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Update on Pest Management and Crop Development

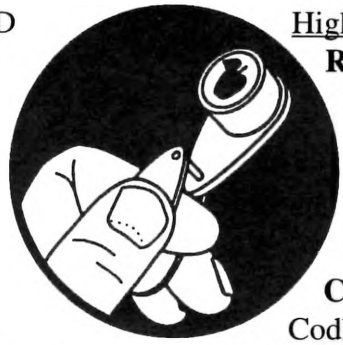
FRUIT JOURNAL

July 19, 2004 VOLUME 13, No. 18 Geneva, NY

INSECTS

MAKING THE SCENE

ORCHARD RADAR DIGEST



Geneva Predictions:

Roundheaded Appletree Borer
Peak hatch roughly: July 15 to August 4.

Dogwood Borer
Peak egg hatch: August 7.

Codling Moth
Codling moth development as of July 19: 2nd generation adult emergence at 1% and 1st generation egg hatch at 98%.
2nd generation 7% CM egg hatch: August 6 (= target date for first spray where multiple sprays needed to control 2nd generation CM).

Lesser Appleworm
Oriental Fruit Moth
Optimum 2nd generation - second treatment date, if needed: July 22.

Redbanded Leafroller
Peak catch and approximate start of egg hatch: July 17.

Spotted Tentiform Leafminer
Optimum first sample date for 2nd generation STLM sapfeeding mines: July 15. Second optimized sample date for 2nd generation STLM sapfeeding mines, if needed: July 22.

Highland Predictions:

Roundheaded Appletree Borer
Peak hatch roughly: July 2 to July 24.

Dogwood Borer
Peak egg hatch roughly: July 25.

Codling Moth
Codling moth development as of July 19: 2nd generation adult emergence at 20% and 2nd generation egg hatch at 2%.
2nd generation 7% CM egg hatch: July 23 (= target date for first spray where multiple sprays needed to control 2nd generation CM).

Spotted Tentiform Leafminer
Third optimized sample date for 2nd generation STLM sapfeeding mines, if needed: July 22.

White Apple Leafhopper
2nd generation WAL found on apple foliage: July 31.

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IN THIS ISSUE.

BIO-FIXATION

MODEL BUILDING

Oriental Fruit Moth. This pest's development is tracked using a 45°F DD model from biofix, defined as the first sustained moth catch. We are currently into the second brood, which started about June 30 in WNY. Pesticides to control this brood should be applied starting at 175–200 DD after this date, and continued on a 10-14-day interval if trap numbers exceed 10 moths/trap/week. Our sample numbers as of today:

Albion - 432
Geneva - 426
Appleton - 439
Williamson - 427

Codling Moth. We are currently between the first and second brood control windows for this pest. With 1260 DD (base 50°F) from the 1st catch of the season as a first spray date for the second brood, we currently have:

Geneva (1st catch May 17) - 899
Albion (1st catch May 17) - 847
Williamson (1st catch May 18) - 823
Highland (1st catch May 10) - 1263

(Note that in Highland degree days accumulated since biofix indicate that the first spray against codling moth should be applied)

Obliquebanded Leafroller. 810 DD (base 43°F) from the 1st catch corresponds with 90% hatch, and 950 DD is predicted to represent the 100% hatch point. Sites on a Spintor program should be approaching their 2nd application against the first summer brood. Our sample numbers so far:

Geneva (1st catch June 7) - 994
Albion (1st catch June 8) - 937
Sodus (1st catch June 10) - 891
Williamson (1st catch June 9) - 901

INSECT BITES

MIDSUMMER BUZZ
(Art Agnello, Entomology, Geneva)

Mites

A few orchards we have seen are in trouble from European red mites so far, but also keep in mind the potential for two-spotted mite, which can reach alarming levels in a hurry. Inspect your leaves using the 5 mite/leaf form on p. 70 of the Recommends, and be aware that two-spot populations increase more quickly than ERM, so be conservative in your interpretations. Acramite tends to be the most effective material against TSSM and Pyramite works better against red mites than it does on TSSM, but the main advice is to get out there and look at your foliage.

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

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first week of July in upstate N.Y., and if you have looked at any roses lately, you know that they are right on schedule 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 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 (now labeled in peaches) when the first beetles appear.

