



## Healthy Fruit, Vol. 28, No. 16, July 7, 2020

Prepared by the University of Massachusetts Amherst Extension Fruit Team

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### Current degree day accumulations

UMass Cold Spring Orchard, Belchertown, MA (Since January 1)	6-July
Base 43 BE (NEWA, since January 1)	1626
Base 50 BE (NEWA, since January 1)	1059

### Upcoming pest events

Adapted from [Scaffolds Fruit Journal](#)

Coming events	Degree days (Base 43 BE)
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Apple maggot fly 1st catch	1222-1762
Apple maggot fly 1st oviposition punctures	1605-2157
Codling moth 2nd flight starts	1584-2211
Dogwood borer flight peak	1415-1847
Lesser appleworm 2nd flight starts	1429-2108
Lesser peachtree borer flight peak	809-1734
Obliquebanded leafroller 1st flight subsides	1642-2049
Oriental fruit moth 2nd flight peak	1463-1953
Peachtree borer flight peak	1085-2014
Redbanded leafroller 2nd flight peak	1507-1960
San Jose scale 2nd flight starts	1629-1979
Spotted tentiform leafminer 2nd flight peak	1367-1774

## Announcements and Upcoming meetings

The UMass Plant Diagnostic and Soil Testing Laboratories have reopened!

**The UMass Plant Diagnostic Laboratory has reopened for plant disease, insect pest and invasive plant/weed samples.** At this time, we can only accept mail-in samples, walk-in samples cannot be accepted. Please refer to our website for instructions on sample submission and to access the submission form: <https://ag.umass.edu/services/plant-diagnostics-laboratory>. Mail delivery services and staffing have been altered due to the pandemic, so please allow for

some additional time for samples to arrive at the lab and undergo the diagnostic process. We look forward to resuming activities and diagnosing your plant problems!

**The UMass Soil and Plant Nutrient Testing Lab** is pleased to announce that we will be accepting new orders for ROUTINE SOIL ANALYSIS and PARTICLE SIZE ANALYSIS orders ONLY beginning Monday, 7/13/20. Please do not send orders for other types of analyses at this time. Orders should be sent via USPS, UPS, FedEx or other private carrier. The lab office will remain closed to the general public until further notice. Hand delivered orders will not be accepted at this time. Processing time will be longer than usual since we are operating with reduced staff and staggered shifts. Updates and order forms are available at: <https://ag.umass.edu/services/soil-plant-nutrient-testing-laboratory>.

## **The UMass Extension Fruit Team and the Massachusetts Fruit Growers Association present the 2020 annual summer meeting;**

Dr. Tracy Leskey, Director of the USDA-ARS Innovative Fruit Production, Improvement and Protection Entomology Lab in Kearneysville, WV, will join us to share details of her latest research on Spotted Lantern Fly and Brown Marmorated Stink Bug.

Our very own Dr. Jaime Piñero will share information on his latest research into the pests that “bug” you the most.

To join us please use the link below to pre-register:

When: Jul 23, 2020 05:30 PM Eastern Time (US and Canada)

***Please, register in advance for this meeting:***

<https://umass-amherst.zoom.us/meeting/register/tJckfu6orzloE9Rh5avES0Fj2JXOs2ZW1hBZ>

After registering, you will receive a confirmation email containing information about joining the meeting.

We will also be keeping up the orchard tour tradition! This year, since we are unable to join you all in the orchard, we will be inviting you to take a tour of all our research at the UMass Orchard on our [YouTube](#) Channel! We will be sharing short videos (pssst, check out the newest videos on our “[2020 UMass Extension Fruit Team Virtual Summer Tour](#)” playlist!) of all the great work happening at the Orchard and even treat you to a visit to the farthest reaches of the Orchard we don’t normally get to take you to on our in-person tours. Everyone gets a front row seat this year!

But wait, that’s not all!! Dr. Jaime Piñero will send those of you who are interested two laminated IPM infographics (shown above) for your farmstand or just general enjoyment. This is an excellent tool to use when discussing your farm’s IPM strategies with the public. To receive this gift, please be sure to include your address when [registering](#) for the summer meeting.

