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COMING EVENTS

	43°F	50°F
Current DD accumulations		
(Geneva 1/1-5/31):	741	432
(Geneva 1/1-5/31/2010):	910	553
(Geneva "Normal"):	681	375
(Geneva 1/1-6/6 Predicted):	894	545
(Highland 1/1-5/31):	861	498
Coming Events – Ranges (Normal +/- Std Dev):		
American plum borer 1st flight peak	627-973	343-591
Black cherry fruit fly 1st catch	702-934	380-576
Codling moth 1st catch	400-578	201-313
Codling moth 1st flight peak	574-1008	313-597
European red mite		
summer eggs hatch	737-923	424-572
Lesser appleworm 1st flight peak	355-773	174-440
OBLR pupae present	601-821	328-482
Obliquebanded leafroller 1st catch	815-979	472-588
Pandemis leafroller 1st catch	771-907	437-525
Pear psylla 1st summer		

generation adults present	737-885	428-526
RLBR 1st flight subsides	579-893	322-558
Rose leafhopper adults on multiflora rose	689-893	366-498
Rose leafhopper adults on apples	809-1053	440-622
San Jose scale 1st flight peak	593-735	317-411
STLM 1st flight subsides	665-939	365-567

TRAP CATCHES (Number/trap/day)

Geneva

	5/19	5/23	5/26	5/31
Redbanded Leafroller	23.2	6.5	9.0	4.3
Spotted Tentiform Leafminer	8.2	2.5	1.7	1.4
San Jose scale	2.2	0.6	1.7	5.4
Oriental Fruit Moth	8.8	4.1	2.7	0.7
Lesser Appleworm	0.0	0.0	0.0	0.0
Codling Moth	0.0	0.0	0.0	0.0
Lesser Peachtree Borer	0.0	0.0	0.2*	0.6
American Plum Borer	0.0	0.3*	0.0	0.0

Highland (Peter Jentsch)

	5/9	5/16	5/23	5/31
Redbanded Leafroller	5.9	3.2	1.3	0.5
Spotted Tentiform Leafminer	30.6	12.1	2.4	2.5
Oriental Fruit Moth	21.6	13.3	6.2	4.4
Lesser Appleworm	0.0	0.0	0.4	0.3
Codling Moth	0.0	0.4*	1.9	6.1

* = 1st catch

PEST FOCUS

Geneva: Lesser Peachtree Borer 1st catch 5/26.

Walworth: 1st PC oviposition damage 5/25 (J. Eve)

Highland: 1st summer generation Pear Psylla observed.

Green Apple Aphid observed on apple.
Brown Marmorated Stinkbug feeding observed.
San Jose Scale DD model predicting June 1 for the onset of applications to control emerging crawlers.
Codling Moth DD model predicting May 30 for the onset of larval emergence.

ORCHARD RADAR DIGEST
[Box Text: ON TRACK]

[M = Marlboro, Ulster Co.; G = Geneva]
Roundheaded Appletree Borer
RAB egglaying begins: May 30 [M]/June 6 [G]. Peak egglaying period roughly: June 17 to July 2 [M]/June 26 to July 11 [G].
Dogwood Borer
First DWB egg hatch roughly: June 20 [M]/June 30 [G].
Codling Moth
1st generation, first sustained trap catch biofix: May 22 [G]; CM development as of May 31: 1st gen adult emergence at 59% [M]/29% [G] and 1st gen egg hatch at 6% [M]/0% [G].
Lesser Appleworm
Peak LAW trap catch: May 26 [G].

Obliquebanded Leafroller

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

Oriental Fruit Moth

1st generation 55% egg hatch and first treatment date, if needed: May 24 [M]/May 31 [G].

San Jose Scale

1st generation SJS crawlers appear: June 10 [M]/June 20 [G].

Spotted Tentiform Leafminer

1st generation sapfeeding mines start showing: May 27 [G].

Optimum sample date is around May 28 [G], when a larger portion of the mines have become detectable.

2nd STLM flight begins around: June 7 [M]/June 17 [G].

