



Healthy Fruit, Vol. 30, No. 12, June 21, 2022

Prepared by the University of Massachusetts Amherst Fruit Team

Jon Clements, Editor

### Current degree day (DD) accumulations

UMass Cold Spring Orchard, Belchertown, MA (NEWA, since January 1)	20-June
Base 43 BE	1289
Base 50 BE	769

### Upcoming pest events

Pest	DD's Base 43 F. BE	Recommendation
Cherry fruit fly first catch	755-1289	
Lesser appleworm 1st flight subsides	1002-1538	None
Lesser peachtree borer 1st flight peak	809-1734	Mating disruption should be in place; apply insecticides where a problem
Obliquebanded leafroller summer larvae hatch	1038-1460	Monitor for presence of larvae; the control window where OBLR are an issue is generally the last week in June-first week in July
Oriental fruit moth 2nd flight starts	1228-1489	

Peachtree borer flight peak	1085-2014	
San Jose scale 1st generation crawlers present	1033-1215	Monitor for crawlers using black electrical tape with sticky
White apple leafhopper 1st generation adults peak	1162-1414	

## Upcoming meetings

**2022 Virtual Orchard Meetup Series** - Orchard Efficiency: Labor & Technology. June 30 and July 14. For more information: [https://rvpadmin.cce.cornell.edu/pdf/event\\_new/pdf96.pdf](https://rvpadmin.cce.cornell.edu/pdf/event_new/pdf96.pdf)

**Thursday, July 14, 2022** – Annual Summer Meeting of the Massachusetts Fruit Growers' Association, UMass Orchard, Belchertown, MA. For more information and to register: [Annual Summer Meeting of the Massachusetts Fruit Growers' Association](#)

## The way I see it

Jon Clements

ICYMI, here are some highlights (lowlights?) from today's noon Zoom open office hour:

**Weather** – a dry trend continues with seasonal or just above temperatures, some heat peaking this weekend. Next week there is a chance of showers, although it looks like there will be no widespread rain right now. Keep the irrigation going. The [drought monitor](#) paints most of Massachusetts as abnormally dry or moderate drought (except Berkshire County). That will be updated this Thursday.

**Scouting** – using the [DTN Agronomic Platform](#) some recent scouts at the UMass Orchard found: birds feeding on cherries; plant bug feeding injury and Oriental fruit moth shoot infestation in peaches; brown rot on a mummy peach fruit; plum curculio injury on Cripps Pink apple; deer feeding on Suncrisp apple; rampant scab in an unsprayed McIntosh research block; rampant(?) pear psylla adults and nymphs on pear shoots; and plenty of powdery mildew infested apple shoots, although the farm crew spent the better part of a day pruning them out last week.

**Calcium sprays** – yes, they should be ongoing, I am a fan of the formulated products (vs. calcium chloride) but you can take a look at this [fact sheet](#) if you want. (Although it needs to be updated, and I don't recommend calcium nitrate as a source of calcium.) One issue with calcium chloride (flakes) is spray compatibility, I would not mix with Captan and who knows what else? You run the risk of phytotoxicity, and it would be higher in hot and dry weather. The formulated products don't have this issue to my knowledge, and coming out of a jug in liquid form they are a lot easier to tank mix!

**San Jose scale** – see Guest article reprint from Scaffolds below.

**Mites** – most modern miticides are not harmful to beneficials. Portal, Zeal, Acramite, etc.

**Summer diseases** – sooty blotch, flyspeck, rots (bitter, black, white). It's kind of dry but don't let the guard down, Captan is a tank mix must-have plus rotating with some other fungicides. Interestingly, NEWA is quite helpful in this regard, alerting you when sprays are applied when the next fungicide is needed. For bitter rot, Captan must be applied preventatively (not curatively) before it rains!

**NEWA** – if you have not set up your Dashboard, you should, [NEWA](#) kind of has a neat feature that summarizes the current pest status on your Dashboard, see screenshot below for example. Could be improved, but kind of nifty. Works good on smartphones (or tablet) too. But you have to set up an account on NEWA and login.

Not mentioned during today's noon Zoom, but you can now register for the **Massachusetts Fruit Growers' Association Annual Summer Meeting** at the UMass Orchard on July 14. More information and to register [here...](#)

The screenshot shows a web browser window with the URL `newa.cornell.edu/user`. The dashboard displays a list of pests with their current status and associated data. Each pest entry is contained within a green header bar with a dropdown arrow and a 'Go To Tool' link. Below each header is a white box containing specific instructions and numerical data.

