



Healthy Fruit, Vol. 30, No. 15, July 26, 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)	25-July
Base 43 BE	2282
Base 50 BE	1516

Note: This will be the last Current DD accumulations for 2022.

### Upcoming pest events

Pest	DD's Base 43 F. BE	Recommendation
Apple maggot peak flight	2005-2575	After 10-14 days have elapsed since the first AM treatment (estimated period of residual effectiveness of insecticides), continue to check AM traps and apply additional sprays when trap catches exceed the threshold (avg. 5 flies/baited trap). Perimeter sprays can be used for low pressure orchards. In high pressure orchards, after the first spray is applied, continue to apply sprays to a larger perimeter area. Repeat monitoring protocol and apply additional sprays as necessary to provide protection until at least September 1.

Codling moth 2nd flight peak	1967-2677	Insecticides should be applied when the eggs from the second generation of CM begin to hatch, which usually occurs about 250 DD after the moth flight begins.
Lesser appleworm 2nd flight peak	2144-3071	
Obliquebanded leafroller 2nd flight start	2212-2615	Control of the second generation of OBLR larvae is not usually necessary if the first summer generation of larvae has been effectively controlled or if populations are low.
Oriental fruit moth 2nd flight subsides	2030-2510	It is too late to apply control sprays against this generation of OFM.
Oriental fruit moth 3rd flight starts	2244-2790	It is too soon to apply a control spray against the third generation of OFM. The initial spray should be applied when eggs begin to hatch. Since the third flight of OFM usually begins in mid- to late August, you may want to consider applying a final spray just before September 1, if you don't want to spray after Labor Day.
Redbanded leafroller 2nd flight subsides	2144-2669	NA
San Jose scale 2nd flight peak	2137-2493	If monitoring for crawlers, double-sided sticky tape traps should be placed around tree limbs at this time.
Spotted tentiform leafminer 3rd flight starts	2221-2618	It is too late to apply a control spray for STLM. Most second generation larvae are too old to control and maximum leaf damage from mines of this generation has already occurred. Usually, mines from the third generation of STLM appear late in the season (late August and September), and late season leaf damage from these larvae will not affect the trees. Also, late season sprays may disrupt the effects of parasites and predators, which reduce numbers of overwintering pupae that will emerge next season.
White apple leafhopper 1st brood adults subside	2195-2521	NA

\* Straight from NEWA Belchertown

## Upcoming meetings

### **You are invited to the 2022 Nutrien – Valent Retain meeting**

Place : Honey Pot Hill orchard, Stow, MA

Hosts: Chelcie and Andrew Martin

Date : Wednesday, July 27, 2022

Time: 5 PM !!! (Not noon as previously announced)

Jim Wargo will present the best management practices for the use of Retain in your harvest programs on peaches and apples. Come and have light dinner on Nutrien at Honey Pot orchard and learn how to maximize the effectiveness of Retain to hold your fruit on the trees and help with maintaining fruit integrity in storage. Please call Pat K. at 617-306-1797 or Marva and Sasha at 978-422-3331 to register . A head count is needed for food.

### **New Hampshire Tree Fruit & Vegetable Twilight Meeting**

July 28, 2022 | 5:00 - 7:30pm

IN-PERSON

Brookdale Fruit Farm

41 Broad Street

Hollis, NH

5:00 p.m. Welcome and Introductions

Jeremy DeLisle, UNHCE Field Specialist, Food and Agriculture and Trevor Hardy, Brookdale Fruit Farm

5:10 p.m. Training Tall Spindle Apple Trees and Using Plant Growth Regulators for Branching and Return Bloom

Win Cowgill, CEO, Win Enterprises International, LLC

5:30 p.m. Orchard Technologies - Efficiencies and Management Benefits

(Platforms, hedgers, trellis systems, and high-density plantings)

Trevor Hardy, Brookdale Fruit Farm and Win Cowgill, CEO, Win Enterprises International, LLC

