Healthy Fruit, Vol. 30, No. 16, August 9, 2022

Prepared by the University of Massachusetts Amherst Fruit Team

Jon Clements, Editor

Upcoming meetings

None.

The way I see it

Jon Clements

Certainly has been hot and humid enough. Some people have got rain, others not so much. At the UMass Orchard in Belchertown, we got 3.80 inches of rain in the past 30 days, so on the lucky side. But 7 days have hit 90 F. or above. So the irrigation is still running. I have been monitoring apple Fruit Surface Temperatures, and so far, knock on wood, it has not been too bad, 110 to 115 degrees F. last Thursday. Your situation may be different though, it will be interesting to see how it all pans out in terms of apple sunburn. Trees are likely under stress, please take a look at the link under Guest article.

I am in western New York Tuesday on the Cornell Lake Ontario Fruit Team Orleans County Orchard Tour. I will try to post some updates to Facebook or Twitter. So I will leave the rest of Healthy Fruit to Jaime. The next Healthy Fruit will likely be an apple maturity update, yup, it's that time already.

Entomology

Jaime Pinero

Spotted lanternfly ALERT! A report received through the MDAR pest website last week has led to the discovery of a new infestation of spotted lanternfly in Springfield, MA. Please see below for the press release, which is also available online at https://www.mass.gov/news/state-agricultural-officials-ask-residents-to-report-sightings-of-the-invasive-spotted-lanternfly

MDAR is urging the public to be on the lookout for this pest, especially if they live or work in the Springfield area. Spotted lanternflies may be found on sides of buildings, in or on vehicles, or on host plants, including tree of heaven, grape, maple and walnut. Anyone who has recently received goods or materials from states where SLF is known to have been introduced (including Connecticut, Delaware, Indiana, Maryland, New Jersey, New York, Ohio, Pennsylvania, Virginia, and West Virginia) should also be on the lookout. Additionally, if a spotted lanternfly is found, the public is asked to take a photo or collect the specimen, and report the sighting using MDAR's online reporting form.

State Agricultural Officials Ask Residents to Report Sightings of the Invasive Spotted Lanternfly

Hampden County Find Indicates Species Is Continuing to be Found in New Areas

Photo: Spotted lanternfly adult (left) and late-stage nymph (right) (Credit: USDA)

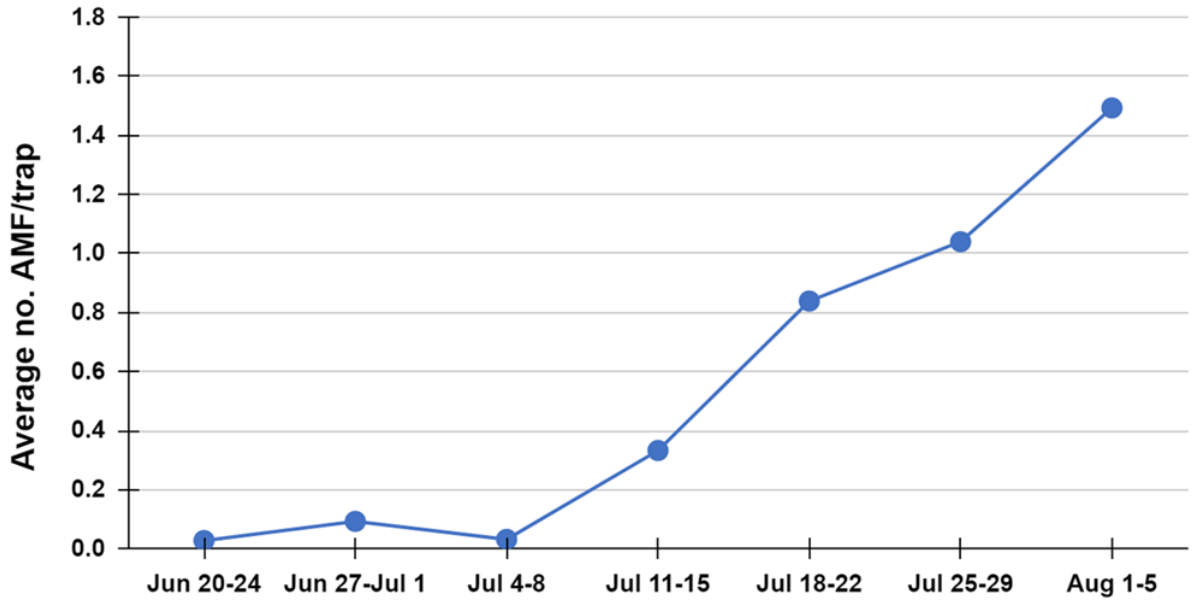
Mites. European red mite is a pest of pome and stone fruits, nuts, berries, and some ornamental trees and shrubs. Apple and pear cultivars vary in their susceptibility to mite injury. The highest red mite populations are typically seen on Red Delicious and Rome apples.

