scaffolds

Update on Pest Management and Crop Development

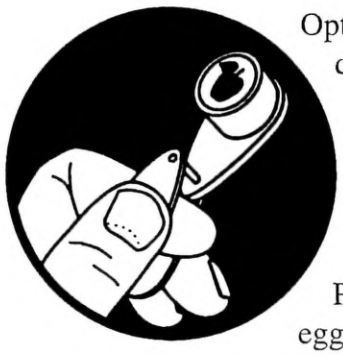
FRUIT JOURNAL

June 30, 2003 VOLUME 12, No. 16 Geneva, NY

INSECTS

ROLL CALL

ORCHARD RADAR DIGEST



Geneva Predictions:

Roundheaded Appletree Borer
RAB egglaying begins: June 15. Peak egglaying period roughly: July 3 to July 17.

Codling Moth
Codling moth development as of June 28: 1st generation adult emergence at 88% and 1st generation egg hatch at 45%.
The rain-adjusted second spray date if using Imidan, Avaunt, or azinphosmethyl is around July 1. If using Bt insecticide, third Bt spray around July 3 needed to maintain protection through majority of CM egg hatch period.
1st generation 20% CM egg hatch: June 24 (= single spray date where one spray needed to control 1st generation codling moth).

Lesser Appleworm
2nd LAW flight begins around: July 14.

Obliquebanded Leafroller
1st generation OBLR flight, first trap catch: June 17.
If using BT insecticide, optimum date to begin 2 to 4 weekly low-rate applications for small OBLR larvae is roughly: July 2.
Optimum first sample date for summer generation OBLR larvae: July 10.

Oriental Fruit Moth
2nd generation OFM flight begins around: July 6.
Optimum 2nd generation - first treatment date, if needed: July 12.
Optimum 2nd generation - second treatment date, if needed: July 23.

Redbanded Leafroller
2nd RBLR flight begins: July 8.
Peak catch and approximate start of egg hatch: July 19.

San Jose Scale
1st generation SJS crawlers appear: June 25.

Spotted Tentiform Leafminer
2nd STLM flight begins around: June 23.
Rough guess of when 2nd generation sap-feeding mines begin showing: July 10.
Optimum first sample date for 2nd generation STLM sapfeeding mines: July 17.

continued...

IN THIS ISSUE...

Highland Predictions:

Roundheaded Appletree Borer
RAB egglaying begins: June 14. Peak egglaying period roughly: July 1 to July 13.

Codling Moth
Codling moth development as of June 28: 1st generation adult emergence at 93% and 1st generation egg hatch at 58%.
The rain-adjusted second spray date if using Imidan, Avaunt, or azinphosmethyl is around June 22. If using Bt insecticide, third Bt spray around June 27 needed to maintain protection through majority of CM egg hatch period.
1st generation 20% CM egg hatch: June 23 (= single spray date where one spray needed to control 1st generation codling moth).

Lesser Appleworm
2nd LAW flight begins around: July 11.

Obliquebanded Leafroller
1st generation OBLR flight, first trap catch: June 16.
If using BT insecticide, optimum date to begin 2 to 4 weekly low-rate applications for small OBLR larvae is roughly: June 30.
Optimum first sample date for summer generation OBLR larvae: July 7.

Oriental Fruit Moth
2nd generation OFM flight begins around: July 4.
Optimum 2nd generation - first treatment date, if needed: July 6.
Optimum 2nd generation - second treatment date, if needed: July 17.

Redbanded Leafroller
2nd RBLR flight begins: July 5.
Peak catch and approximate start of egg hatch: July 16.

San Jose Scale
1st generation SJS crawlers appear: June 24.

Spotted Tentiform Leafminer
2nd STLM flight begins around: June 22.
Rough guess of when 2nd generation sap-feeding mines begin showing: July 8.
Optimum first sample date for 2nd generation STLM sapfeeding mines: July 14.