6:40 p.m. IPM Monitoring Program Updates - BMSB, SWD, Corn Pest and SVB

Jeremy DeLisle, UNHCE Field Specialist, Food and Ag; Linda Kunhardt, UNH Extension Field Scout; Kyle Quigley, UNHCE Field Specialist, Food & Ag

7:00 p.m. Irrigation Automation and Technological Developments

Trevor Hardy, Brookdale Fruit Farm

7:30 p.m. Closing remarks, Certificate of Attendance, and Adjourn

Jeremy DeLisle, UNHCE Field Specialist, Food & Ag

2.5 approved PAT Credits. Registration not required.

## The way I see it

Jon Clements

Ha ha, pretty quiet. Two good meetings this week if you can make it. ReTain meeting at Honey Pot, and NH twilight meeting at Brookdale. I should be there. Sunburn has been on my mind, and no, I don't mean the sunburn on my face (but it's there). Sunburn on apples. Anyone seen it? I saw some sunburn early (July 10) and I thought conditions would be pretty ripe for sunburn this weekend and they may have been. I shot some Fruit Surface Temperatures (FST) at the UMass Orchard Sunday afternoon. They were what I would consider below the threshold level of 115 degree F. FST. See pictures below. Although other varieties are not immune, Honeycrisp seems to be the problem child for sunburn (among many other things too). I will keep my eyes out for new sunburn damage, and of course the season is not over yet, I expect more 90+ degrees days. Thanks to Glen Koehler at U. of Maine for previewing with me a review of sunburn which he is currently putting some tweaks on and we will share when finished. Not really sure how big an issue it is here yet, but global warming is HERE and I expect it will rise up to a greater level of concern in the years going forward. My general take on sunburn risk: if the air temperature is 95 or above (although could have sunburn as low as 90 F.), wind is relatively calm (< 5 mph), relative humidity is relatively (no pun intended) low (<45%), and solar radiation is high (> 700 watts/square meter, in other words clear blue sky), maybe some preventive action should be taken. Raynox Plus (Valent) frankly is your best bet IMHO, although it is not cheap. Glen is working on a sunburn risk prediction model which should help you make that decision to apply a sunburn protectant or not. Questions? Comments?



Honeycrisp high Fruit Surface Temperature (FST) on 24-July, 3:15 PM at UMass Orchard

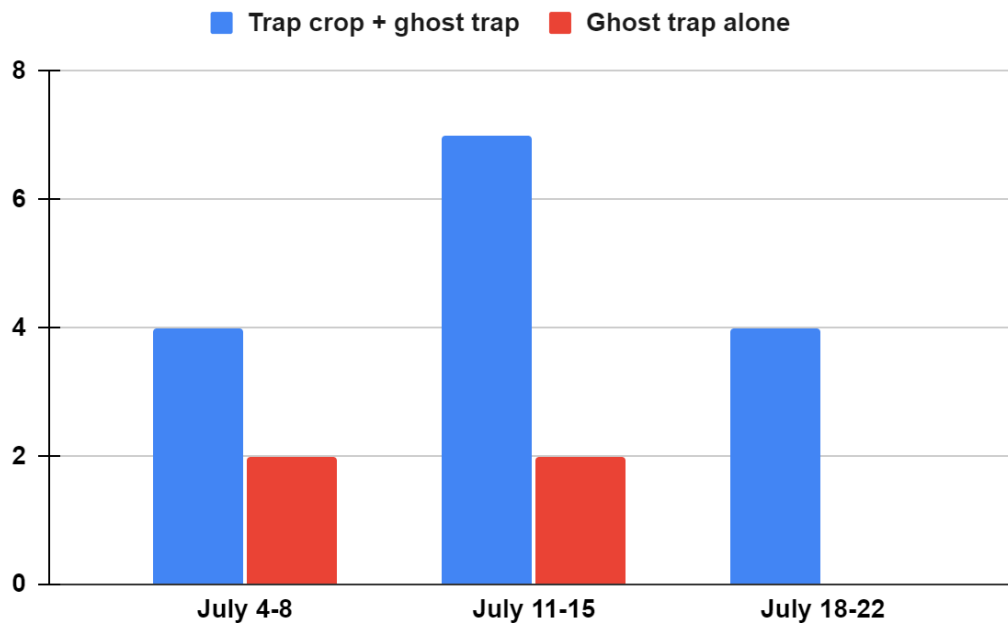
Conditions Today at 15:25 EDT	
Search	Latest Battery
<b>Smart Sensors</b>	
Temperature (air @ 6 feet):	91.68 °F
RH:	45.50 %
Dew Point:	67.68 °F
Wetness:	2.9 %
Rain:	0.00 in
Accumulated Rain (Today-S):	0.00 in
Wind Speed:	3 mph
Wind Direction:	SW 218 °
Gust Speed:	8 mph
Solar Radiation:	771 W/m <sup>2</sup>
Temperature (Soil @ 20 cm):	75.51 °F
Water Content (Soil @ 20 cm):	0.1986 m <sup>3</sup> /m <sup>3</sup>

