

scaffolds

Update on Pest Management
and Crop Development

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

July 13, 2009

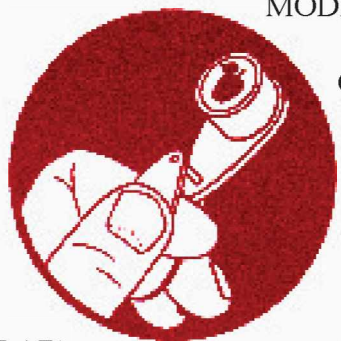
VOLUME 18, No. 17

Geneva, NY

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BUG EYED

ORCHARD
RADAR
DIGEST
(Art Agnello,
Entomology,
Geneva)



MODEL BUILDING

Obliquebanded Leafroller (% estimated egg hatch in DD base 43°F after biofix: 25% hatch - 450 DD; 50% hatch - 630 DD; 90% hatch - 810 DD:

❖❖ Geneva Predictions:

Roundheaded Appletree Borer (RAB)

RAB peak egglaying period roughly: June 28 to July 16.

Peak hatch roughly: July 13 to August 5.

Codling Moth

Codling Moth development as of July 13: 1st generation adult emergence at 100% and 1st generation egg hatch at 95%.

Lesser Appleworm

2nd LAW flight begins around: July 13.

Obliquebanded Leafroller

If first OBLR late instar larvae sample is below threshold, date for confirmation follow-up sample: July 12.

Oriental Fruit Moth

2nd generation – first treatment date, if needed: July 11.

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 17.

Location	Biofix	DD (as of 7/12)
Albion	6/11	767
Appleton-S	6/15	697
Clifton Park	6/18	594
Geneva	6/11 (estimated)	728
Highland	5/31	945
Lafayette	6/23	446
Lockport	6/12	712
Lyndonville	6/17	618
Sodus (inland)	6/8	590
Walworth	6/15	621
Waterport	6/17	640
Williamson	6/15	610

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INSECT TRAP CATCHES

UPCOMING PEST EVENTS



[NOTE: Consult our mini expert system for arthropod pest management, the

NEWA Apple Insect Models Degree Day Calculator:

http://newa.nrcc.cornell.edu/newaModel/apple_pest

Find accumulated degree days for the current date with the

Degree Day Calculator:

<http://newa.nrcc.cornell.edu/newaLister/dday>

Powered by the NYS IPM Program's NEWA weather data and ACIS, Northeast Regional Climate Center] ♦♦

SET SAIL

COASTING OR CRUISING?

(Art Agnello, Entomology,
Geneva)

♦♦ We've obviously been having a much cooler and wetter summer than the norm so far, which means that many of the usual insect and mite populations for this time of year have either failed to show, or else are significantly behind their normal schedule. While this may represent something of a lull in the daily scramble to keep on top of your pest problems, it shouldn't end up causing you to overlook any of the slow-but-steady issues that could still develop. The following is a brief rundown of items for your "pending" list, just to keep anything from boiling over unexpectedly.

Internal Leps

We are pretty much in between the first and second flights for both oriental fruit moth and codling moth, and the first brood CM hatch is essentially ending now, so most sites with traditionally heavy pressure from these pests should have already addressed first generation larval control needs. Look for the first captures of the next flights for purposes of timing management sprays: OFM should be starting up again soon (this week would be typical, if that applies at all this year), and CM usually re-appears by the last week in July. It still isn't too late for our temperature trends to turn around and deliver a hot

second half of the summer, which would put the insects back on track. Meanwhile, growers relying on sprayable pheromones for mating disruption should assess the best time for re-application following our frequent rain events this month.

Obliquebanded Leafroller

According to our developmental models, the first summer brood should be closing in on completing its hatch throughout the state this week. Orchards with historically high OBLR pressure should have received a first application of a suitable material during the first half of July, and this week would still be an advisable time for such an application against the larvae of this brood in some of the slower sites. Delegate, Spintor and Proclaim are appropriate choices, particularly in cases where the larvae are a bit larger, and a B.t. product such as Dipel, or else the IGR Intrepid are also options, but these tend to be more effective when applied against the earlier stages. If you are applying Delegate to control codling moth and oriental fruit moth, it will also be very effective against OBLR at this time. Regardless, we have found that this specific spray is the most critical for preventing fruit-feeding damage at harvest, so put this at the top of your list of priorities if OBLR has dogged you in the past.

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scaffolds

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

Apple Maggot

Trap catches are increasing in traditional high-pressure sites, owing to rainfall and soil conditions that are ideal for maggot development and adult emergence. Stings and larval tunneling could soon be detected in early and favored varieties such as Ginger Gold and Honeycrisp, particularly in the Hudson Valley. If you aren't monitoring in specific orchards and haven't yet applied a protective spray against AM (and aren't using Delegate or SpinTor for OBLR), prudence would suggest some attention to this pest. 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 Delegate or SpinTor program for leafrollers should get some protection against moderate AM pressure. For those not using OP cover sprays, Assail and Calypso will both provide excellent control of apple maggot as well as internal leps.