EDUCATED GUESS

MODEL BUILDING

❖❖ **Plum Curculio.** Accumulated heat units need to reach 340 (base 50°F) from petal fall before the predicted end of the immigration of ovipositing females. All sites are well past this mark after last week's heat wave. Our numbers as of Sunday June 29:

Geneva (May 23 PF estimate) - 465
Lafayette (May 23 PF estimate) - 474
Lyndonville (May 28 PF estimate) - 437
North Appleton/Niagara Co. (May 28 PF estimate) - 411
Plattsburgh (May 30 PF estimate) - 420
Saratoga/Capital District (May 27 PF estimate) - 578
Sodus (May 27 PF estimate) - 446

continued...

scaffolds
is published weekly from March to September by Cornell University—NYS Agricultural Experiment Station (Geneva) and Ithaca—with the assistance of Cornell Cooperative Extension. New York field reports welcomed. Send submissions by 3 pm Monday to:

scaffolds FRUIT JOURNAL
Dept. of Entomology
NYSAES, Barton Laboratory
P.O. Box 462
Geneva, NY 14456-0462
Phone: 315-787-2341 FAX: 315-787-2326
E-mail: ama4@cornell.edu

Editors: A. Agnello, D. Kain

This newsletter available on CENET at: news://newsstand.cce.cornell.edu/cce.ag.tree-fruit
and on the World Wide Web at:
http://www.nysaes.cornell.edu/ent/scaffolds/

Oriental Fruit Moth. Applications against the 1st brood should all be finished by now. According to the provisional Penn State model, the sprays against the 2nd brood aren't normally advised until we get to 1150 (peaches) and 1450 (apples) DD (base 45°F) from biofix. However, according to discussions with researchers in both PA and NJ, the highly unusual cool spring temperatures of this year have played havoc with this model, and developmental events for the 2nd brood OFM in these locations have evidently been delayed at least 150-200 DD past the predicted DD benchmarks. For example, although the 5% hatch of the 2nd brood is generally predicted at approximately 875 DD, this event was noted only last Friday in PA, with the accumulation nearing 1100 DD. Our best advice for sprays against this brood would be to wait until the first moths of the 2nd flight start being caught, and then figure on the 10% hatch to occur approximately 175–200 DD after that date. Anything applied before then will likely be too early to have much effectiveness.

Our numbers as of Sunday, June 29:

SITE	BIOFIX	CUM DD-45
Highland	4/21	1162
Geneva	5/1	870
Lyndonville	5/4	867
Albion	5/5	804
N. Appleton	5/6	736
Williamson	5/8	760

Codling Moth. All sites reached the 250 DD (base 50°F) first spray date early last week (if not before), so the second spray for blocks with a specific CM problem would not be recommended until 14 days after the first application.

Obliquebanded Leafroller. The predicted 1st hatch of the summer OBLR brood is about 350 DD (base 43°F) after the first moth catch, which we estimate to be June 17 in western NY, and June 16 in the Hudson Valley. As of Sunday, June 29, Geneva had 280, Albion 300, and North Appleton 298, so this event should begin sometime this week in most sites. Growers using a Bt program would be advised to make their first application in time to coincide with the beginning of hatch (see Orchard Radar Digest in this issue).❖❖

CRAWLERS & BORERS

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

San Jose Scale

❖❖ The first crawler of the season was seen in a tape trap in a Geneva research orchard last Friday, June 27, so now would be the advised timing for the first application of an effective insecticide against the most susceptible stage of this recently rejuvenated pest. Materials recommended include OP's such as Guthion and Imidan, as well as Provado and Esteem.

Comstock Mealybug

It shouldn't be long before we start seeing some 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.

The overwintered eggs hatch from mid-April through May and the nymphs (crawlers) migrate from the oviposition sites to their feeding sites on terminal growth and leaf undersides of trees and shrubs. This hatch is completed by the petal fall stage of pears. Nymphs that hatch from these overwintered eggs are active from roughly early May to early July. As the nymphs approach the adult stage, they 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.

continued...

The Comstock mealybug poses two major concerns for the pear processing industry of New York: First, the emergence of crawlers and adult females from the calyx of pears at the packinghouse creates a nuisance to workers. Second, pears to be made into puree typically are not peeled or cored by New York processors, so infestations can potentially result in unacceptable contamination of the product.

Another problem, of concern to apple growers in the 1930s and 1940s, and again in the Hudson and Champlain Valleys in the early 1980s, is that the honeydew secreted by the crawlers is a substrate for sooty molds growing on the fruit surface. This type of damage has also been noted on peaches in Niagara Co. and in Ontario, Canada. These molds result in a downgrading of the fruit, and are therefore an additional cause of economic loss.

To date, the Comstock mealybug has been a problem to growers of processing pears because of the contamination and aesthetic reasons noted. 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.

Sometime in early August, we'll advise an application of a material such as Provado, Diazinon, or Lannate to control this insect.