Pest Name	Status / Action	Accum. DD (base 50°F BE) since Jan 1	Accum. DD (base 50°F BE) from first trap catch 1st generation	Other Metrics
Apple Maggot	Order traps and bait.	781	-	-
Oriental Fruit Moth	Adult flight of second generation begins. Enter first catch date in the OFM Tool.	1140	845	-
San Jose Scale	Set pheromone traps for second generation adult male flight.	781	446	-
Sooty Blotch and Flyspeck	Risk Level: High	-	-	Days Since Petal Fall: 38 Accumulated Leaf Wetness Hours Since Petal Fall: 192
Obliquebanded Leafroller	It is too early for hatch or monitoring.	1309	98	-
Codling Moth	Egg hatch underway. Control sprays critical, apply a second spray 10-14 days after the initial egg hatch spray. In PC-high-risk orchards choose a material that will also target PC.	781	381	-

Screenshot of NEWA Dashboard showing current pest status summary

# Entomology

Jaime Pinero

**Apple maggot fly (AMF).** Unbaited monitoring traps are being deployed this week in various MA locations.

## Monitoring

- AMF adult flies can be monitored using sticky coated red spheres that mimic ripening apple fruits or with yellow sticky boards which act as a leaf mimic. The addition of an apple odor-based 5-component lure increases AMF trap captures.
- Set out traps in late June at the rate of 1 trap per 3-5 acres, but not less than 3 traps per block. Place traps near the block periphery, 1 or 2 rows in from outermost row. Remove any leaves or fruit touching the traps.
- Apple varieties most susceptible to maggot attack are Wealthy, Cortland, Gravenstein, Red and Golden Delicious, and early sweet or subacid varieties. However, AMF will attack any variety.

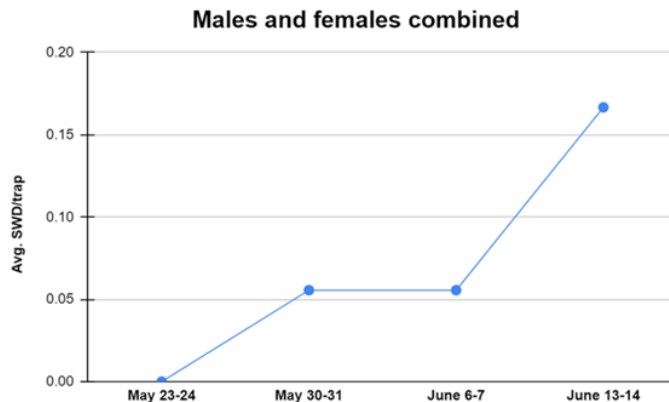
## Management

- Recommended treatment threshold is an average of 2 AMF per unbaited trap or 5 AMF per baited trap.
- Trap captures for a week following insecticide treatment are ignored. Subsequent sprays can be applied once the threshold is reached again.

**Spotted-wing drosophila (SWD).** SWD captures remain very low (see chart below; note that the Y-axis shows the average number of SWD captured per trap) and are expected to remain at low levels for the next 7 days or so. The table below shows cumulative captures of SWD and non-target insects over a 5-week period.

SWD captures (6 locations) period May 23 - June 15, 2022

Summary	SWD	non-targets
1 wk old Concord grape juice with 2% Salt	2	47
Scentry	2	3701
TRECE	1	649



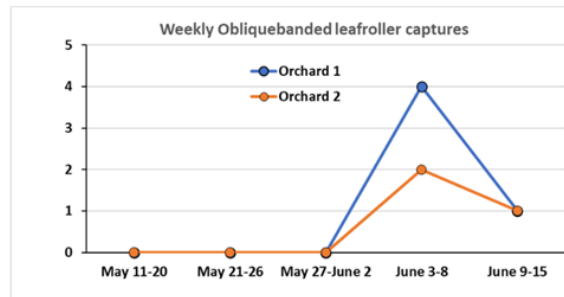
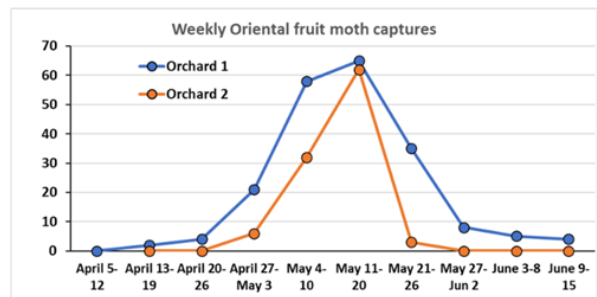
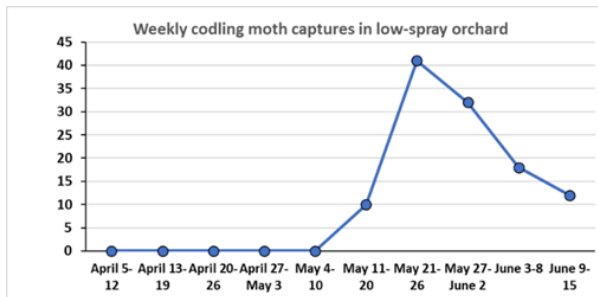
**Aphids.** Very low levels of aphid infestations were found at CSO. Aphids should be sampled several times throughout this season starting now. Inspect 10 rapidly growing terminals from each of 5 trees throughout the orchard, noting the percentage of infested terminals, including rosy aphid-infestations, since they tend to affect the foliage similarly to the green species at this time of the year.