[Section: INSECTS]

STEER CLEAR-WING

(Art Agnello, Entomology, Geneva)

[Box Text: PEACH PITS]

In NY, there are two species of sesiid moths that attack peaches — the peachtree borer (PTB), *Synanthedon exitiosa*, and the lesser peachtree borer

(LPTB), *S. pictipes*. The adult borers are striking clear-winged moths with yellow and steel-blue body markings. The adults of these insects have from one to four yellow-orange stripes across the abdomen, depending upon species and sex. The PTB enters the tree near soil level and does not require the presence of wounds or breaks in the bark for entry, but the LPTB nearly always enters the tree at a pruning scar, canker, mechanical injury, or winter-injured area. The LPTB additionally attacks cherries, causing the same type of injury in the upper trunk and scaffold branches of these trees. Both species pass the winter as borers inside the tree, and in the spring emerge as moths that lay eggs on or in the trunk during the summer. The LPTB moth emerges first, normally in late May (we caught our first of this season on May 26), and the PTB doesn't show up until mid-June; both stay active (laying eggs) through August. When the borer stages hatch, the PTB tends to crawl down the tree to soil level and burrow in there, but the LPTB will move to the nearest injured area, which may be on the lower trunk or just as easily up in the scaffold limbs. LPTB completes its development in one year, but some PTB larvae take two years to develop, so any control measure a grower would elect will require repeating for at least 2–3 years.

Injury is caused by larval feeding on the cambium and inner bark of the trunk close to the soil level (PTB) or on the upper trunk and lower scaffold branches (LPTB). Occasionally, larger roots are also attacked by PTB. Areas attacked often have masses of gum, mixed with frass, exuding from the bark. All ages of trees are injured. Young trees are at times completely girdled and subsequently die. Older trees are often so severely injured that their vitality is lowered and they are rendered especially susceptible to attack by other insects or by diseases. Although both species may be found in infested trees, younger plantings and those not afflicted by extensive cankers or other bark splits are attacked primarily by PTB.

Chemical control is difficult, owing to the concealed habit of the larvae. Growers have traditionally relied on one or more coarse insecticide sprays (e.g., Asana, Lorsban, Proaxis, Thionex, Warrior) of the trunks and lower scaffold branches to deter egg laying and kill newly established larvae. Because this is a labor-intensive measure that often fails to completely control these pests, many growers choose not to elect treatment, or else do an incomplete job, with the intention of getting what they can out of a planting until infestations combine with other peach production

factors to warrant tree removal. However, there is a good alternative in the form of pheromone mating disruption (MD) tools for the control of these perennial pests.

Isomate-PTB Dual (Pacific Biocontrol/CBC America, EPA Reg. No: 53575-34) is the new (last season) twist-tie pheromone dispenser labeled for use against both of these species in all NYS stone fruits. They are placed in the trees at a rate of 150–250 ties/A at or before the first flight, with the higher rate (250/A) recommended when pest pressure is high. This product has replaced the Isomate-LPTB formalulation. We have conducted trials on the efficacy of Isomate-LPTB with and without the addition of directed trunk sprays in peaches, and after 2 years we saw that the pheromone dispensers completely suppressed trap catches of both PTB and LPTB for both seasons, compared with relatively heavy flights noted in the non-disrupted comparison blocks, showing that pheromone treatment was highly successful in disrupting the chemical communication of males and females of these two species.

These trials provided sufficient evidence that mating disruption alone is able to provide adequate protection from borer infestations in commercial orchards, giving

growers an effective non-chemical alternative to trunk sprays for managing this pest complex in their stone fruit plantings. Growers interested in this approach should be placing the pheromone ties during these next 1–2 weeks, before the LPTB flight gets solidly under way statewide.