## **The way I see it...**

Jon Clements

Not a whole lot going on that I can see. Although I suspect the bugs and pathogens are happy. I can confirm that with several orchard visits last week, fire blight in two, many codling moths in trap in one orchard, and hail in one although a report of a second round of hail in another orchard. Winter 2020-21 can't come fast enough? Oh, and powdery mildew gone bad, really bad? See picture below. No, that is not fire blight. That's about it, and there won't be a Healthy Fruit next week, we will go on an every other week schedule as it really is turning quiet out there. Well, unless you are a bug or a disease... :-)



Powdery mildew infection got nasty!



Hail and Honeycrisp do not mix well!!!

## Insects

Jaime Piñero

### Weekly report of insect pest captures in monitoring traps at CSO (Belchertown, MA)

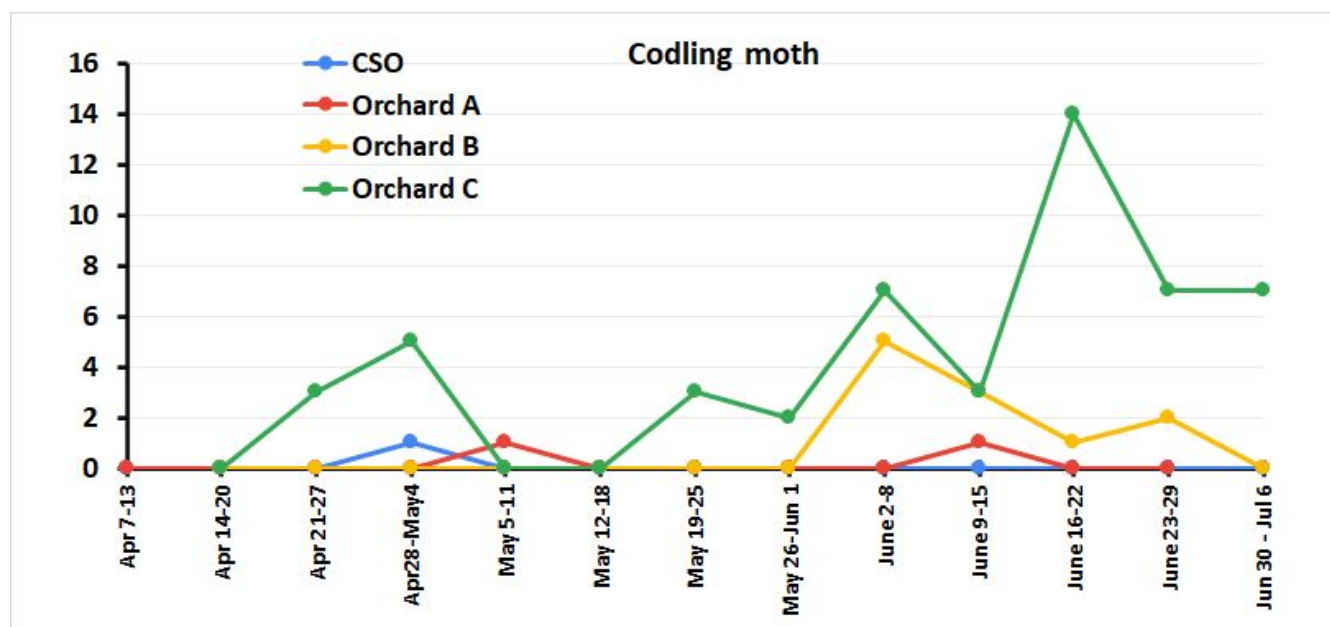
[Period: 6.30 - 7.6](#)

Insect	Average captures/trap	Notes
Redbanded leafroller	0	Pheromone-baited trap
Oriental fruit moth	0	Pheromone-baited trap

Codling Moth	0.5	Pheromone-baited trap
Spotted tentiform leafminer	86	Pheromone-baited trap
Obliquebanded leafroller	0	Pheromone-baited trap
Spotted Wing Drosophila	8.25	Males and females combined. Diluted Concord grape juice-baited trap
Apple Maggot Fly	0.80	Unbaited sticky-coated red spheres

**Codling moth.** In the June 23rd issue of *Healthy Fruit* I discussed variability in CM trap captures among locations, leading to several weeks' difference in the setting up of BIOFIX for CM. For example, in Belchertown, the BIOFIX for CM occurred on June 22<sup>nd</sup> whereas in another location, the BIOFIX took place on May 4<sup>th</sup>. Yet, in a third orchard, the BIOFIX was on June 8<sup>th</sup>.