If you detect aphids at your orchard, because the curled leaves protect the aphids, then the best control will be achieved with a systemic insecticide. Some insecticide options include Admire Pro, Movento (active ingredient: spirotetramat\*, at a rate of 6 to 9 fl. Oz), and Senstar (a mixture of Spirotetramat and pyriproxyfen).

\*Spirotetramat is an insecticide derived from tetramic acid, a systemic material, for the control of sucking insects in their juvenile, immature stages, including aphids, scale insects, and whitefly. It produces growth inhibition of younger insects, reduces the ability of insects to reproduce, resulting in mortality. Spirotetramat is harmless to slightly harmful to beneficials such as hoverfly larvae, spiders, predatory bugs, wasp parasites, lady beetles and lacewings.

**Codling moth (CM), Oriental fruit moth (OFM), obliquebanded leafroller (OBLR).**

Populations of all three moth species are very low in most orchards. The charts below show that the second generation of OFM and CM has not started yet.



**Brown Marmorated Stink Bug (BMSB).** Some pheromone-baited traps were deployed in cooperating orchards last week. This week we will complete the trap set up. BMSB captures in monitoring traps are most often low during June. Captures are expected to gradually increase,

reaching a peak in August. We will keep you informed about BMSB population size this year (populations were relatively low in 2021).

**Summer insecticide spray table.** Source: New England Tree Fruit Management Guide. *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.*

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

	Active ingredient	IRAC	Apple maggot	Stink bugs	Codling moth	Oriental fruit moth	Obliquebanded leafroller	San Jose scale	Woolly 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								
Spear-Lep	GS-OMEGA/ KAPPA-HXTX-HV1A (peptide)	32			?	?	?			

*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.*

## Pathology

Dan Cooley

Ed. note: No pathology update from Dan this week... but, above I alluded to how NEWA can actually be kind of useful for sooty blotch flyspeck management. For one, it tells you the risk level based on accumulated wetness hours, and, if you put when you sprayed fungicide in (June 9 for example in this case), it will tell you when it is necessary to spray again and with suggested fungicides. Who needs Dan? :-)

## Sooty Blotch and Flyspeck Risk Summary - Northeastern US Model

[Download CSV](#)
[Forecast Details](#)

 Risk Level: No Risk Low Moderate High

Date (2022)	Days since petal fall	Accumulated Leaf Wetness Hours	Rain Events and Fungicide Depletion Estimate			
			Days since last fungicide application	Rain since last fungicide application	Daily rain amount (inches)	Rain probability Night   Day
June 19	36	192	10	1.85	0.1	-   -
June 20	37	192	11	1.85	0	-   -
June 21 Forecast	38	192	12	1.85	0	-   34%
June 22 Forecast	39	202	13	1.85	0	34%   34%
June 23 Forecast	40	213	14	1.85	0	47%   49%
June 24 Forecast	41	223	15	1.85	0	19%   17%
June 25 Forecast	42	232	16	1.85	0	7%   12%
June 26 Forecast	43	239	17	1.85	0	13%   26%

## Management Guide

### Risk Level IPM Guidelines for Sooty Blotch and Flyspeck:

No Risk	No action needed.
Low	If first cover application has not been made, make first cover fungicide application for apple scab. Otherwise, no action needed.
Moderate	Check the 5-day forecast; a cover application should be made if two or more days with precipitation are predicted. See Fungicides below.
High	A cover application for Sooty Blotch and Flyspeck should be made. See Fungicides below.