Weather conditions at UMass Orchard on 24-July at 3:35 PM

## Entomology

Jaime Pinero

**Brown Marmorated Stink Bug (BMSB).** Stink bug numbers are relatively low: only 4 BMSB have been killed in ghost traps for the last 7 days. The four BMSB were found in the dwarf sunflower/buckwheat trap crop area. None in the control (ghost trap deployed in the absence of trap crops).



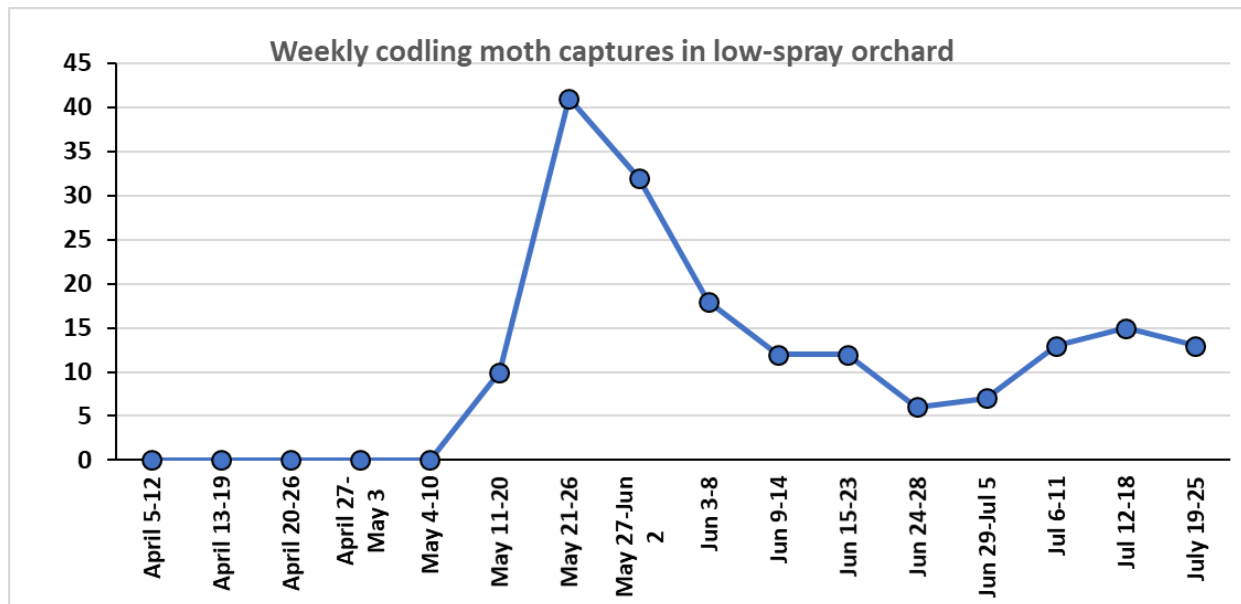
**Spotted-wing drosophila.** No SWD update this week..