While for most orchards we are monitoring it seems we still are at the tail end of the first CM flight, in one orchard (see orchard C in the chart below) that had an early CM start, the second adult CM flight is already occurring.



**Mites.** Management of mites during the growing season is based on scouting and the use of miticides or summer oil treatments.



Avoid or minimize the use of pyrethroids or other pesticides highly toxic to mite predators. A single application of a pyrethroid can kill beneficial mite populations. Pyrethroids can also stimulate red mites to reproduce more rapidly and increase the number of generations they have in a season.

#### Scouting for mites:

July 1-30 thresholds: 5 mites per leaf

August 1<sup>st</sup> through harvest: 7.5 mites per leaf.

The following table was extracted from the 2020 NETFMG. I added one column to indicate the impact of each material on predatory mites (*Amblyseius fallacis* and *Typhlodromus pyri*).

IRAC	Product	Rate/Acre	REI hours	PHI days	Efficacy	Toxicity to predatory mites <sup>1</sup>	Comments
6	Agri-Mek SC	2.2 to 4.2 fl. oz.	12	28	High	<b>Moderate</b> (30-70% mortality)	Add horticultural oil (not dormant oil).
10A	Apollo 4SC	4 to 8 fl. oz.	12	45	High	<b>Low</b> (0-30% mortality)	Tank mixing with oil improves control. Primarily an ovicide.
10A	Onager 1EC	12 to 24 fl. oz.	12	28	High	?	One application per season. Primarily an ovicide.
10A	Savey 50DF	3 to 6 oz.	12	28	High	<b>Low</b> (0-30% mortality)	One application per season. Primarily an ovicide.
10B	Zeal 72WS	2 to 3 oz.	12	14	High	<b>Moderate</b> (30-70% mortality)	One application per season.
25	Nealta	13.7 fl. oz.	12	7	High	<b>Low</b> (0-30% mortality)	Apply at the first sign of mites, and before the population increases. Do not make more than 1 application before using an effective miticide with a different mode of action.
12B	*Vendex 50WP	1 to 2 lb.	48	14	Low	<b>Low</b> (0-30% mortality)	
20B	Kanemite 15SC	31 fl. oz.	12	14	High	<b>Low</b> (0-30% mortality)	
21A	Nexter 75WS	4.4 to 5.2 oz.	12	25	High	<b>Moderate to High</b> (more than 70% mortality)	
21A	Portal 0.4EC	2 pt.	12	14	High	<b>Low</b> (0-30% mortality)	
23	Envidor	16 to 18 fl. oz.	12	7	High	<b>Low to Moderate</b>	
none	Acramite 50WS	0.75 to 1 lb.	12	7	High	<b>Moderate</b> (30-70% mortality)	

<sup>1</sup>Source: Cornell University (2020)

## Interested in killing plum curculio larvae in the soil? Free beneficial nematodes!

Within the next few days, I should be receiving a large amount of entomopathogenic (= insect-killing) nematodes (EPNs) for field applications in commercial orchards, courtesy of BASF.

There will be enough EPN material to give away to 4 growers interested in applying nematodes to hot spot areas to kill PC larvae in the soil. Each orchard will receive about 500 million nematodes, enough to cover an 0.12-acre area.

Let me know ([jpinero@umass.edu](mailto:jpinero@umass.edu); text me at 808-756-2019) this week if you are interested in receiving nematodes, I will be happy to hand-deliver. ***The EPNs will need to be applied (I will provide instructions) within 4-5 days after receiving the material.***

**Our research (2013-2019) has shown that, on average, the densities of summer-generation adult PCs can be reduced by 83% just by applying the most effective EPN species: *Steinernema riobrave*.**



## Diseases

Liz Garofalo and Dan Cooley

In the swing of summer disease.

