

# scaffolds

Update on Pest Management  
and Crop Development

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

June 16, 2008

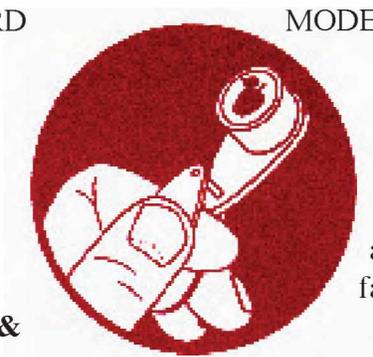
VOLUME 17, No. 13

Geneva, NY

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DAYS

ORCHARD  
RADAR  
DIGEST



MODEL BUILDING

**Plum Curculio** (spray coverage required until 308 DD base 50°F after biofix; i.e., McIntosh petal fall):

Geneva Predictions:

### Roundheaded Appletree Borer & Dogwood Borer

Peak egglaying period roughly: June 23 to July 8.

First RAB eggs hatch roughly: June 22.

First Dogwood Borer egg hatch roughly: June 25.

### Codling Moth

Codling moth development as of June 16: 1st generation adult emergence at 77% and 1st generation egg hatch at 25%

1st generation 3% CM egg hatch: June 10 (= target date for first spray where multiple sprays needed to control 1st generation CM).

1st generation 20% CM egg hatch: June 15 (= target date where one spray needed to control 1st generation codling moth).

### Obliquebanded Leafroller

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 insecticide against young larvae): Early egg hatch and optimum date for initial application of B.t., Intrepid, Proclaim, SpinTor or other insecticide with comparable efficacy against OBLR (with follow-up applications as needed): June 24.

### San Jose Scale

1st generation SJS crawlers appear: June 15.

### Spotted Tentiform Leafminer

2nd STLM flight begins around: June 13.

Location	Biofix	DD (as of 6/16)
Albion (Orleans Co.)	May 16	421
Appleton-S (Niagara Co.)	May 23	382
Geneva	May 14	423
Knowlesville (Orleans Co.)	May 16	415
Sodus	May 16	405
Williamson	May 21	402

continued...

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### INSECTS

- ❖ Orchard Radar Digest
- ❖ Model Building
- ❖ San Jose scale
- ❖ Woolly apple aphid

### CHEM NEWS

- ❖ Stone fruits added to Assail label

### PEST FOCUS

### UPCOMING PEST EVENTS

### INSECT TRAP CATCHES

**Codling Moth** (targeted spray application at newly hatching larvae, predicted at 250–360 DD base 50°F after biofix):

<u>Location</u>	<u>Biofix</u>	<u>DD (as of 6/16)</u>
Albion	May 20	404
Appleton-S	May 28	337
Clifton Park	May 17	400
Clintondale	May 11	413
Geneva	May 12	435
Knowlesville	May 28	350
Red Hook (Dutchess Co.)	May 14	563
Sodus (high-pressure)	May 14	416
Waterport (Orleans Co.)	May 20	433
Williamson	May 12	440

**Obliquebanded Leafroller** (targeted spray application at newly hatching larvae, predicted at 360 DD base 43°F after biofix):

<u>Location</u>	<u>Biofix</u>	<u>DD (as of 6/16)</u>
Clifton Park	June 11	103
Albion	June 10 (est'd.)	162
Sodus	June 12	115
Geneva	June 9	179
Ithaca	June 9 (est'd.)	221

[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]

## TIME SCALE

**YOU'VE GOT SCALE!**

(Dick Straub, Harvey Reissig & Peter Jentsch, Entomology, Highland & Geneva)

❖❖ As we find ourselves within one of the historical treatment periods for San Jose scale (SJS), we thought it would be a good idea to reprint this slightly updated 2005 article on management options:

According to grower reports, this pest is again gaining ground in many orchards throughout the state. San Jose scale can seriously affect fruit quality and, if unmanaged for a number of seasons, can result in poor tree health, or even death. We are fortunate to have a list of efficacious treatments that can be employed at various windows during the season (see Table 1). In the universal language of spraying apples, however, good coverage is necessary for control of scale.