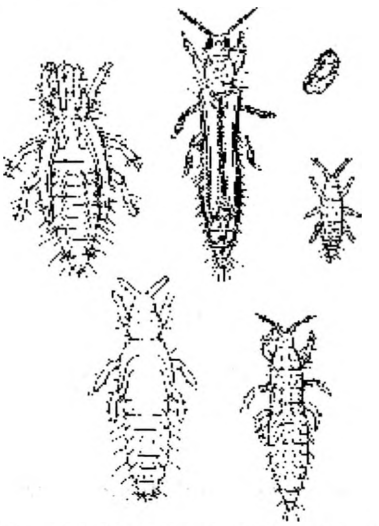
(Information adapted from: Johnson, W.T. & H.H. Lyon. 1988. Insects that feed on trees and shrubs. Cornell Univ. Press.; and Howitt, A.H. 1993. Common tree fruit pests. Mich. State. Univ. Ext. NCR 63.)

Apple Maggot

Catches have not been terribly high yet, but they are beginning to show up in our statewide research blocks and *in abandoned sites* where the first emerging adults are often monitored. If you aren't monitoring in specific orchards and haven't yet applied a protective spray against AM (and aren't using Spintor for OBLR), prudence would suggest a bit of attention to this insect. Hanging a few volatile-baited sphere traps on the edge of susceptible plantings can provide a world of insight on when (and whether) immigrating flies are posing a threat. Growers on a Spintor program should be somewhere between the first and second spray of this material for leafrollers, which will provide protection against moderate AM pressure.

Western Flower Thrips

This formerly rare pest has been known recently to cause damage to nectarines and peaches in the Hudson Valley. Originally limited to western North America, this is now a cosmopolitan species that is a key pest in the greenhouse production of flowers and vegetables. Apparently, drought conditions and high temperatures encourage damaging populations that can affect stone fruit crops, particularly nectarines and peaches — not exactly a description of our summer thus far, but who knows whether hotter weather might be just around the corner? The following information is taken from the PA Tree Fruit Production Guide: "...just prior to and during harvest,...adults move from alternate weed or crop hosts to fruit. [They] feed on the fruit surface in protected sites, such as in the stem end, the suture, under leaves and branches, and between fruit. Feeding ...results in silver stipling or patches. Silvering injury is particularly obvious on highly colored varieties. Because Lannate has a short preharvest interval (4 days), it can be used to control thrips during harvest." Also, SpinTor can be used within 14 days of harvest. An application after the first harvest may prevent subsequent losses; however, an additional application may be needed if thrips pressure is severe.❖❖



Line drawing: North Carolina Cooperative Extension Service

DISEASES

SHEEP IN WOLF'S CLOTHING

NECTRIA TWIG BLIGHT
(Dave Rosenberger, Plant Pathology, Highland)

Nectria twig blight is caused by the fungus *Nectria cinnabarina*. Symptoms of this disease appear in orchards during June and are easily confused with the shoot blight phase of fire blight. With both diseases, scattered terminal shoots wilt and produce a typical shepherd's crook at the end of the affected shoot. Fire blight infection is a serious problem, whereas the Nectria twig blight rarely causes economic damage.

The best way to differentiate the two diseases is to check for two characteristics that are unique to Nectria twig blight. Nectria infections are usually initiated through apple fruit stems that were left in the tree during the previous year's harvest. As a result, one can usually find a dried up "pulled stem" near the base of twigs that are dying from Nectria twig blight (Fig. 1). In some cases, the pulled stem that allowed entry of the fungus may break off during winter or spring, so pulled stems are not always evident on infected twigs, but they are usually present. The second diagnostic for Nectria twig blight is the presence of orange pustules at the node to which the pulled stem is attached (Fig. 2). The orange pustules (sporodochia, which appear white in this B & W photo) usually become evident by mid-July, especially on Rome Beauty trees, and produce conidia that are disseminated in autumn. On cultivars other than Rome Beauty, orange pustules may not appear until later in the season, or sometimes they may not appear at all.

Fig. 1: Pulled stems with initial stages of Nectria infection showing as a canker in the node to the left of the stems.

Fig. 2: Orange sporodochia on the infected node in a Rome Beauty branch where a pulled stem allowed infection to occur the previous fall.

Unlike fire blight infections, *Nectria* infections rarely extend more than one or two inches back into the tree beyond the infected node. However, girdling at the node causes the distal ends of infected twigs to collapse. Later in the season, the orange sporodochia may also appear on the twig beyond the node, but usually the pustules are most evident right next to the pulled stem. Nectria twig canker is most common on terminal-bearing cultivars such as Rome Beauty, but it also occurs occasionally on other varieties such as Fuji and Empire.