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: Threshold from August 1st through harvest is 7.5 mites per leaf.

A mite IPM program depends largely on the phytoseiid predatory mites *Typholdromus pyri* and *Neoseiulus fallacis* to regulate pest mites to low levels during the cooler spring and late summer/fall months.

Apple maggot fly (AMF) AMF populations have been increasing for the past 3 weeks in most orchards. The chart below shows weekly AMF captures per unbaited sticky sphere across all monitored orchards in MA. Below the chart is the weekly table that shows captures in various blocks.



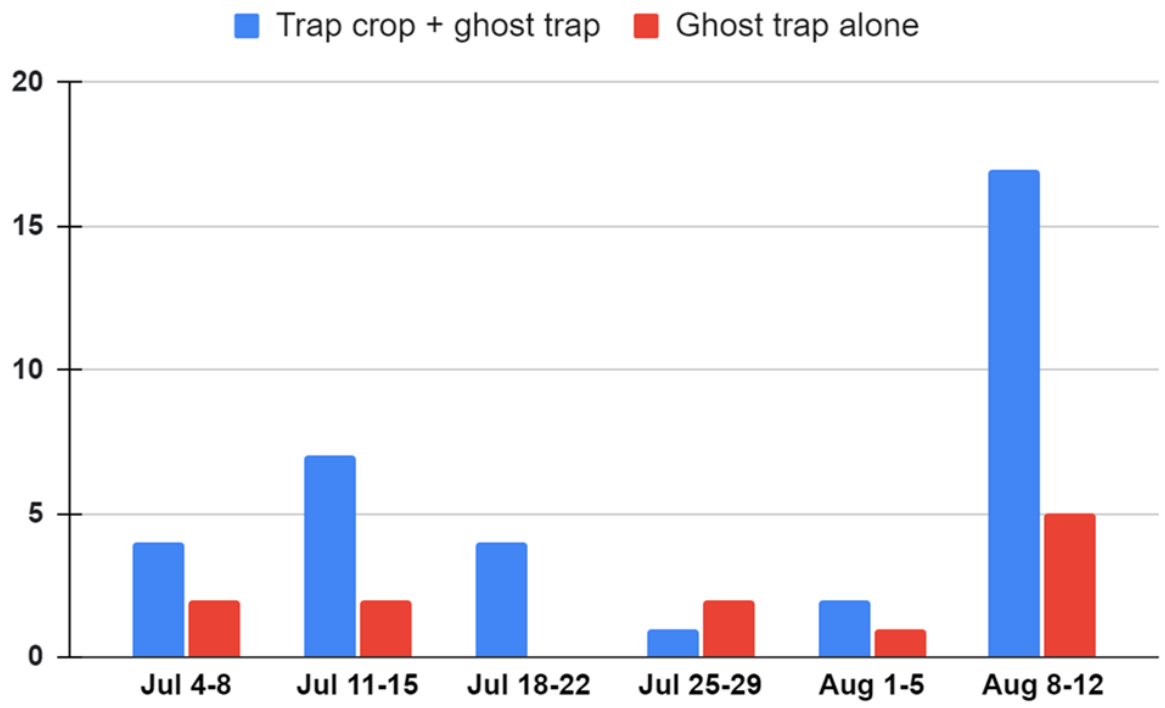
Orchard	Block	Mean number of AMF/unbaited sphere (Aug. 1-5, 2022)
CSO -X Block	Grafted trees	26
CSO -X Block	Non-grafted trees	32

	Adjacent block	0.25
CSO - Empire Block	Grafted trees	1.75
CSO - Empire Block	Non-grafted trees	1.5
	Adjacent block	1.4
CSO - Rock Mountain	Grafted trees	0.5
CSO - Rock Mountain	Non-grafted trees	0.75
	Adjacent block	0.33
Tougas	Grafted trees	1.75
Tougas	Non-grafted trees	0.25
Tougas	Adjacent block	0
Nicewicz	Grafted trees	1.75
Nicewicz	Non-grafted trees	0.5
Nicewicz	Adjacent block	0
Sholan	Grafted trees	1.33
Sholan	Non-grafted trees	2.00
Sholan	Adjacent block	0.67
Ragged Hill	Grafted trees	1.75
Ragged Hill	Non-grafted trees	1
Ragged Hill	Adjacent block	0.25
Clarkdale	Grafted trees	8.67
Clarkdale	Non-grafted trees	1
Clarkdale	Adjacent block	3.83
Red Apple	Grafted trees	1.67