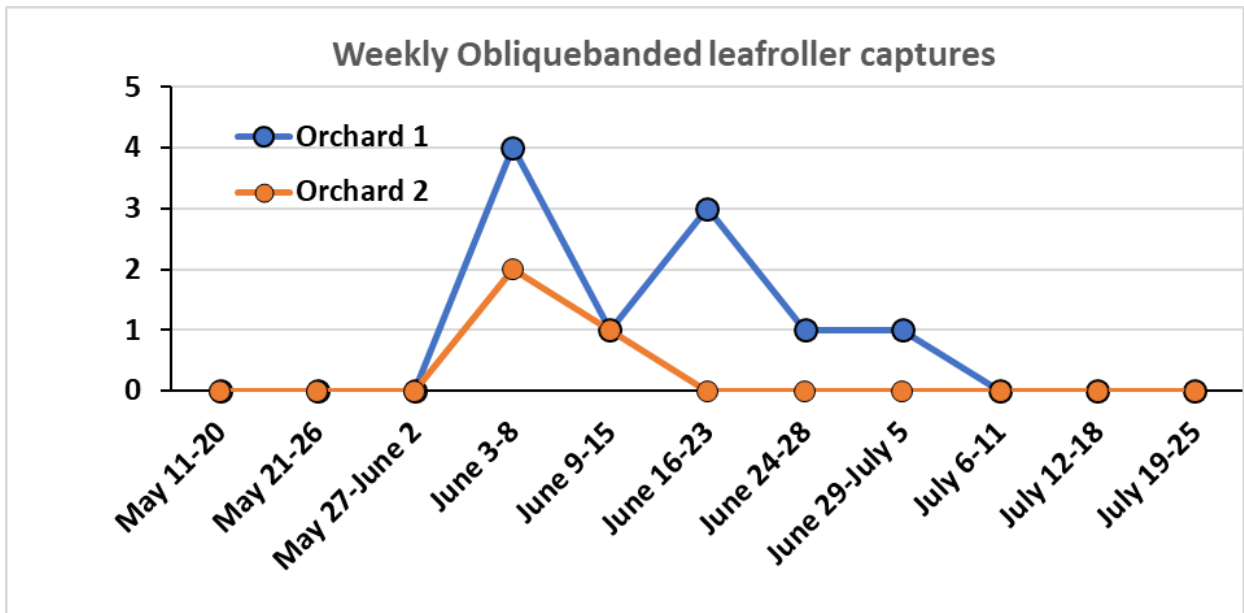
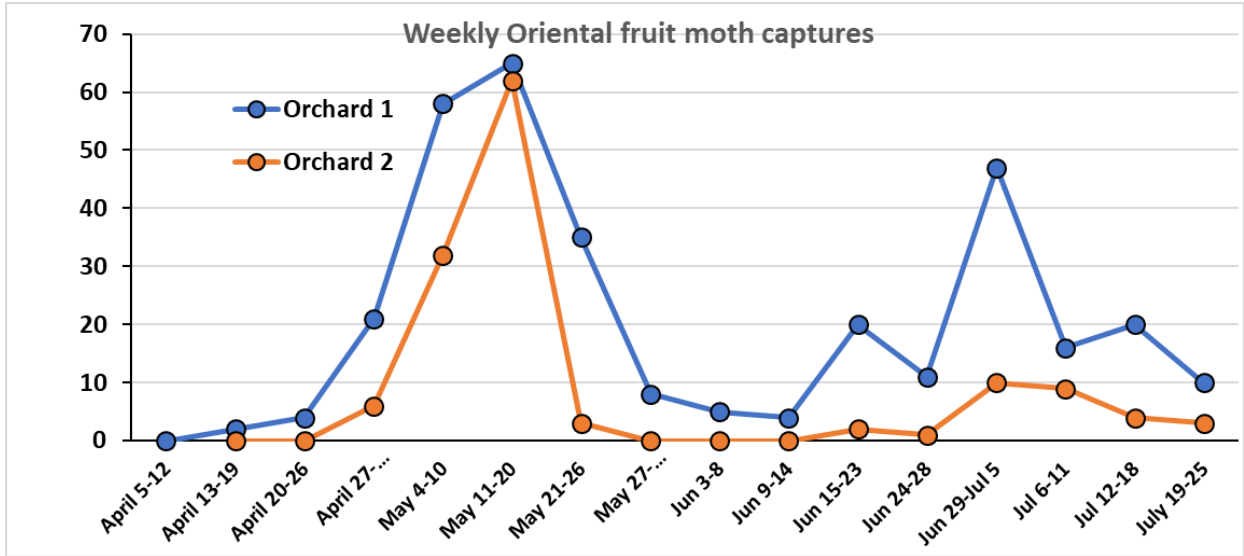
**Apple maggot fly (AMF).** Starting this week, we will present the AMF trap capture data with the identity of the orchards. For each orchard block, the first two rows correspond to the average number of AMF in unbaited sticky spheres deployed in grafted versus non grafted trees. The third row presents AMF captures in adjacent blocks. Overall, AMF numbers seem to be very low. Even for the block that had a larger number of flies, captures have decreased.