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Why is there so much Nectria twig blight this year? Infections are more common following years that have a combination of relatively wet harvest seasons followed by at least one rapid temperature drop in late fall or early winter. Rains are needed to disseminate spores to the pulled stems after harvest, and a bit of winter injury during fall or early winter seems to enhance the ability of the fungus to move from the pulled stems into the node to which the stem is attached. Both of these infection criteria were met last year.

Fungicide sprays are not effective for controlling Nectria twig blight. Dead twigs can be removed during summer pruning or during dormant pruning the following winter. Leaving infected twigs in the tree during summer and fall does not have any significant effect on spread of this disease because the disease is more limited by fall/winter weather conditions than by presence of inoculum. *N. cinnabarina* colonizes many species of trees and shrubs, so inoculum is available from many sources other than apple trees.

Nectria cinnabarina occasionally causes cankers in older wood, especially on Empire trees. However, the twig blight phase does not necessarily lead to development of cankers in older wood. Cankers are likely to develop only in trees that have suffered from repeated winter damage or other stresses that have compromised the natural resistance in the older wood. ❖❖

PEST FOCUS

Geneva:
Spotted tentiform leafminer 2nd flight began 6/17. The first sample of sap-feeding mines should be taken at 690 degree days (base 43 °F) following this event. DD43 °F since then = 789.

Highland:
Degree days accumulated since the biofix for **codling moth** indicate the need for the first application of an effective insecticide to control this pest.

GENERAL INFO

IN CASE YOU HADN'T HEARD

REMINDER: CORNELL CENTENNIAL FRUIT FIELD DAYS AT GENEVA

❖❖ Cornell University will host the Centennial Fruit Field Days and Equipment Show at the New York State Agricultural Experiment Station in Geneva, NY on July 27 and 28 from 8:00 am-4:00 pm. Fruit growers, consultants, and industry personnel are invited to tour field plots and learn about the latest research and extension efforts being carried out by researchers on the Geneva 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, cherries, and nectarines.

The event will be held on the 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. Admission is free and lunch is provided, courtesy of industry sponsors. Pre-registration is encouraged.

For sponsorship and exhibitor information, contact Alison DeMarree at 315-589-9698 or Emailto: AMD15@cornell.edu. More information will be posted as it becomes available. To pre-register, contact Nancy Long at 315-787-2288 or Emailto: NPL1@cornell.edu. More information about this event and a complete agenda for both days is available at: http://www.nysaes.cornell.edu/pubs/press/2004/040622FruitFieldDays.html
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UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1–7/19):	1876	1184
(Geneva 1/1–7/19/2003):	1733	1086
(Geneva "Normal"):	1866	1256
(Geneva 7/26 Predicted):	2068	1326
(Highland 1/1–7/19):	2276	1545

Coming Events:	**Ranges:**	
Comstock mealybug 1st flight subsides	1818–2132	1216–1418
Codling moth 2nd flight begins	1573–2299	1018–1540
Apple maggot 1st oviposition puntures	1528–2078	1021–1495
Oriental fruit moth 2nd flight peak	1379–2101	870–1428
Redbanded leafroller 2nd flight peak	1527–2039	972–1368
San Jose scale 2nd flight begins	1549–1913	1000–1294
STLM 2nd gen. tissue feeders present	1378–2035	913–1182
Dogwood borer flight peak	1564–2022	1001–1327
Obliquebanded leafroller 1st flight subsides	1613–2131	1034–1434

INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

	7/6	7/12	7/19
Redbanded leafroller	2.2	1.9	0.9
Spotted tentiform leafminer	234	133	102
Oriental fruit moth	0.6	0.3	0.9
Lesser appleworm	0.0	0.1*	0.0
Codling moth	0.3	0.3	0.1
San Jose scale	0.0	0.0	0.0
Obliquebanded leafroller	1.2	0.2	0.0
Pandemis leafroller	0.0	0.0	0.0
American plum borer	0.0	0.1	0.1
Lesser peachtree borer	0.4	0.2	1.4
Peachtree borer	0.4*	0.2	0.1
Apple maggot	0.2	0.0	0.2
Dogwood borer	0.1	0.3	0.1

* first catch

Highland, NY

	7/12	719
Redbanded leafroller	0.0	0.6
Spotted tentiform leafminer	58.5	23.9
Oriental fruit moth	0.7	0.3
Codling moth	0.1	0.1
Lesser appleworm	0.4	0.8
Obliquebanded leafroller	0.0	0.1
Sparganothis fruitworm	0.3	0.4
Tufted apple bud moth	0.0	0.1
Variegated leafroller	0.1	0.0
Apple maggot	0.9	0.1

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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