RIDERS ON THE STORM
(Art Agnello, Entomology, Geneva)
[Box Text: HOPPED UP]

Potato leafhopper (PLH) does not overwinter in the northeast but instead migrates on thermals (warm air masses) from the south. It is generally a more serious problem in the Hudson Valley than in western N.Y. or the Champlain Valley; however, weather fronts such as those resulting from the recent unrest occurring in the middle states and subsequently in our region provide ample opportunity for most of the region to share the wealth, so it doesn't hurt to tour observantly through a few orchards now. Because PLH comes in constantly during the season, there are no distinct broods or generations and the pest may be present continuously in orchards from June through harvest.

PLH feeds on tender young terminal leaves. Initially, injured leaves turn yellow around the edges, then become chlorotic and deformed (cupping upward) and later turn brown or scorched. Damage is caused by a toxin injected by PLH while feeding. PLH also occasionally causes symptoms similar to the effects of growth regulators, such as excessive branching preceding or beyond the point of extensive feeding.

PLH damage is often mistaken for injury caused by herbicides, nutrient deficiency, or over-fertilization. PLH injury may not be serious on mature trees but can severely stunt the growth of young trees.

Nymphs and adults should be counted on 50–100 randomly selected terminal leaves in an orchard. Older trees should be sampled approximately every three weeks during the summer. Young trees should be sampled weekly through July. PLH nymphs are often described as moving sideways like crabs, whereas WALH generally move forward and back. No formal studies have been conducted in N.Y. to determine the economic injury level for PLH on apples, so we suggest a tentative threshold of an average of one PLH (nymph or adult) per leaf. Little is known about the natural enemies of PLH, but it is assumed that they cannot effectively prevent damage by this pest in commercial New York orchards.

Damage by this migratory pest is usually worse when it shows up early. PLH can cause significant damage to newly planted trees that are not yet established. When PLH, white apple leafhopper (WALH), rose leafhopper (RLH) and aphids are present, control measures are often warranted.

Field trials were conducted some years ago in the Hudson Valley to evaluate reduced rates of Provado against all three species of leafhoppers. Provado was applied in combinations at a full rate (2 oz/100 gal) and a quarter rate (0.5 oz/100 gal), at varying intervals (3rd–5th cover). Nymphs of PLH, WALH, and RLH were sampled and leaf damage by PLH was monitored.

Because of Provado's translaminar activity, all rates and schedules produced excellent control of WALH/RLH nymphs (however, reduced rates will not control leafminer). Against PLH nymphs, the number of applications was shown to be more important than rate; i.e., better protection of new foliage. Considering the percentage of leaves with PLH damage, the number of applications again appeared to be more important than application rate.

Provado is also an excellent aphicide, and the same principle would hold as for PLH — maintaining coverage of new growth is more important than rate. Moreover, reduced rates are likely to increase the survival of cecidomyiid and syrphid predators that are common and effective biological control agents. Other management options for this complex of leaf feeding

bugs include Actara, Agri-Mek, Assail, Avaunt, Beleaf (aphids only), Calypso, Centaur, Lannate, Leverage, Movento (aphids only), Portal (leafminers only), Sevin, Thionex, Voliam, Vydate, or any of the pyrethroids. Check Table 7.1.2 (p. 62) in the Recommends for impacts of any of these products on beneficials.

PLUM OUT OF TIME IN THE HUDSON VALLEY

(Peter Jentsch, Entomology, Highland)

[Box Text: INSECT BITES]

We are seeing plum curculio (PC) activity declining on apple, with fewer immigrating adults moving into the orchard. Those that remain will enter the borders and, once established within the canopy, typically do not move much throughout the orchard. The whole-orchard application made at petal fall will eliminate PC across the farm (unless Surround WP, non-toxic to PC, was used) while the remaining immigrating PC adults can be controlled using border sprays at 1st cover. Studies conducted by Reissig, Nyrop and Straub in 1998 found that once 308 DD (base 50F) have accumulated after petal fall, the migration of adults is complete. As residual insecticide coverage against PC should last 10-14 days from the previous spray (under moderate

weather conditions) there would be no need to make further applications specifically for PC management if the residue was sufficient to control PC up to the 308 DD window. Weather predictions throughout much of the Hudson Valley call for temperatures in the high 70s to mid-80s this week, leading to a rapid accumulation of degree-days (DD).