<b>X Block - UMass</b>	<b>Grafted trees</b>	15.25
<b>X Block - UMass</b>	<b>Non-grafted trees</b>	2.5
<b>X Block - UMass</b>	<b>Adjacent block</b>	0
<b>Empire Block - UMass</b>	<b>Grafted trees</b>	0
<b>Empire Block - UMass</b>	<b>Non-grafted trees</b>	0
<b>Empire Block - UMass</b>	<b>Adjacent block</b>	0
<b>Rock Mountain - UMass</b>	<b>Grafted trees</b>	0
<b>Rock Mountain - UMass</b>	<b>Non-grafted trees</b>	0
<b>Rock Mountain - UMass</b>	<b>Adjacent block</b>	0
<b>Tougas</b>	<b>Grafted trees</b>	0
<b>Tougas</b>	<b>Non-grafted trees</b>	0
<b>Tougas</b>	<b>Adjacent block</b>	0
<b>Nicewicz</b>	<b>Grafted trees</b>	0
<b>Nicewicz</b>	<b>Non-grafted trees</b>	0

Nicewicz	Adjacent block	0
Sholan	Grafted trees	0.833
Sholan	Non-grafted trees	0.333
Sholan	Adjacent block	0.333
Ragged Hill	Grafted trees	0.25
Ragged Hill	Non-grafted trees	0
Ragged Hill	Adjacent block	0
Clarkdale	Grafted trees	0.167
Clarkdale	Non-grafted trees	0
Clarkdale	Adjacent block	0.333
Red Apple	Grafted trees	0
Red Apple	Non-grafted trees	0.167
Red Apple	Adjacent block	0

**Codling moth (CM), Oriental fruit moth (OFM), obliquebanded leafroller (OBLR).** The second flight of CM seems to be subsiding. The second peak flight seems much lower than the first flight. For OFM, the second flight is almost over. OBLR: Zero or very low captures in the monitored orchards for the last 6 weeks. Because this generation takes almost two months to complete development, then the OBLR adult flight of the second generation is expected to occur in about two weeks. The larvae produced will hatch in August and September. The second-generation larvae, which develop in late summer and fall, feed primarily on leaves although they may occasionally damage fruit.





**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			?	?	?			
Senstar	Pyriproxyfen + Spirotetramat	23 + 7C			Suppression only			Suppression only	H	

*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.

## Horticulture

Jon Clements

### ReTain on peaches

Adapted from New England Tree Fruit Management Guide/Stone Fruit/Peaches/Plant Growth Regulators <https://netreefruit.org/stone-fruit/peaches/plant-growth-regulators>

ReTain® Plant Growth Regulator (Valent Biosciences) is labeled for harvest management and improvement of fruit quality of peaches and nectarines.