**Sooty blotch & Flyspeck (SBFS)** are two different diseases; sooty blotch is caused by a flood of felonious fungi while flyspeck is caused by just one- *Zygophiala jamaicensis*. These fungi all overwinter on various hosts to include wild brambles and bittersweet (one more reason to loathe this contemptible weed). Fruit infections *can* occur as early as 2-3 weeks after petal fall. For the sake of practical management, these two diseases are considered as one big (cosmetic) mess.

According to [RIMpro](#), the first Sooty blotch infection should have initiated sometime around June 28, right about when that lovely 4-5 day stretch of rain came through. Currently, no visible symptoms are estimated to have appeared, nor are they expected to show up in the foreseeable forecast, based on expected weather patterns for the next 6 days.

As of July 6, NEWA's SBFS model estimates that, if your last fungicide application was made on or before June 27 (based on Belchertown, MA weather data) you should be watching the weather for an upcoming rain event of two or more days. Suggesting that if these conditions occur, you will need to make a fungicide application. NEWA also provides a handy list of materials to use for SBFS (see pic. below).



## NEWA Apple Disease Models

Select a disease:  
Sooty Blotch/Flyspeck ⌵

State:  
Massachusetts ⌵

Weather station:  
Belchertown-2

Date of Interest:  
7/6/2020

Calculate

Map
Results
More info

### Sooty Blotch and Flyspeck Risk Predictions for Belchertown-2

**Petal fall date for McIntosh:** 5/21/2020 Click if petal fall has not occurred

Petal fall date above is estimated based on degree day accumulations or user input.  
Enter the actual date for blocks of interest and the model will calculate the accumulated leaf wetness hours since 10 days after petal fall more accurately.

**Most recent fungicide application date:** 6/27/2020

If petal fall has passed, enter the date of your most recent fungicide application.  
If no fungicide applications have been made, do not enter a date.

In the Risk Summary table, note the accumulated leaf wetness hours since petal fall (Leaf Wetness Hours) and the Risk Level. Leaf wetness hours, rain events, and the last fungicide application date are taken into consideration in assessing risk level. To estimate risk in the near future, look at the probability of rain.

Consult the Risk Level IPM Guidelines below the **Risk Summary** table.

Sooty Blotch and Flyspeck Risk Summary - Northeastern US Model								
	Past	Past	Current	5-Day Forecast			Forecast Details	
Date	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11
Days since petal fall	44	45	46	47	48	49	50	51
Accumulated Leaf Wetness Hours - ALWH	108	108	109	114	124	130	136	144
Risk Level	Low	Low	Low	Low	Low	Moderate	Moderate	Moderate

**Rain Events and Fungicide Depletion Estimate**

Days since last fungicide application	7	8	9	10	11	12	13	14
Rain since last fungicide application	1.83	1.83	1.83	1.84	1.96	1.96	1.96	1.96
Daily rain amount (inches)	0.00	0.00	0.00	0.01	0.11	0.00	0.00	0.00
Rain probability (%)			-   17	6   43	42   31	40   19	17   36	39   40

NA - data not available. Download Time: 7/6/2020 15:00

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

- NO RISK** - No action needed.
- LOW RISK** - If first cover application has not been made, make first cover fungicide application for apple scab. Otherwise, no action needed.
- MODERATE RISK** - Check the 5-day forecast; a cover application should be made if two or more days with precipitation are predicted. See Fungicides below.
- HIGH RISK** - 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

If your most recent fungicide application was made on June 28 or later, NEWA estimates **low risk** (see pic. above for what “low” means). With 40% chance of rain on Wednesday and 40% chance of rain Thursday afternoon (for Belchertown, MA) the chances of needing to make a fungicide application for SBFS are slim at this time. UNLESS you are in part of the state lucky enough to not be experiencing a moderate drought (a little more than 50% of the state) or abnormally dry conditions (another 15% of the state). About 30% of the state is not experiencing a water deficit at this time (Cape and Islands, Plymouth, Bristol and parts of Norfolk and Suffolk counties).

One good thing that may have come from this drought is a reduction in shoot infections from **brown rot**. This of course means reduced inoculum to going into fruit ripening times but not eliminated though. Cherries, and in some orchards, peaches, will need to be protected from

brown rot infection... Assuming it rains again. Which, in the eastern/southeastern part of the state, looks like it may be this Friday.

