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Update on Pest Management and Crop Development

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

June 6, 2011 VOLUME 20, No. 12 Geneva, NY

INSECTS

LULL, OH BOY!

ORCHARD RADAR DIGEST

[M = Marlboro, Ulster Co.; G = Geneva]

Oriental Fruit Moth

2nd generation OFM flight begins around: June 21 [M]/July 1 [G].

San Jose Scale

1st generation SJS crawlers appear: June 9 [M]/June 19 [G].

Spotted Tentiform Leafminer

2nd STLM flight begins around: June 8 [M]/June 16 [G].

Roundheaded Appletree Borer

RAB egglaying begins: June 7 [G]. Peak egglaying period roughly: June 16 to July 1 [M]/June 25 to July 10 [G].

First RAB eggs hatch roughly: June 14 [M]/ June 22 [G].

Dogwood Borer

First DWB egg hatch roughly: June 19 [M]/ June 29 [G].

Codling Moth

1st generation CM development as of June 6: 1st gen adult emergence at 73% [M]/52% [G] and 1st gen egg hatch at 20% [M]/3% [G].

Obliquebanded Leafroller

1st generation OBLR flight, first trap catch expected: June 1 [M]/June 10 [G].

Where waiting to sample late instar OBLR larvae is not an option (= where OBLR is known to be a problem, and will be managed with an insecticide against young larvae) – Early egg hatch and optimum date for initial application of an effective insecticide: June 16 [M]/June 26 [G].

IN THIS ISSUE…

WILD 'N' WOOLLY

DYED IN THE WOOL
(Art Agnello, Entomology, Geneva)

❖❖ In most years at this point in the season, we receive reports of the first infestations of woolly apple aphid (WAA) in problem sites in western NY. WAA colonizes both aboveground parts of the apple tree as well as the roots, where it commonly overwinters. 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.

The 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. However, large numbers of colonies on trees may leave sooty mold on the fruit, which interferes with harvest operations because red sticky residues from crushed WAA colonies may accumulate on pickers' hands and clothing.

During late June most years, 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 Movento, Beleaf, or Assail and may offer suppression (for Movento and Assail, addition of a non-ionic surfactant or horticultural mineral oil will improve activity). Good coverage to soak through the insects' woolly coverings is integral to ensuring maximum efficacy. Additionally, Lorsban trunk applications for borers made at this time will effectively control any crawlers that might be contacted by these sprays. ❖❖

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LITTLE HEAVY

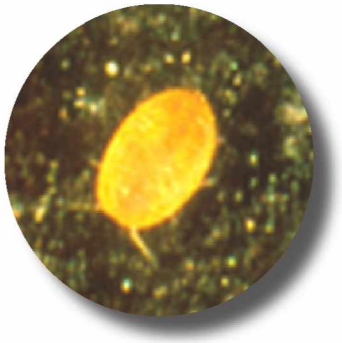
NOT SO SMALL SCALE
(Art Agnello, Entomology, Geneva)

❖❖ The San Jose scale (SJS) is a pest of tree fruit that attacks not only apple, but also pear, peach, plum, and sweet cherry. The minute SJS adult males emerge in the spring from beneath scale covers on the trees, usually during bloom, and mate. The first of this year's crawlers should be showing up any day now. The females produce live crawlers within 4–6 weeks of mating; these are bright yellow, very tiny insects resembling larval spider mites. About 24 hours after birth, the crawlers have walked or drifted to new sites and settled in by inserting their mouthparts into the tree and secreting a white waxy covering that eventually darkens to black.

SJS infestations on the bark contribute to an overall decline in tree vigor, growth, and productivity. Fruit feeding causes distinct red-purple spots that decrease the cosmetic appeal of the fruit. Control measures for SJS are recommended when the scale or their feeding blemishes have been found on fruit at harvest during the previous season. Insecticidal sprays are most effective when directed against the first generation crawlers, specifically timed for the first and peak crawler activity, which are usually 7–10 days apart.

