scaffolds

Update on Pest Management and Crop Development

FRUIT JOURNAL

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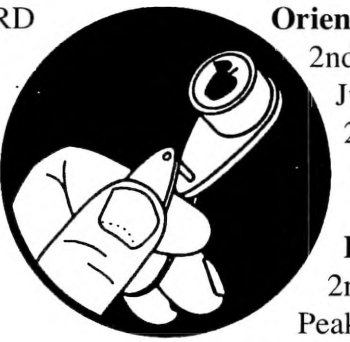
INSECTS

WHITES OF THEIR (COMPOUND) EYES

ORCHARD RADAR DIGEST



Geneva Predictions:

Roundheaded Appletree Borer

RAB peak egglaying period roughly: June 27 to July 9.

Peak hatch roughly: July 12 to July 29.

Dogwood Borer

First Dogwood borer egg hatch roughly: July 1.

Codling Moth

Codling moth development as of July 3: 1st generation adult emergence at 100% and 1st generation egg hatch at 94%.

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 4.

Oriental Fruit Moth

2nd generation OFM flight begins around: June 30.

2nd generation first treatment date, if needed: July 7.

Redbanded Leafroller

2nd RBLR flight begins around: July 2.

Peak catch and approximate start of egg hatch: July 13.

Spotted Tentiform Leafminer

Rough guess of when 2nd generation sap-feeding mines begin showing: July 6.

Optimum first sample date for 2nd generation STLM sap-feeding mines: July 13.

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MODEL BUILDING:

Insect model degree day accumulations:
DD43 since 1st Obliquebanded Leafroller catch (50% larval hatch @ 630, 1st occurrence of 4th instars @ 720):

GENEVA: 676
HIGHLAND: 803

[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]

HOLIDAY BUFFET

SALAD EATERS
(Art Agnello and
Harvey Reissig,
Entomology, Geneva)

Obliquebanded Leafroller

❖❖ Assuming a biofix (1st adult catch) of OBLR on approximately June 12, most WNY and Champlain Valley sites have accumulated a total of 658–717 DD (base 43°F) as of this morning, which means that we have already reached 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. 80 in the Recommends, using a 3% action threshold that would lead to a recommended spray of an effective leafroller material. Spintor remains our preferred choice 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 begun to show infestations of foliar pests now, some of which tend to increase in response to the "flush growth" that is caused by the hot weather and adequate moisture that we have experienced this season. Green aphids are more plentiful in the Hudson Valley so

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far; potato leafhoppers were very early in general and can be (or already have been) seen statewide. No doubt all 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 will certainly start to increase as a result of the continuous heat and adequate moisture we've received lately, which will provoke a respectable amount of the succulent terminal growth much favored by these insects. 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. 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. 66) and 12 (p. 74) 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, Pyrellin, Thionex, Vydate and Warrior.

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 5 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.

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 dis-

continued...

eased 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.) ❖❖

PEST FOCUS

Pultneyville:
1st **apple maggot** adults caught on sphere traps, June 30. (J. Eve)

INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

	6/26	6/29	7/3
Redbanded leafroller	0.0	0.0	0.0
Spotted tentiform leafminer	63.9	26.7	41.9
Lesser appleworm	0.8	0.3	0.1
Oriental fruit moth	0.1	0.0	0.0
Codling moth	0.0	0.0	0.0
San Jose scale	0.0	0.0	0.0
American plum borer	0.0	0.2	0.0
Lesser peachtree borer	0.5	0.3	0.6
Dogwood borer	1.3	–	2.7
Pandemis leafroller	0.3	0.0	0.1
Obliquebanded leafroller	0.1	0.2	0.1
Peachtree borer	0.0	0.0	0.0
Apple maggot	0.0	0.0	0.0

* first catch

Highland, NY

	6/19	6/26
Spotted tentiform leafminer	84.9	86.1
Oriental fruit moth	0.1	1.2
Codling moth	2.5	2.1
Obliquebanded leafroller	0.5	0.5
Fruit tree leafroller	0.1	0.2
Tufted apple budmoth	0.0	0.0
Variegated leafroller	0.0	0.4
Lesser peachtree borer	2.4	1.1
Dogwood borer	0.1	0.2
Lesser appleworm	1.7	2.2
Apple maggot	0.1*	0.0

UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1–7/3/06):	1516	944
(Geneva 1/1–7/3/2005):	1477	943
(Geneva "Normal"):	1459	916
(Geneva 1/1–7/10 Predicted):	1719	1098

Coming Events:	Ranges(Normal±StDev):	
Obliquebanded leafroller summer larvae hatch	1038–1460	625–957
Spotted tentiform leafminer 2nd flight peak	1377–1841	861–1217
Oriental fruit moth 2nd flight begins	1272–1564	784–1020
Lesser appleworm 1st flight subsides	950–1436	570–920
Lesser appleworm 2nd flight begins	1365–1979	889–1305
American plum borer 2nd flight begins	1411–1893	1020–1232
Apple maggot first catch	1191–1597	750–1034
Comstock mealybug 1st flight peak	1505–1731	931–1143
Pandemis leafroller flight subsides	1390–1644	861–1053
Redbanded leafroller 2nd flight begins	1247–1651	770–1070
Redbanded leafroller 2nd flight peak	1524–2018	965–1353
Codling moth 1st flight subsides	1296–1946	808–1252
San Jose scale 2nd flight begins	1564–1934	1013–1309

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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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