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### scaffolds

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and on the World Wide Web at:

<http://www.nysaes.cornell.edu/ent/scaffolds/>

Table 1. Treatment periods and insecticide choices for management of SJS

<b>Period</b>	<b>Treatment Choices</b>
1 - Green tip	3% oil
2 - Half-inch green	Either: 2% oil Lorsban 4E (16 oz/100 gal) Lorsban + oil Supracide 2E (2 pt/100 gal; 3-12 pt/A) Supracide 2E + oil
3 - 1st summer brood (crawlers)	Either: Esteem (4-5 oz/A) + oil (2%) Assail (8 oz/A) + oil (2%) Provado 1.6F (2 fl oz/100; 8 fl oz/A) + oil (2%) [Apply at 500 DD from 1 March + again 14d later]
4 - 2nd summer brood (crawlers)	[Same options as for 1st brood crawlers: Apply at 1451 DD from 1 March + again 14d later]

**Treatment periods 1 and 2 (green-tip and half-inch green).** Oil, Lorsban and Supracide directed against overwintered ‘black caps’ are long-time standards, and each still has a place in control programs. Treatment during one or both of these time periods represents a first line of defense against scale. In most instances, applications at both green tip and half-inch green are probably unnecessary, but at this busy and often inclement time of season, an option should be welcome. Oil + Lorsban tank-mixed of course is a traditional treatment. Historical evidence, and results by Reissig & Combs (2003) suggest that there is not much synergism in the combination; i.e., either oil alone or Lorsban alone perform just as well. Many growers favor the combination, however, believing that it increases the efficacy against overwintered OBLR larvae - this is probably true.

**Treatment periods 3 and 4 (crawlers of the 1st and 2nd generations).** A bit more recent on the scene are Provado, Esteem and Assail. Quite frankly, we have little experience with Provado against this pest, but it may be worth a try if other susceptible insect species are present during rec-

ommended treatment periods. Esteem is an insect growth regulator that functions as a juvenile hormone mimic and thereby inhibits metamorphosis from one stage to another. It is most effective when directed against crawlers — preferably at first appearance. Esteem has no contact toxicity and tends to act slowly. Assail is a new-generation broad-spectrum neonicotinoid that, somewhat similar to Esteem, is most effective when directed against crawlers at first appearance. Efficacy of both materials is improved by the addition of oil, but ensure that such an application does not correspond with sulfur-containing fungicides such as captan.

Treatments to be applied at the first appearance of summer brood crawlers are best timed by the use of a degree-day model (1st generation, 500 DD50 from 1 March; 2nd generation, 1451 DD50 from 1 March). Because each generation of crawlers is produced (NOTE: SJS females do not lay eggs, but rather give birth to live young) for extended periods of time, for complete control a second application 14 days later is advised. Real-time degree-day accumulations for specific sites throughout New

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York are available from the NEWA website (<http://www.nysaes.cornell.edu/ipm/specware/newa/>), or other local sources. Correct timing of treatments is critical with Esteem and Assail, and calendar dates are generally too imprecise to be of benefit. For example, Table 2 shows that on average, 1st appearance of crawlers occurs approximately 21 days after petal fall. Also evident, however, is the extreme variation, i.e., the 500 DD event at the Hudson Valley Lab during the last decade has occurred at intervals between 4 May and 19 May. ❖❖

### Reference

Reissig, W. H. and D. Combs. 2003. A why, what and when approach to San Jose scale. Proceedings 79th Cumberland-Shenandoah Fruit Workers Conf., Winchester, VA.

## PEST FOCUS

Geneva:

1st **peachtree borer** trap catch 6/12. 1st **dogwood borer** trap catch 6/13 in Wayne Co.

Highland:

OBLR Update: As of Saturday, 14 June, the predicted first hatch of **obliquebanded leafroller** for sites throughout the Hudson Valley are:

Warwick (Skybit) - 16 June

Campbell Hall (Skybit) - 16 June

Milton (Skybit) - 17 June

Highland (Skybit) - 18 June

Red Hook (Skybit) - 21 June

Valatia (Skybit) - 21 June

Altamont (Skybit) - 22 June

Leafhopper complex (**potato, rose and white apple leafhoppers**) present. **San Jose scale** crawlers at 10% emergence.

Table 2. Historical record of calendar dates and corresponding degree-day accumulations to the treatment period (500 DD) for 1st generation summer brood crawlers of San Jose scale. Cornell's Hudson Valley Lab, Highland, NY.