Green Aphids and Woollies

Just a repeated advisory to check your canopy sites for colonies of both green and woolly apple aphids, which have been noted with increasing frequency in many orchards. Green aphids are not as difficult to control as woollies; depending on the species in question, your (or your buyers') tolerance for the insects, their honeydew, damage, and insecticides used against them, options include Assail, Beleaf, Diazinon, Provado, Thionex, pyrethroids and others. Consult the Recommends for full listings.

Mites

European red mite eggs are present on the foliage right now, although at relatively low levels. If we begin to get more sultry temperatures, the period from egg deposit to hatch and multiplication will be a short one. Inspect your leaves using the 5 mite/leaf form on p. 74 of the Recommends, and be aware that two-spotted mite populations increase more quickly than ERM, so be conservative in your interpretations. Zeal, Kanemite, and Portal are good options to keep in mind if treatment is needed; Acramite tends to be more effective against TSSM than ERM, and Nexter works better against red mites than it does on two-spots, but the main advice is to get out there and look at your foliage. ❖❖

REALLY BIG SHEW

THE BEETLES SUMMER TOUR

(Peter Jentsch,
Entomology, Highland)

❖❖ The beetle complex touring commercial orchards this summer includes the multicolored Asian ladybird beetle (MALB), the rose chafer (RC), Japanese beetle (JB), and an occasional adult plum curculio (PC).

We observed the first emergence of Japanese beetle, *Popillia japonica*, last week (7 July). The cooler wet climate we've experience over the past 5 weeks may have reduced populations to some extent, as numbers appear somewhat lower this week than in years past. As the name suggests, the Japanese beetle is native to Japan. The insect was first found in the United States in 1916 in a nursery near Riverton, New Jersey. It is thought that beetle larvae entered the United States in a shipment of iris bulbs prior to 1912, when inspections of commodities entering the country began.

The adult is 0.6 inches long and 0.4 inches wide, with iridescent copper-colored elytra and



Fig. 1. Japanese beetle adult

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green thorax and head (Figure 1). Females will mate shortly after they emerge from the soil, only to burrow back into the sod to lay eggs, repeating this cycle through the early part of the summer. The larva or grub is cream-colored and feeds on roots of grasses for most of its immature life (Figure 2). The damage they inflict often causes high mortality to grasses in agricultural, lawn and golf course turf.



Fig. 2. Japanese beetle larva or grub

Japanese beetles are attractive to an “aggregation pheromone”. A lure using this chemical has been synthesized and is used in traps baited with both floral scent and pheromone. However, studies done at the University of Kentucky suggest that traps attract more beetles than they actually trap, thus causing more damage than may have occurred were the traps not used.

The Japanese beetle is a serious pest of about 300 species of plants throughout the eastern US, and is considered the most devastating pest of urban landscape plants in the eastern United States. It feeds on apple, grape, rose and a wide variety of other trees, shrubs and weed species. Damage to plants by adult feeding results in the skeletonizing of the leaf, from their consuming foliage between the leaf veins. This pest will also feed on ripening or damaged fruit, especially in early peach and apple varieties, as ripening occurs shortly after Japanese beetle emergence. Managing the beetles on ripening fruit is often difficult due to pre-harvest interval limitations of effective materials: As-sail 30SG (7 days); Calypso 4F (30 days); Provado 1.6F (7 days); Imidan 70WP (7 days); Sevin XLR Plus (3 days).

The abundance of the aphid complex on apple

has encouraged adults of the multi-colored Asian lady beetle (MALB), *Harmonia axyridis*, to migrate into Hudson Valley orchards (Figures 3 and 4). Populations of this predatory insect can build to very high numbers, most often to our benefit. We consider this beetle to be beneficial, as nymphs and adults can consume 20–60 aphids per day, respectively.



Fig. 3. Multi-colored Asian lady beetle adult with full complement of spots. (J.Ogrodnick)



Fig. 4. Fourth instar Multi-colored Asian lady beetle mature larva. (M.H.Rhoades)

However, if cool wet weather continues to provide aphid populations with ideal conditions for growth, they may move from feeding on foliage to fruit. On occasion we have observed MALB nymphs follow the aphid complex over to the apple to continue their predatory activities. Yet, as the larvae near maturity to emerge as adults, they will often pupate directly onto fruit. They do this by “gluing” their mouthparts onto the surface of the fruit, leaving a shallow hole or blemish in the surface of the apple (Figure 5). If aphids continue to

continued...



