scaffolds

Update on Pest Management and Crop Development

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

June 30, 2008 VOLUME 17, No. 15 Geneva, NY

INSECTS

TIME KEEPER

ORCHARD RADAR DIGEST

Geneva Predictions:

Roundheaded Appletree Borer & Dogwood Borer

RAB peak egglaying period roughly: June 24 to July 8.

Peak RAB eggs hatch roughly: July 9 to July 28.

First Dogwood Borer egg hatch roughly: June 25.

Codling Moth

Codling moth development as of June 30: 1st generation adult emergence at 97% and 1st generation egg hatch at 73%.

Lesser Appleworm

2nd LAW flight begins around: July 7.

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 3.

If first OBLR late instar larvae sample is below threshold, date for confirmation follow-up: July 7.

Oriental Fruit Moth

2nd generation OFM flight begins around: June 28.

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

Redbanded Leafroller

2nd RBLR flight begins around: June 30.

Peak catch and approximate start of egg hatch: July 10.

Spotted Tentiform Leafminer

Rough guess of when 2nd generation sap-feeding mines begin showing: July 3.

Optimum first sample date for 2nd generation STLM sap-feeding mines: July 10.

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MODEL BUILDING

Obliquebanded Leafroller (% estimated egg hatch in DD base 43°F after biofix: 25% hatch - 450 DD; 50% hatch - 630 DD:

Location	Biofix	DD (as of 6/30)
Albion	June 7	535
Appleton-S	June 10	532
Clifton Park	June 11	445
Geneva	June 9	564
Highland	June 6	664
Knowlesville	June 8	604
Sodus	June 10	496
Waterport	June 10	559
Williamson	June 10	505

[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:
Redbanded leafroller and **oriental fruit moth** 2nd flights beginning. 1st **apple maggot** trap catch today, 6/30.

Highland:
1st **apple maggot** trap catch 6/24. **Japanese beetle** observed feeding on foliage.

2ND HALF

SUMMER BUZZ
(Art Agnello and Dave Kain, Entomology, Geneva)

Obliquebanded Leafroller

❖❖ Assuming a biofix (1st adult catch) of OBLR between about June 6–10, many sites have accumulated a total of 500–600 DD (base 43°F) as of this morning, which means that we will soon reach 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.

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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.

Sap Suckers

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 sporadic hot weather and moisture that we have experienced this season. Green aphids are quite plentiful in some 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 spiraecola*) may have been present on trees early in the season, populations have been increasing regularly as the summer weather patterns gradually become established. 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.

Green apple aphid adult

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.

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

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organophosphates, but materials in other chemical classes that control these pests effectively include: Asana, Assail, Aza-Direct, Beleaf, Calypso, Danitol, Lannate, M-Pede, Proaxis, Provado, Pyrenone, Thionex, Vydate and Warrior.

Woolly Apple Aphid

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. 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. Refer to the June 16 issue of Scaffolds for an overview of its biology and some control recommendations.

Potato leafhopper

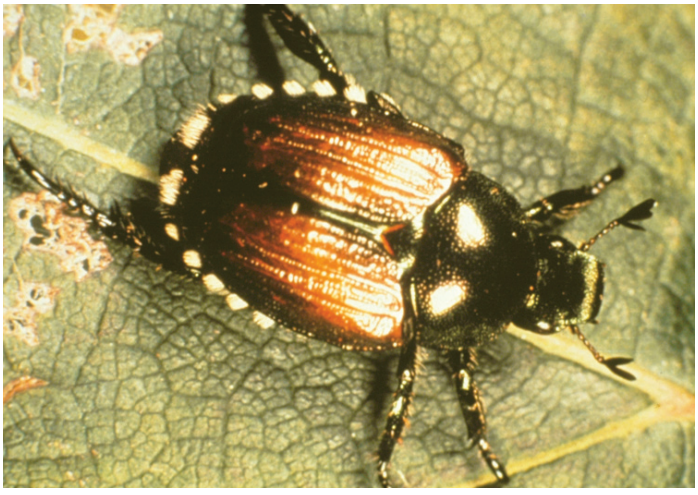
PLH is generally a more serious problem in the Hudson Valley than in western New York or the Champlain Valley; however, healthy populations are being seen in WNY as well this season. Refer to the May 27 issue of Scaffolds for an overview of its biology and some control recommendations.

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 we have no reason to believe that they won't be 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 lace-like 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.

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, Assail 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.) ❖❖



INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

	6/23	6/26	6/30
Redbanded leafroller	0.0	0.3	2.5*
Spotted tentiform leafminer	3.5*	19.7	12.6
Oriental fruit moth	0.3	0.2	1.1*
American plum borer	0.0	0.0	0.0
Lesser peachtree borer	0.3	0.2	0.3
Lesser appleworm	0.0	0.0	0.0
San Jose scale	1.3	0.3	0.0
Codling moth	0.0	0.2	0.0
Pandemis leafroller	0.1	0.0	0.3
Obliquebanded leafroller	0.0	0.0	0.0
Peachtree borer	0.0	1.0	0.1
Apple maggot	–	0.0	0.3*

* first catch

Highland, NY

	6/21	6/30
Redbanded leafroller	0.6	0.6
Spotted tentiform leafminer	38.1	41.4
Oriental fruit moth	0.0	0.9
Codling moth	1.1	0.3
Lesser appleworm	6.3	2.2
Obliquebanded leafroller	7.4	0.9
Tufted apple budmoth	0.6	0.3
Fruittree leafroller	0.3	0.1
Apple maggot	0.0	0.1
Lesser peachtree borer	0.5	1.1
Dogwood borer	0.3	0.1

UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1–6/30/08):	1416	888
(Geneva 1/1–6/30/2007):	1420	912
(Geneva "Normal"):	1410	876
(Geneva 1/1–7/7 Predicted):	1597	1020
(Highland 3/1–6/30):	1508	954

Coming Events:	Ranges (Normal ±StDev):	
Obliquebanded leafroller summer larvae hatch	1038–1460	625–957
Oriental fruit moth 2nd flight peak	1387–2137	874–1452
American plum borer 2nd flight begins	1409–1967	1006–1294
Lesser appleworm 2nd flight begins	1405–2023	917–1337
Apple maggot 1st catch	1196–1598	753–1035
Codling moth 1st flight subsides	1296–1946	808–1252
Comstock mealybug 1st adult catch	1308–1554	809–1015
Pandemis leafroller flight subsides	1390–1636	866–1046
Spotted tentiform leafminer 2nd flight peak	1388–1838	869–1215

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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