Red Apple	**Non-grafted trees**	**1.17**
Red Apple	**Adjacent block**	**3.33**

Brown marmorated stink bug (BMSB). Pheromone trapping represents an excellent monitoring tool for BMSB. Research has shown that a cumulative threshold of 10 adults per pheromone-baited black pyramid trap indicates the need for an insecticide spray to reduce fruit injury, and continued accumulations exceeding 10 adults per trap would trigger successive sprays as the season progresses. Using clear sticky cards, the threshold is 4 cumulative BMSB. Treatment thresholds have only been developed in apple.

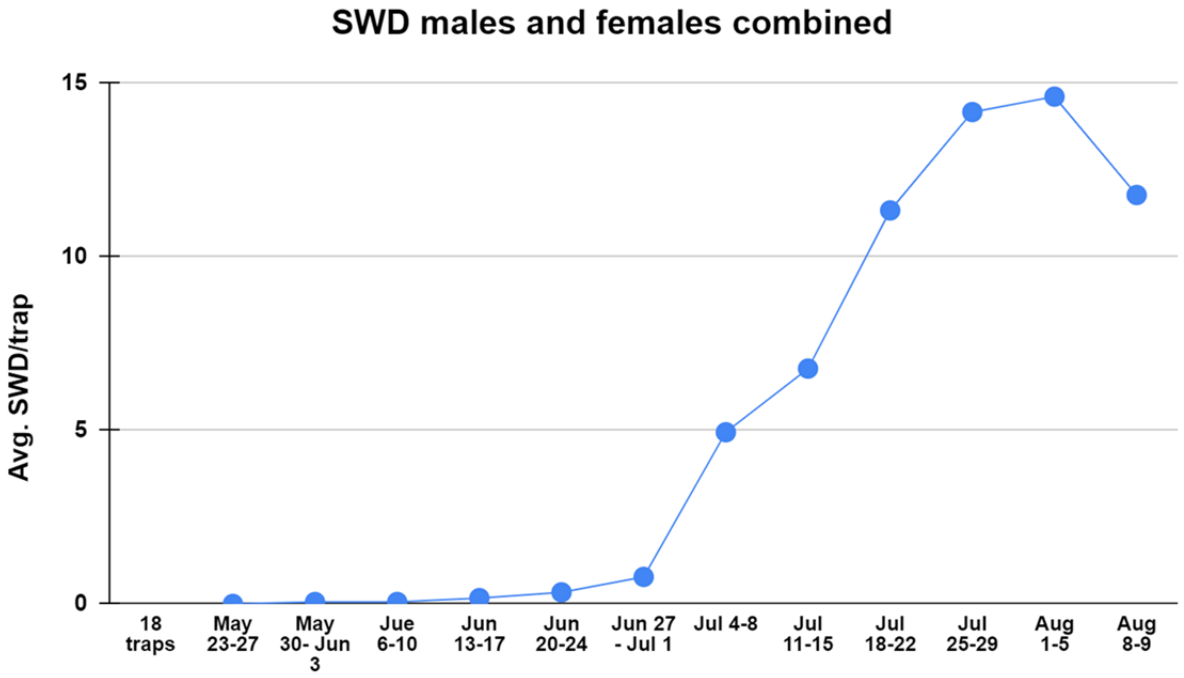
Our trap cropping / ghost trap study (see chart below) shows that BMSB populations have started to increase, compared to BMSB numbers recorded a couple of weeks ago.