Figure 5. Injured fruit caused by construction of pupal case of multi-colored Asian lady beetle.

be problematic, low rates on the neonicotinoid products (Provado, Assail or Calypso) will lower the aphid population while maintaining biological control agents such as the MALB, orange ceidomyiid and cream-colored syrphid fly larvae, while reducing the potential for fruit injury by the pupal stage of MALB. ♦♦

ERRATUM

WEIGHT A MINUTE!

SEVIN BY THE POUND

♦♦ We've been informed of an error in the Tree Fruit Pest Management Guidelines on p. 127, in the Japanese beetle section for apples. The rates for Sevin 80S and 80WP are given as 1.88-3.75 oz per acre; the correct unit is lb per acre. ♦♦

ERRATUM

COMING SOON

EVENT REMINDERS

*SWEET CHERRY FIELD MEETING, GENOVA

Tuesday, July 14 from 3–6 pm

NYSAES, Jordan Hall, 630 W. North St., Geneva, NY

Meet at Pavilion behind Jordan Hall

This field day will focus on high density production, rootstocks, rain cracking protection, high tunnel production, bacterial canker control, pruning, varieties, and postharvest storage. For directions, go to <<http://www.nysaes.cornell.edu/hp/about.html>> and scroll down to Maps. For more information contact Juliet Carroll, 315-787-2430, jec3@cornell.edu, or Terence Robinson, 315-787-2227, tlr1@cornell.edu.

*LAKE ONTARIO SUMMER FRUIT TOUR, WAYNE CO.

Thursday, July 23 from 8:00 am

Registration and 1st stop at Van DeWalle Fruit Farm, Shaker Rd., Alton

Presented by Cornell Cooperative Extension and the NYS Agric. Expt. Sta., this tour will cover aspects of horticulture, entomology and plant pathology research projects and trials being conducted on grower farms in Alton, Sodus, and Williamson. Presentations by Terence Robinson, Art Agnello, Deb Breth, Tom & Alison DeMarree. Lunch and DEC credits available. RSVP to Kim Hazel (585-798-5265 ext 26; krh5@cornell.edu) by July 15.

♦♦

GENERAL INFO

INSECT TRAP CATCHES (Number/Trap/Day)

Geneva, NY				Highland, NY		
	<u>7/2</u>	<u>7/6</u>	<u>7/13</u>		<u>7/6</u>	<u>7/13</u>
Redbanded leafroller	1.7	1.9	1.8	Redbanded leafroller	5.9	5.9
Spotted tentiform leafminer	14.7	9.4	6.4	Spotted tentiform leafminer	183	183
Oriental fruit moth	0.8	1.4	0.9	Oriental fruit moth	3.5	1.4
Lesser appleworm	0.2	0.0	0.0	Lesser appleworm	5.3	3.6
Codling moth	0.2	0.1	0.0	Codling moth	0.6	0.4
San Jose scale	0.0	0.0	0.0	Lesser peachtree borer	0.1	0.2
American plum borer	0.0	0.1	0.1	Obliquebanded leafroller	3.6	2.4
Lesser peachtree borer	0.0	0.3	0.6	Dogwood borer	0.0	0.2
Peachtree borer	0.0	0.0	0.1	Peachtree borer	1.3	2.1
Pandemis leafroller	0.2	0.1	0.0	Tufted apple budmoth	0.6	0.4
Obliquebanded leafroller	0.0	0.0	0.0	Variegated leafroller	0.1	0.1
Dogwood borer	3.8	–	–	Apple maggot	0.2	0.2

* first catch

UPCOMING PEST EVENTS

	<u>43°F</u>	<u>50°F</u>
Current DD accumulations (Geneva 1/1–7/6/09):	1601	987
(Geneva 1/1–7/6/2008):	1760	1141
(Geneva "Normal"):	1717	1127
(Geneva 1/1–7/13 Predicted):	1767	1104
(Highland 3/1–7/6/09):	1791	1120
<u>Coming Events:</u>	<u>Ranges (Normal ±StDev):</u>	
Lesser appleworm 2nd flight begins	1393–1935	905–1275
Apple maggot 1st catch	1228–1620	784–1034
Comstock mealybug 1st flight peak	1505–1731	931–1143
Oriental fruit moth 2nd flight peak	1468–1948	939–1303
Codling moth 1st flight subsides	1321–1871	850–1232
Pandemis leafroller flight subsides	1394–1628	869–1041
Spotted tentiform leafminer 2nd flight peak	1382–1796	866–1194
STLM 2nd gen. tissue feeders present	1378–2035	913–1182
American plum borer 2nd flight begins	1479–2019	978–1334
Obliquebanded leafroller 1st flight subsides	1612–1952	1048–1302
Redbanded leafroller 2nd flight peak	1540–1984	990–1330
San Jose scale 2nd flight begins	1583–1929	1025–1297

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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