Dogwood Borers

Although we have not yet caught any males in traps, females should soon be laying eggs in susceptible apple orchards (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 can 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 4E or 50W may now 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 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. Another option at this point in the season is an application of Thiodan 50WP applied once during this first week of July, and again one month later at the beginning of August. We would also note that, in case you didn't follow the strategy of using Lorsban as a prebloom trunk spray for American plum borer, these treatments will also serve as the last opportunity for a control measure against this pest.

Additionally, this is the time of the season when a second trunk application of a pesticide should be made against peachtree borers 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 4EC, Thiodan, or a pyrethroid (Ambush, Asana, Pounce); do not spray the fruit.

Peachtree Borers

If you're not using pheromone disruption ties against peachtree and lesser peachtree boreres, this is the time of the season when a second trunk application of a pesticide should be made against

continued...

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 4EC, Thiodan, or a pyrethroid (Ambush, Asana, Pounce, or Warrior; Danitol is NOT registered in stone fruits). Do not spray the fruit.❖❖

ADDENDUM

OFF THE LIST

CORRECTION

❖❖ Last week's article on aphid control listed Avaunt as one of the spray options for this pest. When Avaunt first became available, there was a thought that it might have some activity on aphids, although they don't appear on the label. Over time, there hasn't been much field evidence to support this assumption, so in fact it should not have been included in the list of recommended materials.❖❖

PEST FOCUS

Geneva:
1st **San Jose scale** crawlers caught in tape traps 6/27. **Spotted tentiform leafminer** 2nd flight began 6/23. The first sample of sap-feeding mines should be taken at 690 degree days (base 43°F) following this event. DD43°F since then = 200. **Obliquebanded leafroller** flight began 6/17. Sampling should take place at approx. 600 degree days (base 43°F) following this event. DD43°F since then = 314.

Highland:
1st **apple maggot** caught on red sphere traps. **Green apple aphid** and **potato leafhopper** nymphs increasing. **Spotted tentiform leafminer** 2nd flight began 6/16. Degree days (base 43°F) since then = 377. **Obliquebanded leafroller** flight began 6/10 in Milton. Degree days (base 43°F) since then = 531.

INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

	6/23	6/26	6/30
Redbanded leafroller	0.0	0.0	0.0
Spotted tentiform leafminer	85.0*	235	274
Oriental fruit moth	0.6	0.8	1.1
Lesser appleworm	0.1	0.0	0.4
San Jose scale	1.8	0.7	0.3
Codling moth	1.1	2.2	0.8
Obliquebanded leafroller	2.8	1.7	0.3
Pandemis leafroller	0.8	0.5	0.0
American plum borer	0.9	0.2	0.4
Lesser peachtree borer	1.6	3.2	0.5
Peachtree borer	0.0	0.0	0.0
Dogwood borer (N. Huron)	0.0	0.0	0.0

Highland, NY

	6/23	6/30
Redbanded leafroller	0.0	0.1
Spotted tentiform leafminer	94.7	205
Oriental fruit moth	0.4	1.1
Lesser appleworm	0.6	2.4
Codling moth	0.9	6.5
Obliquebanded leafroller	0.1	5.4
Apple maggot	0.0	0.1*
Fruittree leafroller	–	1.4*
Sarganothis fruitworm	–	1.6*
Tufted apple budmoth	–	1.1*
Variegated leafroller	–	1.1*
Dogwood borer	–	0.0

* first catch

scaffolds
Dept. of Entomology
NYS Agricultural Exp. Sta.
Barton Laboratory
Geneva, NY 14456-0462

UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1–6/30):	1204	691
(Geneva 1/1-6/30/2002):	1369	860
(Geneva "Normal"):	1359	888
(Geneva 7/7 Predicted):	1412	851
(Highland 6/30):	1525	955
Coming Events:	**Ranges:**	
Dogwood borer 1st catch	798–1295	456–812
Peachtree borer 1st catch	565–1557	299–988
Apple maggot 1st catch	1045–2057	629–1297
Pear psylla 2nd brood hatching	992–1200	609–763
Comstock mealybug 1st adult catch	1270–1673	756–1105
Obliquebanded leafroller summer larvae hatch	1076–1513	630–980
Oriental fruit moth 2nd flight begins	1152–1819	772–1215

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.

This material is based upon work supported by Smith Lever funds from the Cooperative State Research, Education, and Extension Service, U.S. Department of Agriculture. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.