Healthy Fruit, Vol. 29, No. 12, June 22, 2021

Prepared by the University of Massachusetts Amherst Fruit Team

Contents

Current degree day accumulations

UMass Cold Spring Orchard, Belchertown, MA (Since March 1)	20-June
Base 43 BE (NEWA, since March 1)	1360
Base 50 BE (NEWA, since March 1)	853

Upcoming pest events

Adapted from Scaffolds Fruit Journal

Coming events	**Degree days (Base 43 BE)**

Apple maggot fly 1st catch	1222-1762
Lesser appleworm 1st flight subsides	1002-1538
Lesser appleworm 2nd flight starts	1429-2108
Lesser peachtree borer flight peak	809-1734
Obliquebanded banded leafroller summer larvae hatch	1038-1460
Oriental fruit moth 2nd flight starts	1228-1489
Peachtree borer flight peak	1085-2014
Redbanded leafroller 2nd flight starts	1196-1547
Spotted tentiform leafminer 2nd flight peak	1367-1774
Spotted wing drosophila PEAK EGGLAYING BY FIRST GENERATION FEMALES*	995**

*uspest.org ** DD's Base 50 from January 1 (998 on June 20 according to uspest.org for Belchertown)

Upcoming meetings

Virtual Honeycrisp Meetup: Crop Load Management

A three-part series of conversations about Honeycrisp.
http://treefruit.wsu.edu/event/virtual-honeycrisp-meetup/2021-06-03/
As a follow-up to the 2021 IFTA Virtual Honeycrisp Tours, these meetups will provide an opportunity to review challenges, best practices, and new recommendations for Honeycrisp production.

Led by a panel of scientists and growers across regions involved in the USDA-SCRI Root2Fruit project and leading Honeycrisp producers.

July 1 - Nutrient Management (Register here:
https://wsu.zoom.us/webinar/register/WN_PEUvC-sZRHmkeTl7YHgA8Q)

NH Tree Fruit Virtual Twilight Meeting June 2021

Wed, 06/23/2021
6:00pm - 8:00pm
UNH Extension Field Specialist Jeremy Delisle will host this meeting featuring; Dr. Jaime Piñero, Elizabeth Garofalo and George Hamilton who will discuss seasonal insect, disease and sprayer calibration issues. Please use this link to pre register:
https://unh.zoom.us/meeting/register/tJUrcu2spjkvE93o0Zfs7XhALoWtRcMZUx50
Pesticide credits are pending.

Massachusetts Fruit Grower's Association Annual Summer Meeting, July 14, 2021, Clarkdale Fruit Farms, 303 Upper Road, Deerfield, MA

More information and to register here...

The way I see it…

Jon Clements

Do you see what I see? In the last week I saw:

Pear psylla. Adults specifically, lots. I want to believe the best control option at this time would be Sivanto Prime as it is systemic and listed on the label as a “pest controlled.” Why is this so hard?	
	This rather odd **foliar damage/phytotoxicity** in a Fuji block. Herbicide drift? Fire blight? (There really is fire blight in this block, but it does not look like this. It looks like fire blight.) I am leaning towards herbicide drift.

Fire blight. Oh yea, it's out there. Nothing major (yet) but of special note is a just-this-year planted Snap Dragon (NY-1) row. Chicken and egg situation, did it come in from the nursery? Probably not, lots of bloom, it looks like fire blight came in from an adjacent orchard with a history of some fire blight. Note to self, Snapdragon may be a fire blight magnet, any bloom needs to be treated with strep if conditions warrant, multiple times on young trees until bloom is gone, and some copper would not hurt either. Actually lots of copper if non-bearing.	
	**Nutsedge** gone wild. A burndown herbicide plus Sandea is indicated, likely needing follow-up Sandea for a year or two. Casoron, Solicam, and Terbacil have some suppression of nutsedge, but I don't think they have been working here. Get out the Sandea (apple and pear only).

Another **problem weed**, what is it? I am not good at weed ID, pretty bad actually, working on it. Maybe some milkweed and swallowwort going on there? Where's the trees? What to do now? Hand pull?	
	My, or actually OESCO's, little **Carrarospray airblast sprayer** outfitted with the tower accessory has a pretty good spray pattern I think. Six nozzles on each side, top four are air-induction, bottom two are hollow cone. Calibrated to deliver 50 gallons per acre at tall-spindle spacing. 50 gallon tank so I can spray an acre, reaches 10 to 12 feet high. Just applied some NAA at 2 ounces per acre for return bloom, along with Sysstem-Cal (Agro-K) at 2 quarts per acre.

