundheaded Appletree Borer and Dogwood Borer

Peak egglaying period roughly: June 20 to July 5.  
RAB peak egg hatch roughly: July 5 to July 25.

#### Codling Moth

Codling moth development as of July 2: 1st generation adult emergence at 100% and 1st generation egg hatch at 95%.

#### Lesser Appleworm

2nd flight begins around: July 6.

#### Obliquebanded Leafroller

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 4.

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

#### Oriental Fruit Moth

2nd generation first treatment date, if needed, July 5.

#### Redbanded Leafroller

2nd generation peak catch and approximate start of egg hatch: July 10.



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#### UPCOMING PEST EVENTS

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#### PEST FOCUS

## HALFWAY THERE

### MODEL BUILDING

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]

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 7/2)</u>
Highland	May 14	
Clintondale	May 14	797
Geneva	May 17	744
Sodus	May 17	656
Ithaca	May 24	629
Lansing	May 24	691
Albion	May 25	727
Williamson	May 25	657
Appleton (South)	May 25	709
Appleton (North)	May 25	676
Waterport	May 28	721

**Obliquebanded Leafroller** (% estimated egg hatch in DD base 43°F after biofix: 25% hatch - 450 DD; 50% hatch - 630 DD; "halfway point" in development of earliest emerging larvae - 720 DD):

<u>Location</u>	<u>Biofix</u>	<u>DD (as of 7/2)</u>
Highland	6/1	
Clintondale	6/4	664
Albion	6/7 (est'd)	684
Sodus	6/9	523
Appleton (South)	6/10 (est'd)	594
Williamson	6/10 (est'd)	558
Geneva	6/11	552
Lansing	6/11	534
Ithaca	6/11	485

[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>

### PEST FOCUS

Geneva:

**Oriental fruit moth** 2nd flight began 6/28.

Highland:

1st **apple maggot** catch on baited sphere.

**Pear psylla** nearing hardshell stage.

### scaffolds

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

**INSECT  
BITES**

**SHOW US THE GREEN**

(Art Agnello and Dave Kain, Entomology, Geneva)

**Obliquebanded Leafroller**

❖❖ Assuming a biofix (1st adult catch) of OBLR between about June 1–11, many sites have accumulated a total of 550–700 DD (base 43°F) as of this morning, which means that we have already reached (or will soon do so) the 600 DD point in the insect's development that roughly corresponds to 50% egg hatch. This is the period during which the earliest emerging larvae begin to reach the middle instars that are large enough to start doing noticeable damage to foliar terminals and, eventually, the young fruits. This is also the earliest point at which visual inspection for the larvae is practical, so sampling for evidence of a treatable OBLR infestation is recommended now in orchards where pressure has not been high enough to justify a preventive spray already.

Guidelines for sampling OBLR terminal infestations can be found on p. 70 in the Recommends, using a 3% action threshold that would lead to a recommended spray of an effective leafroller material. Spintor and Proclaim are our preferred choices in most cases; Intrepid, a B.t. material or a pyrethroid are also options, depending on block history and previous spray efficacy against specific populations. If the average percentage of terminals infested with live larvae is less than 3%, no treatment is required at this time, but another sample should be taken three to five days (100 DD) later, to be sure populations were not underestimated.

**Summer Stylets**

A number of orchards have continued to show infestations of foliar pests that have already been troublesome since early postbloom, some of which tend to increase in response to the "flush growth" that is caused by the hot weather and sporadic moisture that we have experienced this season.

Green aphids are quite plentiful in many orchards, and even rosy apple aphid colonies have continued to proliferate; potato leafhoppers were very early in general and can be (or already have been) seen statewide. No doubt growers in all our regions would do well to keep an eye on local populations.

**Green Aphids**

Although small numbers of these aphids (Apple aphid, *Aphis pomi*, Spirea aphid, *Aphis spiraeicola*) may have been present on trees early in the season, populations have increased rapidly in response to our warm early summer weather. Both species are common during the summer in most N.Y. orchards, although no extensive surveys have been done to compare their relative abundance in different production areas throughout the season. It's generally assumed that infestations in our area are mostly Spirea aphid.

Nymphs and adults suck sap from growing terminals and water sprouts. High populations cause leaves to curl and may stunt shoot growth on young trees. Aphids excrete large amounts of honeydew, which collects on fruit and foliage. Sooty mold fungi that develop on honeydew cause the fruit to turn black, reducing its quality.

Aphids should be sampled several times throughout this season starting now. Inspect 10 rapidly growing terminals from each of 5 trees throughout the orchard. Record the percentage of infested terminals, including rosy aphid-infestations, since they tend to affect the foliage similarly to the green species at this time of the year. No formal studies have been done to develop an economic threshold for aphids in N.Y. orchards. Currently, treatment is recommended if 30% of the terminals are infested with either species of aphid, or at 50% terminal infestation and less than 20% of the terminals with predators. An alternative threshold is given as 10% of the fruits exhibiting either aphids or honeydew.

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The larvae of syrphid (hoverflies) and cecidomyiid flies (midges) prey on aphids throughout the summer. These predators complete about three generations during the summer. Most insecticides are somewhat toxic to these two predators, and they usually cannot build up sufficient numbers to control aphids adequately in regularly sprayed orchards. Check Tables 5 (p. 58) and 12 (p. 64) in the Recommends for toxicity ratings of common spray materials. Both aphid species are resistant to most organophosphates, but materials in other chemical classes that control these pests effectively include: Asana, Assail, Calypso, Danitol, Dimethoate, Lannate, M-Pede, Proaxis, Provado, Pyrenone, Thionex, Vydate and Warrior.