In the chart below are listed some NYS sites, accumulated DD (base 50F) from 90% PF of McIntosh, and the predicted end of migration dates based on NOAA temperature predictions as of Monday, 30 May, 2011. Residues need only be present until the completion of the migration date (308 DD).

Location	DD50 Accumulations	Petal Fall Date	Estimated Completion Date of PC Migration (308 DD)
Marlboro	250	13 May	1 June
Poughkeepsie/ Highland	230	16 May	2 June
Clintondale	201	15 May	2 June
Hudson	230	15 May	6 June

Red Hook	229	17 May	5 June
Guilderland	232	17 May	8 June
Clifton Park	226	17 May	8 June
Granville	163	22 May	14 June
Peru	73	26 May	-

Codling Moth: A Coming of Age

Most growers have made PF applications by now and are choosing materials for a 1st or 2nd cover spray. In making this choice, be certain that the material has activity against the codling moth (CM) as larval emergence is upon us in the Hudson Valley. This event begins after 250 DD (base 50F) have accumulated from the first sustained catch. Adults have been on the wing since the 16th of May in Highland, and 230 DD have accumulated since then. Materials that would be effective against both PC and CM should be applied in the southern to mid-Hudson Valley this week: Pyrethroids and pre-mixes including pyrethroids (less effective in >80°F temperatures); Imidan 70WSP; amount per acre: 2.13-5.33 lb; REI: 72 hours; Calypso 4F; amount per acre: 2.0-8.0 fl oz; REI: 12 hours.

However, if only a CM material is required, then the following materials could be used alone: Altacor 35WDG; amount per acre: 2.5-4.5 oz; REI: 4 hours; Assail 30SG; amount per acre: 2.5-8.0 oz; REI: 12 hours; PHI: 7 Days; Avaunt 30WDG; amount per acre: 5–6 oz; REI: 12 hours; Belt 4SC; amount per acre: 3-5 fl oz; REI: 12 hours; Delegate 25WG; amount per acre: 4.6-6.0 oz; REI: 4 hours; Rimon 0.83EC; amount per acre: 20–40 fl oz; REI: 12 hours.

Tipping the Scales

Treatments made against the San Jose scale (SJS) crawlers of the 1st generation will need to be applied by the end of this week, based on model predictions. It's almost too late to apply Movento 240SC in the southern Hudson Valley. In more northerly orchards where Movento can be used, a penetrating non-ionic surfactant such as horticultural oil or the penetrant rate of LI-700 must be employed for Movento to be effective. Be aware of the phytotoxicity that can occur when oil is applied within a Captan application window (7–10 days before or after).

A number of choices are available for SJS management. Centaur 0.7WDG acts to inhibit the synthesis of chitin (IRAC Class 16) working as an insect

growth regulator (IGR). Esteem 35WP, also an IGR, functions as a juvenile hormone mimic, inhibiting metamorphosis from one stage to another (IRAC Class 7). These insecticides are most effective when directed against crawlers at first appearance, yet have no contact toxicity and tend to act very slowly. Assail (IRAC Class 4) is a broad-spectrum neonicotinoid that also is most effective when directed against crawlers as they emerge. The efficacy of these materials is improved by the addition of oil; however, Esteem 35WP and Assail can be used effectively without the use of oil. The OPs and pyrethroids can also be used against the crawlers during emergence in back-to-back applications at 7–10 days. Remember, rotating classes of insecticides for each generation will delay the onset of resistance. Making multiple applications of the same class or same insecticide at a 7–10-day interval ***for the same generation*** is recommended.
Updated insect modeling information can be accessed at http://treefruitipm.info/ within Cornell University's Pesticide Decision System and Weather Pest Modeling web site.

Reference:

Reissig W. H., J. P. Nyrop and R. Straub. 1998. Oviposition model for timing insecticide sprays against

plum curculio (Coleoptera : Curculionidae) in New York State. Environ. Entomol. 27: 1053-1061.

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