The most reliable method of determining first appearance of the crawlers in your specific area is by putting sticky-tape traps on the tree limb near encrusted areas and checking them at least twice a week. In Geneva, we are closing in on the predicted time for this event, about 50 degree days away from the needed accumulation of 310 (50°F base) since the date of first adult catch (5/19 this year); in the Hudson Valley, we should already be there. Effective materials for SJS control include Assail (plus surfactant), Esteem, Movento (plus surfactant) and Provado. Another option, new last year, is the IGR Centaur. Guthion and Imidan were once standards but now show limited effectiveness in most orchards.

Coverage and control are generally better if the spray is applied dilute and in every row. SJS is frequently a problem in larger, poorly pruned standard size trees that do not receive adequate spray coverage. Dormant or delayed-dormant sprays of oil, or 1/2-inch green applications of Lorsban, Esteem, Centaur or Supracide will help prevent populations from getting established. Early season pruning is important for removing infested branches and suckers, as well as for opening up the canopy to allow better coverage in the tree tops where SJS are often concentrated. ❖❖



San Jose scale crawler

PEST FOCUS

Geneva: **Pandemis leafroller** 1st trap catch today,6/6.

Wayne Co.: **Dogwood borer** 1st catch 6/3.

Highland:
Green aphids increasing on apple and pear. **Rose** and **potato leafhopper** adults present on apple.**Twospotted spider mite** oviposition and egg hatch observed on Red Delicious. 1st **oblique-banded leafroller** trap catch 6/1. **San Jose scale** DD model predicts June 1 for the onset of applications to control emerging crawlers.
No crawlers observed as of this report.

CAN 'EM!

THEY COME IN PEARS, BUT...
(Art Agnello, Entomology, Geneva)

❖❖ It should be some time before the first Comstock mealybug adult males of the season start showing up (probably late June at the earliest), but it may be possible to detect infestations of nymphs (crawlers) from the overwintering generation in peaches. For those with a history of infestations of this pest in their pears, the crawlers are the most susceptible stage for chemical control; we normally focus on the summer brood, which occurs sometime during the 3rd week of July in the Hudson Valley, and shortly thereafter in western N.Y. However, now would be a good time to note the presence of any potentially problematic populations in your peaches or pears, in order to be prepared should you need to make a management decision later on. The following information is taken from the Comstock Mealybug IPM Fact Sheet, No. 22:

There are two generations of Comstock mealybug in New York, each taking 60 to 90 days to complete, depending on seasonal temperatures. The egg is generally thought to be the primary overwintering stage, but some nymphs and adult females from the second (summer) generation may also overwinter, with eggs being laid in the spring rather than the previous fall. Adult females and males emerge at the same time, from late June to mid-July for the first (overwintering) generation, and late August to mid-September for the second (summer) generation. Adult females are present for a total of 4–6 weeks, and oviposit for about one week after mating. Males survive for only a few days after emerging.

The elongate, orange-yellow eggs are laid in jumbled masses along with waxy filamentous secretions in protected places such as under bark crevices, near pruning cuts, and occasionally in the calyx of fruit. The summer-generation eggs are laid from mid-June through late July, and the overwintering eggs from mid-August into October. The early larval instars of the CMB are similar to adult females (wingless and elongate-oval in shape, with a many-segmented body) except that they are smaller, more oval-shaped, lack the long body filaments, and are orange-yellowish because they have less wax covering. Later instars are similar in appearance, but become progressively browner and redder.

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 (i.e., as in the above-mentioned reports). 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.