Nice **branching on a 1-year old apple tree** achieved by using a double-edged pruner at bud break. Watch for forthcoming Fruit Notes article.	
	**Bacterial spot** of peach (and nectarine). Looks like a good year for it, fortunately not much on fruit yet. Have to keep at it with low rate copper and oxytetracycline (Mycoshield, Fireline.) Better yet, do yourself a favor and yank those susceptible varieties out and plant more resistant varieties.

Moth species caught in Oriental fruit moth trap, likely **Gray Tortrix**? Not common in commercial orchards, but this is not a common (it's uncommon) commercial orchard. Lots of leaf (and bloom?) chewing and curling going on. Not sure how uneconomical the damage is, but the codling moth damage is certainly economic!

Near complete **apple crop failure in a small orchard**. Grower says bloom was sparse/lacking, so flower buds did not form last year. Over-cropped? Drought? Beats me…but I have noted that McIntosh are on the lighter side in some spots, and have had a few reports of such. I wonder if there was some damage to flower buds back in mid-April when it got pretty cold at the pink bud stage? No picture here, not much excitement about a pict of no fruit?

Finally, here is a note from former intern Lyndsey Ware, now working for the UMass fruit team for the rest of the summer (until she leaves for Galveston):

In the Weeds?

Let us help you navigate out of there!!

Weeds tend to dominate their environments more readily than our cultivated crops. A mild situation can quickly become unruly without proper management, causing significant damage to your crops and pocket books. As part of a study to determine just where growers stand 'in the weeds', the UMass Fruit Team will

send out a four-question survey starting next week. In the meantime, if any of you have a weedy situation you'd like to share and are willing to talk with us for 10 to 15 minutes, please email Lyndsey at lware@umass.edu.

Thanks ahead of time for helping us help you!

Note at this time Healthy Fruit will go on an every-other week schedule, so the plan is no Healthy Fruit next week, but then on July 6.

Insects

Jaime Piñero

Weekly report of insect pest captures in monitoring traps at Cold Spring Orchard (Belchertown, MA)

Period: 6.15 - 6.21.2021

Insect	Average captures/trap	Notes
Obliquebanded leafroller	2	Pheromone-baited delta trap (CSO)
Codling moth	0	Pheromone-baited delta trap (CSO)
Oriental fruit moth	2	Pheromone-baited delta trap (CSO)
BMSB	0	Pheromone-baited clear sticky card (13 traps across MA)
SWD	0.05	Comparison of fresh and fermented diluted Concord grape juice vs. commercial lure (20 traps in all)

Obliquebanded leafroller (OBLR). For the past 7 days, only 2 OBLR have been captured in a pheromone trap at CSO. In three other locations, the numbers of OBLR trapped were 1, 5, and 6. Thus, numbers are increasing when compared to the preceding week.

Codling moth (CM), and Oriental fruit moth (OFM). Most orchards have been getting low numbers of CM and OFM in traps.

Brown Marmorated Stink Bug (BMSB). BMSB captures have decreased relative to numbers recorded four weeks ago. For the past 7 days, each of two locations (out of 13) had 1 BMSB in a pheromone -baited trap.

Spotted-wing drosophila (SWD). SWD captures continue to be very low and erratic. For example, one monitored location had a single SWD female captured during May, and only two SWD flies have been captured in the same location for the entire month of June.

Apple Maggot Fly (AMF). Monitoring traps for the attract-and-kill study involving deploying AMF lures on perimeter-row trees and spraying insecticide with sugar as a feeding stimulant will be deployed in 10 commercial orchards later this week. Trap setup will be completed early next week.

Potato leafhoppers (PLH). PLH does not overwinter here. Adults migrate north with summer storms, usually reaching New England in mid June. PLH nymphs and adults feed primarily on immature leaves and actively growing shoots in the outer part of the canopy. Leaves injured by PLH feeding turn yellow on edges, cup upward, and later turn brown or scorched. leaf necrosis or 'hopper burn' on terminal leaves, resulting from adult foliar feeding. On mature trees, PLH damage may not be significant, but feeding on young trees stunts shoot growth. So, act promptly if PLH are seen on young trees. Refer to the New England Tree Fruit Management Guide (https://netreefruit.org/apples/spray-table/9-summer) for a number of materials that are effective against PLH. A summarized table is below.