Indar (FRAC 3; peach, cherry), Fontelis (FRAC 7; peach, cherry) and Elevate (FRAC 17; peach) are all listed as having “excellent” efficacy against brown rot.

## **Horticulture**

Jon Clements

As per my comments above, not a whole lot is going on. The apple crop is seemingly increasing, but we knew that was going to happen as the apples got larger. Cherry harvest is in full swing but will be waning real soon. I ran across several new Zoom meetings/webinars posted recently on the Cornell Cooperative Extension Lake Ontario Fruit Program website <https://lof.cce.cornell.edu/>. One, on irrigation and using the NEWA irrigation model, was today at noon (I missed it) but will supposedly be available later on the [Lake Ontario Fruit Program YouTube Channel](#). Next week on the 14th, review of peel SAP analysis (of Honeycrisp apples) and how it could help in your orchard. Tomorrow, although not horticulture, the basic biology and management approaches for multiple summer diseases. If it truly is quiet (Ha!) you should take the time to watch either Live or recorded for later viewing. I will be watching all of them sooner or later...

## Announcements

### Save the Date! - Scroll down for Weekly Webinars

2020 Events - for details and registration info click on the event title of interest:

CCE prioritizes the health, safety and well-being of the communities we serve. Given the uncertainty surrounding COVID-19, and due to an abundance of caution certain events will be cancelled. Please check back through out the week for any additional event cancellations.

7 Jul - [Apple Irrigation Management in 2020](#) - Noon - 1:15PM registration required for this Zoom Webinar

8 Jul - [Controlling Fruit Rots and Other Summer Diseases Webinar](#) 4-5 PM

9 Jul - [Listening Session for New York State Apple Producers Changes Proposed for Apple Crop Insurance Program](#) - Noon-1:30pm

14 Jul - [Peel SAP Analysis for Early Prediction of Bitter Pit in 'Honeycrisp'](#) - Noon

16 Jul - [How Should my Business Respond to COVID-19? 12-1 PM. A Q & A Zoom Session for the Produce Industry: Apple Packing Facilities:](#) Register now!

20 Jul - [High Tech Precision Orchard Spraying](#) 4-5 PM

### Lake Ontario Fruit Program Webinar Recordings

Have you recently miss a webinar provided by the Lake Ontario Fruit Program that you wanted to see, or would you like to review the information again? Then check it out at the [Lake Ontario Fruit Program YouTube Channel](#). LOF webinars are recorded, processed, and uploaded to the YouTube Channel within 1-2 days following the meeting.

Announcement as seen on <https://lof.cce.cornell.edu/...>

## Small Fruit Update

[Sonia Schloemann](#)

**Crop Conditions:** Drought conditions persist in [Central and Western Counties](#). Irrigation is important on all fruit crops now.

**Strawberries:** Late season varieties are being harvested. [SWD](#) may be an issue in these varieties so monitoring with traps and testing fruit (salt flotation), is important. If spray applications are needed, consult the list of recommended materials for controlling SWD in New England [here](#). Fields with early and mid season varieties are ready for [renovation](#). Fields that are under drought stress should be irrigated with up to 2" of water prior to renovation to promote

healthy regrowth. Watch bearing fields for signs of [Black Vine Weevil](#) and renovate asap if you see evidence of feeding (notched margins of leaves). Fields with high infestation should be treated prior to mowing. New plantings are sending out runners. Sweep these into the rows to keep the rows narrow. Irrigate new plantings to help them establish well. Watch for [Potato Leafhopper](#) damage in new plantings and control where needed.

**Blueberries:** Harvest has begun. Crop looks good from all reports but drought stress can drop fruit size. Irrigate! [SWD](#) is the main concern at this time (see more on this below), but [Blueberry Maggot Fly](#) is also active now. Many of the spray materials used for SWD will also manage BBM. [Japanese Beetle](#) is emerging and beginning to feed on leaves and fruit. Where the number of adults is high, treatment is warranted. Where numbers are lower traps can be useful but should be placed a distance away from blueberry bushes to draw the beetles away from them rather than toward them. Moist humid weather may increase the pressure from [Anthracnose](#) and [Alternaria](#) fruit rots. At this time of year, it's the berry to berry, or secondary, infections that you might be able to control. Primary infections take place earlier in the season. Irrigation is important to hold, size and ripen fruit, but drip irrigation is best to avoid wetting the canopy of the bushes which can spread this disease..