### **Woolly Apple Aphid**

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.

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 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.

### **Potato leafhopper**

PLH is generally a more serious problem in the Hudson Valley than in western New York or the Champlain Valley; however, healthy populations are being seen in WNY as well this season. Refer to the June 4 issue of Scaffolds for an overview of its biology and some control recommendations.

### **Japanese Beetle**

This perennial pest overwinters as a partially grown grub in the soil below the frost line. In the spring the grub resumes feeding, primarily on the roots of grasses, and then pupates near the soil surface. Adults begin to emerge during the first week of July in upstate N.Y., and there have been reports that they're right on schedule once again this year. The adults fly to any of 300 species of trees and shrubs to feed; upon emergence, they usually feed on the foliage and flowers of low-growing plants such as roses, grapes, and shrubs, and later on tree foliage. On tree leaves, beetles devour the tissue between the veins, leaving a lacelike skeleton. Severely injured leaves turn brown and often drop. Adults are most active during the warmest parts of the day and prefer to feed on plants that are fully exposed to the sun.

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Although damage to peaches is most commonly noted in our area, the fruits of apple, cherry, peach and plum trees may also be attacked. Fruits that mature before the beetles are abundant, such as cherries, may escape injury. Ripening or diseased fruit is particularly attractive to the beetles. Pheromone traps are available and can be hung in the orchard in early July to detect the beetles' presence; these products are generally not effective at trapping out the beetles. Fruit and foliage may be protected from damage by spraying an insecticide such as Sevin or Provado when the first beetles appear.❖❖

(Information adapted from: Johnson, W.T. & H.H. Lyon. 1988. Insects that feed on trees and shrubs. Cornell Univ. Press.; and Howitt, A.H. 1993. Common tree fruit pests. Mich. State. Univ. Ext. NCR 63.)



## OUT STANDING

### EVENT LINEUP

#### Spray Demo

❖❖ The next in the series of extension demonstrations that have been organized about using sensor-controlled precision spray systems with tower orchard sprayers will take place at Ledgerrock Farms, on Route 63 (just south of Medina, see map) on July 11 at 2:00 pm. Growers are encouraged to attend, to view the latest technology at work and to hear about the potential savings in pesticide used.❖❖



#### 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 research-

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ers 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 requested (see form.)

For sponsorship and exhibitor information, contact Debbie Breth at 585-798-4265 or [dib1@cornell.edu](mailto: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](mailto:NPL1@cornell.edu) Register on line at: <http://www.nysaes.cornell.edu/hort/fieldday/index.html> ❖❖



*Come see the latest research and extension advances*

## CORNELL FRUIT FIELD DAYS and EQUIPMENT SHOW 2007

NYS Agricultural Experiment Station, Geneva, NY

**July 25 from 8 am - 5 pm**

**FOR MORE INFORMATION:  
CONTACT NANCY LONG BY CALLING:  
315-787-2288 or NPL1@cornell.edu**

**ADVANCE REGISTRATION IS  
REQUESTED**

Please mail this registration form by July 20 to:  
Nancy Long, NYS Agricultural Experiment Station  
630 W. North Street, Geneva, NY 14456;  
or fax your registration to Nancy at:  
315-787-2488 by July 20 or register on line at:  
<http://www.nysaes.cornell.edu/hort/fieldday/>

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_



**KEY: 5 & 20**

1. Main Campus	11. Robbins Farm
2. Crittenden farm-North	12. McCarthy-North
3. Darrow A Farm	13. South Crittenden Farm
6. Denson Farm	14. Trickle Farm
7. Fruit & Vegetable Research Farm-South	15. Fruit & Vegetable Research Farm-North
8. Loomis Farm	16. Wellington Farm (PGRU)
9. Lucey Farm	17. Gates East & West
10. McCarthy Farm (PGRU)-South	

INSECT TRAP CATCHES (Number/Trap/Day)							
Geneva, NY			Highland, NY				
	<u>6/25</u>	<u>6/28</u>	<u>7/2</u>		<u>6/18</u>	<u>6/25</u>	<u>7/2</u>
Redbanded leafroller	0.0	0.0	0.0	Redbanded leafroller	0.0	1.6*	2.0
Spotted tentiform leafminer	7.1	11.2	11.3	Spotted tentiform leafminer	16.3	21.8	36.8
Oriental fruit moth	0.0	0.3*	0.3	Oriental fruit moth	0.1	4.0	2.6
Codling moth	0.0	0.0	0.0	Codling moth	1.2	0.7	0.4
Lesser appleworm	0.3	0.7	0.3	Lesser appleworm	2.6	2.7	0.1
San Jose scale	0.0	0.0	0.0	Obliquebanded leafroller	1.4	0.7	0.9
American plum borer	0.1	0.0	0.0	Variogated leafroller	0.4	0.3	0.1
Lesser peachtree borer	0.9	0.0	1.6	Apple maggot	0.0	0.1*	0.1
Pandemis leafroller	0.5	0.8	0.0				
Obliquebanded leafroller	0.1	0.3	0.0				
Dogwood borer	-	0.0	-				
Peachtree borer	1.0*	0.3	0.0				

\* first catch

UPCOMING PEST EVENTS		
	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1-7/2/07):	1458	925
(Geneva 1/1-7/2/2006):	1484	919
(Geneva "Normal"):	1443	899
(Geneva 1/1-7/9/2007, Predicted):	1641	1071
(Highland 3/1-7/2/07):	1613	1108
<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 flight peak	1327-1782	931-1143
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
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
Spotted tentiform leafminer 2nd flight peak	1381-1837	863-1213

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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