The label specifies: Depending on cultivar, orchard conditions, and grower objectives, one or more of the following benefits will be associated with ReTain...

- Improved harvest management
- Additional time for increase in fruit size
- Maintenance of fruit firmness
- Reduced preharvest fruit drop

- Improved fruit quality
- Enhanced storage potential

**Rate and Timing:** Apply one pouch of ReTain per acre one to two weeks prior to the anticipated beginning of the normal harvest period of untreated fruit

**Water Volume:** ReTain efficacy requires that fruit and foliage receive thorough spray coverage. To ensure thorough coverage adjust water volumes based on tree size and spacing and use calibrated spray equipment (i.e., orchard air blast sprayer). Excessive spray application volumes that result in spray runoff will reduce product performance. In most cases, 100 gallons per acre has been shown to be effective.

**Use of Adjuvants:** For optimal response, use ReTain with a 100% organosilicone surfactant. Use a final surfactant concentration of 0.05 to 0.1% (v/v) in the spray tank. To reduce foaming, add the adjuvant last and minimize agitation.

**Harvest:** The normal harvest period for a particular orchard block refers to that time when fruits not treated with ReTain would be harvested. To help determine the beginning of the normal harvest period, refer to historical trends for harvest dates and the “days from full bloom to harvest” interval for each cultivar in your area, and closely monitor the fruit maturity development for the current season.

**Additional Notes:** Pre Harvest Interval (PHI): ReTain has a 7 day (PHI) for labeled Stone Fruit.

## Guest article

### Gear Up for Foliar Analysis

Dan Donahue & Mike Basedow, CCE-ENYCHP, Eastern New York

Reprinted from Tree Fruit E-Alert, July 20, 2021 ([Eastern New York Cornell Commercial Horticulture Program](#))

A good sampling timing for foliar mineral analysis is 80-90 days post-full bloom, late July-early August for Hudson Valley sites, one week later for the Saratoga area, and two weeks later for the Champlain Valley. (Ed. note: most of MA is somewhere between Hudson Valley and Saratoga area.)

Foliar analysis provides a more accurate estimation of your orchard’s nutritional status than soil analysis. However, at the very least your orchard soil should be tested every few years for pH, and for nutrient status pre-planting and when nutritional deficiencies are identified by either visual observation or foliar analysis.

A sample consists of a minimum of 30 leaves from the middle of the current season terminal shoots. If sampling is done later in the season, select the first full-sized mature leaf behind the

shoot tip. Select 1-2 leaves per shoot from several shoots on each of trees located throughout the area being sampled. A minimum of 50 grams (~ 2 oz) fresh weight is needed. Select shoots that are well exposed to light and are of average vigor (length and diameter) from the trees in the planting. Wash the samples with distilled water to remove pesticide and foliar nutrient residues.

Foliar analysis shows how effectively the tree is moving essential nutrients from the root zone to the leaf tissue. Unfortunately for Honeycrisp growers with bitter pit issues, calcium status of leaf tissue is not a reliable predictor for bitter pit expression.

Here are links to two analytical laboratories which will conduct an accurate analysis, and make nutrient recommendations based on a database of research results:

[Dairy One Laboratories](#)

[Waypoint Analytical](#)

Choose a lab and review the sampling protocol, paperwork, and submittal instructions carefully. There will be a charge for each sample processed. Be sure to specify the crop, and for apples, the variety.

Dairy One will also want to know the orchard's soil type. The USDA NRCS offers a web-based application which will help you identify the predominant soil type in your orchard if you don't already have a soil map on paper or a soil survey book. [Click here to access the soil survey website.](#)

(Ed. note: other lab options include [University of Maine](#), [University of Connecticut](#), and [Pennsylvania State University](#).)

## 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 August 9, 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](#)