**Fungicides for Sooty Blotch and Flyspeck:** To effectively limit fruit finish blemishes from Sooty Blotch and Flyspeck infection consider making a cover application of one of the following fungicides/tank mixes:

- 4 oz/100 gal Topsin +1 lb/100 gal. Captan 50W (or Captan-80 10 oz/100 gal); or
- 0.67 oz/100 gal Flint 50WG; or
- 1.6 oz/100 gal Sovran WDG; or
- 6.1 oz/100 gal Pristine WG; or
- 1 lb/100 gal Captan 50W (or Captan-80 10 oz/100 gal) + 21 fl. oz./100 gal ProPhyt



# Horticulture

Jon Clements

Who needs me? I do not have much new this week, all I had to say is in “The way I see it” above. :-)

## Guest article

### NOT TO SCALE

(Peter Jentsch & Art Agnello, Entomology, Highland & Geneva)

Reprinted from [Scaffolds Fruit Journal](#), Vol. 29, No. 14, June 22, 2020)

We have entered the period of the emergence of crawlers of San Jose scale (SJS), *Quadraspidiotus perniciosus* (Comstock) from under the overwintered adult female scale covers on apple trees. SJS has become a primary fruit pest in many orchards across the region over the past 10–15 years, as older chemistries such as Penncap-M and Lorsban, which once held this insect in check, have been removed or restricted as pest management tools. With little in the way of residual insecticide in the orchard after the threat of plum curculio has passed, it is easier for this insect to gain a foothold in tree fruit blocks, which invariably leads to severe economic injury if left unmanaged. Many producers find this insect very difficult to eradicate. Multiple applications targeting all (up to three) generations using products with different modes of action appear to work best.

The pheromone-based model we now use focuses on the adult flight as a biofix, predicting SJS crawler emergence at 260–360 DD (base 50°F). This year (2020), the first adults were observed in traps on May 26 in Highland and May 29 in Geneva; to date we've accumulated 510 DD since then in Highland (crawlers were recorded there on June 11) and 393 DD in Geneva (meaning they should have already emerged, although we haven't yet caught any in our traps; see the Model Building section in this issue). Therefore, the onset of crawler emergence around the state is imminent, at the very least.

We are quite fortunate to have a number of effective insecticides to assist us in managing this insect during key timing windows of the growing season. Our options now include contact insecticides or insect growth regulators that will target the emerging crawlers.

Centaur 0.7WDG, an insect growth regulator (IGR; IRAC Group 16), acts to inhibit the synthesis of chitin. Esteem 35WP, also an IGR (Group 7), functions as a juvenile hormone mimic, inhibiting metamorphosis from one stage to another. Movento 240SC (lipid biosynthesis inhibitor; IRAC Group 23) is also effective when applied preventively, as its systemic activity requires some time for it to become established in the woody tissues. Sivanto Prime 1.67SL (nicotinic acetylcholine receptor agonist; IRAC Group 4D) is also systemic in the xylem, and acts by causing feeding cessation; Venerate (microbial, no IRAC group) causes enzymatic

degradation of skeletal structures and interference with the molting process. All these insecticides are most effective when directed against the first appearance of crawlers. Assail and Admire Pro (Group 4A) are both broad-spectrum neonicotinoids that can be effective when directed against emerging crawlers. The efficacy of some of these materials (e.g., Movento, Assail, Centaur) is improved by the addition of an adjuvant with penetrating properties; however, Esteem, Sivanto Prime, Venerate and Admire Pro can be used effectively without the use of a penetrant. 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 14-day interval for the same generation is recommended.



A rather “nasty” San Jose scale infestation in a young apple orchard (J. Clements)

## Useful links

UMass Fruit Advisor: <http://umassfruit.com>

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>)

[The Jentsch Lab](#) (Peter Jentsch, Poma Tech)

[Acimovic Lab](#) (Srdjan Acimovic at Virginia Tech)

[Tree Fruit Horticulture Updates](#) (Sherif Sherif at Virginia Tech)

App store: Malusim (iOS and [Google Play](#)); Fruit Growth Model (iOS); Orchard Tools (iOS); MyIPM (iOS and [Google Play](#)); Eco Fruit/Apple App (iOS and [Google Play](#)) Note: for iOS apps search the App Store on your iOS device.

The next Healthy Fruit will be published on or about June 28, 2022. In the meantime, feel free to contact any of the [UMass Fruit Team](#) if you have any fruit-related production questions.

Thank you sponsors...



[Orchard Equipment and Supply Company, Inc. Conway, Massachusetts](#)



[New England Vegetable & Berry Growers' Association](#)



[Valent USA](#)



[Trécé](#)



FARM CREDIT EAST

[Farm Credit East](#)