Year	Date	DD 50	Petal Fall of McIntosh	Days post & cover period
2004	23 May	495.4	13 May	10 1C
2003	6 June	508.6	19 May	19 1C-2C
2002	31 May	508.0	7 May	24 2C
2001	29 May	499.3	10 May	19 1C-2C
2000	31 May	498.8	8 May	23 2C
1999	1 June	513.2	13 May	19 1C-2C
1998	21 May	505.1	4 May	17 1C-2C
1997	12 June	508.0	14 May	31 2C-3C
1994	1 June	495.5	12 May	20 1C-2C
		Avg. = 503.5	11 May	20.2 +/- 5.5 days

BAAAAH!

IN SHEEP'S CLOTHING  
(Art Agnello, Entomology,  
Geneva)

❖❖ Jim Eve reports that infestations of woolly apple aphid (WAA) are once again starting to show up in problem sites in western NY. 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. 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.



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. Large numbers of colonies on trees may leave sooty mold on the fruit, which annoys pickers because red sticky residues from crushed WAA colonies may accumulate on their hands and clothing.



During late June most years (and arguably earlier in years like this one), 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 Assail (plus 1 qt. of oil per 100 gal) offer some suppression. 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. ❖❖

LIKE A  
ROCK

STONE FRUITS  
ADDED TO NYS  
ASSAIL LABEL  
(Art Agnello,  
Entomology, Geneva)

❖❖ The NYS DEC has approved a supplemental label for use of Assail 30SG Insecticide (EPA Reg. No. 8033-36-82695) on additional crops in NY, including stone fruits: apricot, cherry, nectarine, peach, plum, plum-

cot and prune. Assail is labeled for use against aphids, leafhoppers (2.5–5.3 oz/A); oriental fruit moth, plum curculio and cat-facing insects such as tarnished plant bug and stinkbug (5.3–8.0 oz/A); cherry and black cherry fruit flies (5.3–8.0 oz/A); and San Jose scale, Japanese beetle and rose chafer (5.3–8.0 oz/A). The use of spray adjuvants, such as silicone-based surfactants or horticultural oils, may enhance coverage and improve pest control. The PHI for Assail on these crops is 7 days. Copies of both the supplemental label and the federal label must be in the possession of the user at the time of application. ❖❖

### INSECT TRAP CATCHES (Number/Trap/Day)

	Geneva, NY			Highland, NY		
	<u>6/9</u>	<u>6/12</u>	<u>6/16</u>	<u>6/9</u>	<u>6/16</u>	
Redbanded leafroller	0.3	0.0	0.1	Redbanded leafroller	0.0	0.0
Spotted tentiform leafminer	0.8	0.3	0.4	Spotted tentiform leafminer	1.1	20.7*
Oriental fruit moth	0.3	0.2	0.0	Oriental fruit moth	0.0	0.1
American plum borer	0.4	0.2	0.5	Codling moth	1.4	0.2
Lesser peachtree borer	0.0	0.0	0.4	Lesser appleworm	0.8	0.6
Lesser appleworm	0.1	0.2	0.1	Obliquebanded leafroller	0.6	1.4
San Jose scale	3.3	3.7	1.1			
Codling moth	0.1	0.3	0.0			
Pandemis leafroller	0.5*	0.7	0.1			
Obliquebanded leafroller	0.8*	0.5	0.1			
Peachtree borer	0.0	0.3*	0.1			

\* first catch

## UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1–6/16/08):	1110	690
(Geneva 1/1–6/16/2007):	1062	662
(Geneva "Normal"):	1058	632
(Geneva 1/1–6/23 Predicted):	1225	753
(Highland 3/1–6/16):	1261	809
<u>Coming Events:</u>	<u>Ranges (Normal ±StDev):</u>	
Spotted tentiform leafminer 2nd flight begins	958–1188	564–742
Obliquebanded leafroller 1st flight peak	904–1322	538–834
Obliquebanded leafroller summer larvae hatch	1038–1460	625–957
Pandemis leafroller flight peak	863–1167	491–707
Oriental fruit moth 1st flight subsides	827–1269	484–804
Pear psylla 2nd brood eggs hatch	967–1185	584–750
Peachtree borer 1st catch	788–1360	450–842
San Jose scale 1st flight subsides	850–1202	507–741
San Jose scale 1st gen. crawlers present	1033–1215	619–757
American plum borer 1st flight subsides	1172–1550	705–1029
Lesser appleworm 1st flight subsides	974–1482	589–949

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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