**Raspberries:** Harvest is underway. [SWD](#) is the main concern (see more below). Some reports of sunscald are coming in. There's no treatment for this, but where it's found, the fruit should be harvested so it doesn't lead to rot that spreads to other fruit. [Two-spotted Spider Mites](#) are flaring up in some plantings, especially in tunnels. These flare-ups may be exacerbated by the drought and can be the result of spray applications made to control SWD, which can eliminate mite predators. Treatment is tricky during harvest (limited options) and summer oil applications should not be made in hot humid weather. Primocane varieties are growing well with early varieties flowering and forming green fruit. Watch out for [Potato Leafhopper](#) on these varieties and treat where symptoms are found. Also watch for flagging tips of primocanes that can be a sign of [cane borers](#). Now is a good time to cut those out and remove from the field.

**Currants and Gooseberries:** Harvest is underway. Plants in this Genus don't like heat and may drop fruit during periods of high temps and humidity. Irrigation can help prevent this from occurring. Shade cloth can also help and will reduce the occurrence of sun scald on the fruit.

See the [New England Small Fruit Management Guide](#) for recommended materials and rates for any insect or disease mentioned above.

**SWD UPDATE:** *the main concern for berries now...*



**Trap monitoring shows increased SWD captures**, at this writing. Any ripe or ripening fruits are vulnerable now and should be protected from infestation by **spray applications or exclusion netting**. See more on Exclusion netting in [IPM Berry Blast](#).

Other management steps include:

- promote good air circulation and light penetration in the plant canopy, especially near the ground, through plant spacing, selective cane, branch, leaf, lateral removal,
- apply weed mat on the ground beneath blueberries or raspberries, which can help prevent SWD pupae from accessing soil and thereby reducing survival to next life stage (adult),
- harvest frequently and thoroughly,
- remove cull fruit from the field and dispose of properly (i.e., no open cull piles),
- and refrigerate harvested fruit as soon as possible.

We have just published **3 new SWD Fact Sheets** (one each for [Strawberry](#), [Raspberry/Blackberry](#) and [Blueberry](#)) that can be found on our [IPM Fact Sheet page](#).

We have also posted the **2020 New England SWD Spray Materials Charts** composed by Mary Concklin from UConn. One chart is for [berry crops](#) and the other is for [stone fruit crops](#). These charts help you make pesticide choices (conventional and organic) based on good rotational options and phi restrictions. Remember, spray applications early in the morning or late in the day will be most effective as these are the times SWD are most active in the field.

## Hawkeye's corner (notes from the field)

Liz Garofalo

What looks like fireblight but isn't? This is a little game I like to play throughout the growing season. This time the answer is..... Nectria! Certain varieties tend to be more prone to this fungal disease. The pathogen causes twig death, girdling the new shoot growth. This of course cuts off the vascular system preventing water or nutrient from reaching the shoot tips. This in turn causes the shoot to wilt in a way that looks remarkably like fireblight. With a few notable exceptions; the canker develops salmon colored spore, the petiole and leaf veins are not blackened as a result of bacterial colonization which you would see with fireblight, instead the leaves are just dried out (photo below); and there is no characteristic ooze as is associated with fireblight.





Top left; flagged shoot with “drooping” tip. Top right; close up of canker and infection termination point. Bottom left; 1) terminus of infected shoot, notice the twig itself has no sign of infection yet 2) the petiole of the leaf also has no sign of infection, even though the leaf itself has died.

## Guest article

No Guest article this week...

## Facebook Me



**Jon Clements** was live.

22 hrs · 🌐



Peter Mitchell, Karen Lewis and 1 other

1 Share 17 Views



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Write a comment...



## Useful links

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

[UMass Extension Fruit Team YouTube Channel](#)

[UMass IPM Fruit Loop Podcast](#)

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

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 21, 2020. 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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