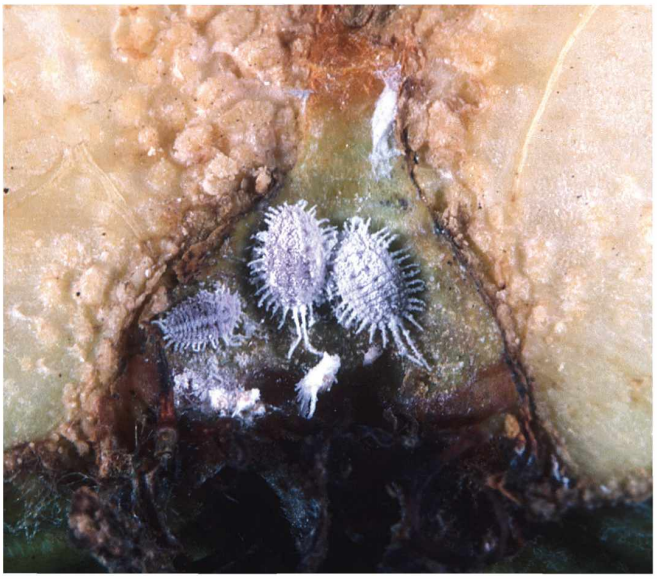
The Comstock mealybug poses two major concerns for the pear processing industry of New York: First, the emergence of crawlers and adult females from the calyx of pears at the packinghouse creates a nuisance to workers. Second, pears to be made into puree typically are not peeled or cored by processors who buy New York fruit, 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 problem also occurs on peaches in Ontario, Canada. These molds result in a downgrading of the fruit, and are therefore an additional cause of economic loss.

continued...

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 be monitored best by wrapping white, double-sided carpet tape around low scaffold branches and inspecting for crawlers that have been caught on the tape. They can be recognized with a hand lens or, with some experience, by the unaided eye.

When we expect summer crawlers to appear in problem blocks a bit later, we'll advise an application of a material such as Assail, Centaur, Movento, or Portal to control this insect. ❖❖



Comstock mealybug adult females in calyx of pear

INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY

	5/31	6/2	6/6
Redbanded leafroller	4.3	0.3	0.3
Spotted tentiform leafminer	1.4	0.4	0.0
San Jose scale	5.4	5.0	2.9
Oriental fruit moth	0.6	0.1	0.0
Lesser appleworm	0.0	0.0	0.0
Codling moth	0.0	0.1*	0.0
Lesser peachtree borer	0.6	0.7	0.0
American plum borer	0.0	0.3	0.4
Pandemis leafroller	–	–	0.1*
Obliquebanded leafroller	–	–	0.0

Sodus Center trap catches:

	5/31	6/3
Oriental fruit moth	3.0	1.0
Lesser appleworm	2.0	1.0
Codling moth	16.0	4.5

Highland, NY

	5/31	6/6
Redbanded leafroller	0.5	0.0
Spotted tentiform leafminer	2.5	10.6
Oriental fruit moth	4.4	1.4
Lesser appleworm	0.3	0.1
Codling moth	6.1	3.9
Obliquebanded leafroller	–	0.2*

* first catch

UPCOMING PEST EVENTS

	43°F	50°F
Current DD accumulations (Geneva 1/1–6/6/11):	874	524
(Geneva 1/1–6/6/2010):	1074	674
(Geneva "Normal"):	791	446
(Geneva 1/1–6/13 Predicted):	1046	654
(Highland 1/1–6/6/11):	1000	595

Coming Events:	Ranges (Normal ±StDev):	
Codling moth 1st flight peak	574–1008	313–597
American plum borer 1st flight peak	627–973	343–591
Black cherry fruit fly 1st catch	702–934	380–576
European red mite summer eggs hatch	737–923	424–572
Pandemis leafroller 1st flight peak	870–1182	496–722
Obliquebanded leafroller 1st catch	815–979	472–588
Obliquebanded leafroller 1st flight peak	843–1139	491–707
Pear psylla 2nd brood hatch	967–1185	584–750
Redbanded leafroller 1st flight subsides	579–893	322–558
Spotted tentiform leafminer 1st flight subsides	665–939	365–567
Spotted tentiform leafminer 2nd flight begins	986–1154	585–719
Oriental fruit moth 1st flight subsides	841–1127	490–700
Peachtree borer 1st catch	789–1353	451–835
San Jose scale 1st flight subsides	851–1233	506–764
San Jose scale crawlers present	1033–1215	619–757

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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