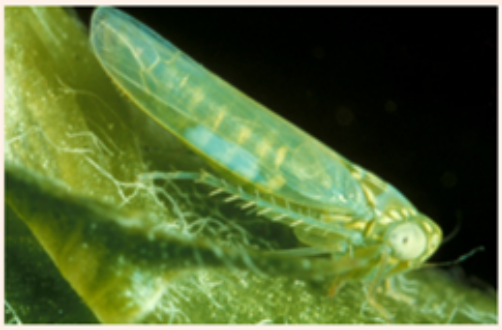
SPRAY TABLE (UPDATED 6.16) FOR APPLE INSECT PESTS (SUMMER)

SPRAY TABLE FOR APPLE INSECT PESTS (SUMMER). Source: New England Tree Fruit Management Guide **HIGH** AND **MODERATE** EFFECTIVENESS

	Active ingredient	IRAC	Apple maggot	Stink bugs	Codling moth	Oriental fruit moth	Obliquebanded leafroller	San Jose scale	Wooly apple aphid	Potato leafhopper
Intrepid 2F *(IGR)*	Methoxyfenozide	18			M	M	H			
Dipel DF **(OMRI)**	B.t.	11A			M	M	H			
Assail 30SG	Acetamiprid	4A	H	M	H	H		M	M	H
Delegate 25WG	Spinetoram	7			H	H	H			
ALTACOR 35WDG	Chlorantraniliprole	28			H	H	H			
Avaunt 30WDG	Indoxacarb	22	M		M	M				H
Exirel	Cyantraniprole	28	M		H	H	H			H
Imidan 70W	Phosmet	1B	H		H	H		M		
Movento 240SC	Spirotetramat	23						H	H	
Voliam Flexi WDG	Thiamethoxam + chlorantraniliprole	28 + 4A		H	H	H	H			H
Belt 4SC	Flubendiamide	28			H	H	H			
Danitol 2.4 EC	Fenpropathrin	3		M	H					
Actara 25WDG	Thiamethoxam	4A		M						H
Entrust SC **(OMRI)**	Spinosad	5			M	M				
Admire PRO 4.6SC	Imidacloprid	4A					H	M	M	H
Verdepryn 100SL	Cyclaniliprole	28								
Transform WG	Sulfoxaflor	4C						Suppression only		

This list is not exhaustive for every active ingredient or labeled product. No endorsement of products mentioned is intended, nor is criticism implied of products not mentioned.

Important characteristics of the white apple leafhopper and the potato leafhopper

	White apple leafhopper (*Typhlocube pomaria*)	**Potato leafhopper** (*Empoasca fabae*)
Description	Adults are creamy white, about 3 mm in length and hold their wings over their back when resting. Nymphs are whitish green and are usually found on the undersides of older leaves. *They move forward and backward.* 	Nymphs and adults are yellowish green to pale green. *Nymphs tend to move sideways* and quickly retreat to the opposite side of the leaf when disturbed. 
Life cycle	Second-generation eggs begin to hatch during late July and August. The nymphs feed during August and are fully grown by late August or September. Overwintering eggs are laid during September and early October.	Potato leafhoppers overwinter as adults in southern states and move northward mainly through the action of storm fronts. The potato leafhopper is most damaging from mid-June to mid-August.
Primary host	Apple trees seem to be the only host that white apple leafhopper overwinters on. During the growing season this insect may also infest peach, plum, cherry and hawthorn.	Apple, grapes, strawberry, potato, many other vegetable crops, beans, alfalfa and approximately 200 other species of plants.
Injury	Adults and nymphs feed on leaves and do not directly attack the fruit, although excrement on the fruit can reduce its quality. Leaves become speckled or mottled with white spots as green tissue is destroyed where leafhoppers suck sap from the leaves. 	The potato leafhopper feeds near the edges of leaves. The potato leafhopper's toxic saliva causes considerably damage in young orchards. If several feeding sites are present on a leaf, the leaf will cup downward. If several leaves on a shoot are affected, shoot growth may be greatly stunted. Feeding may spread fire blight. 
Summer monitoring	Examine 5 trees per block, 20 leaves per tree, and check the undersides of leaves for nymphs. An insecticide treatment is only necessary when a threshold of 2-5 nymphs per leaf is observed in a 100 leaf sample.	Fire blight-susceptible varieties and young trees where this species has been a problem in the past should be protected when the first adults appear.

Diseases

Liz Garofalo and Dan Cooley

No Diseases this week...

Horticulture

Jon Clements, Editor

No Horticulture this week, see The way I see it...

Guest article

No Guest article this week...

Facebook Me

No Facebook Me this week...

Useful links

UMass Fruit Advisor: http://umassfruit.com

UMass Extension Fruit Team YouTube Channel

UMass Fruit Loop IPM Podcast

Scaffolds Fruit Journal (1995-2020). With the retirement of Dr. Art Agnello from Cornell University, this publication has come to an end. See Peter Jentsch's blog below.

Network for Environment and Weather Applications (NEWA): http://newa.cornell.edu

Follow me on Twitter (http://twitter.com/jmcextman) and Facebook (http://www.facebook.com/jmcextman)

Acimovic Lab at Hudson Valley

Peter Jentsch's Blog

The next Healthy Fruit will be published on or about July 6, 2021. In the meantime, feel free to contact any of the UMass Fruit Team if you have any fruit-related production questions.

Thank you sponsors…

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