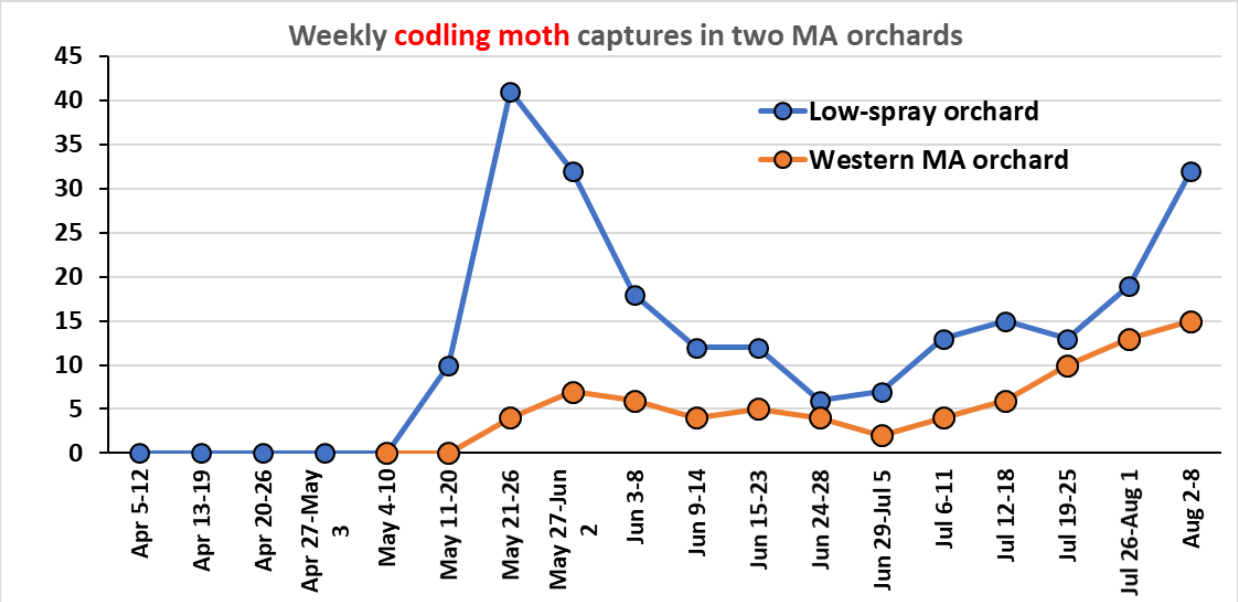
Spotted-wing drosophila (SWD). SWD prefers moderate temperatures and high humidity. Adults are most active at temperatures around 70°F. Adult SWD activity is greatly decreased when temperatures are only 15 degrees colder or warmer than this. As shown in the chart below, after reaching a seasonal peak of captures one week ago, SWD numbers declined most likely due to excessive heat. Research has shown that the lethal maximum temperature killing 75% of SWD flies after a 24-hr exposure is around 91° F. Because during hot summer periods

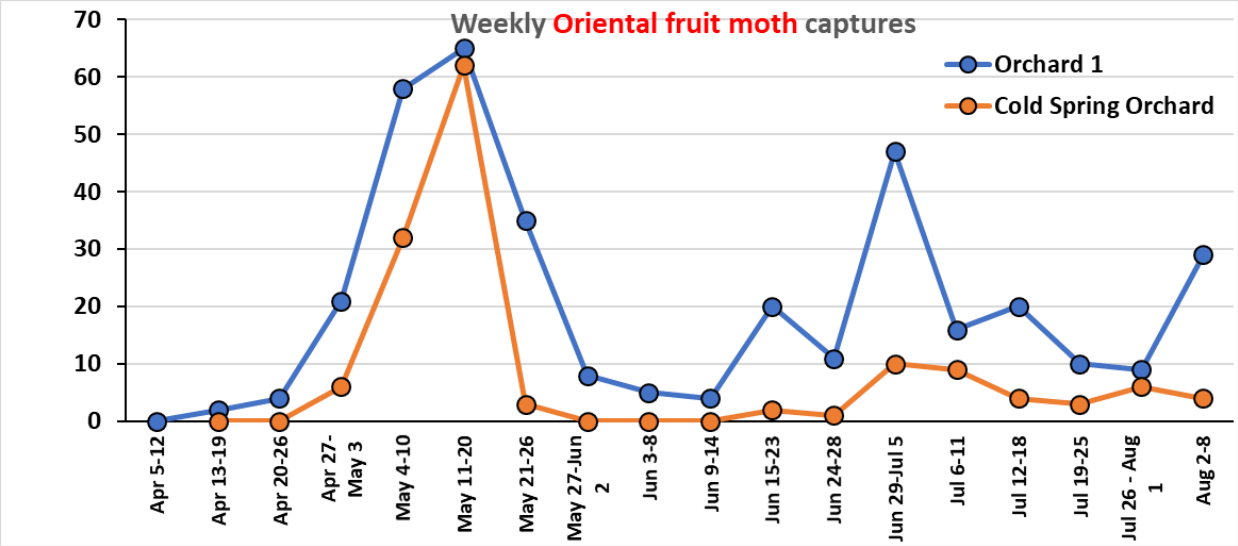
most activity, including egg laying, occurs during dusk and dawn, then we recommend applying insecticides during the periods of highest SWD activity. This will also help protect pollinators.

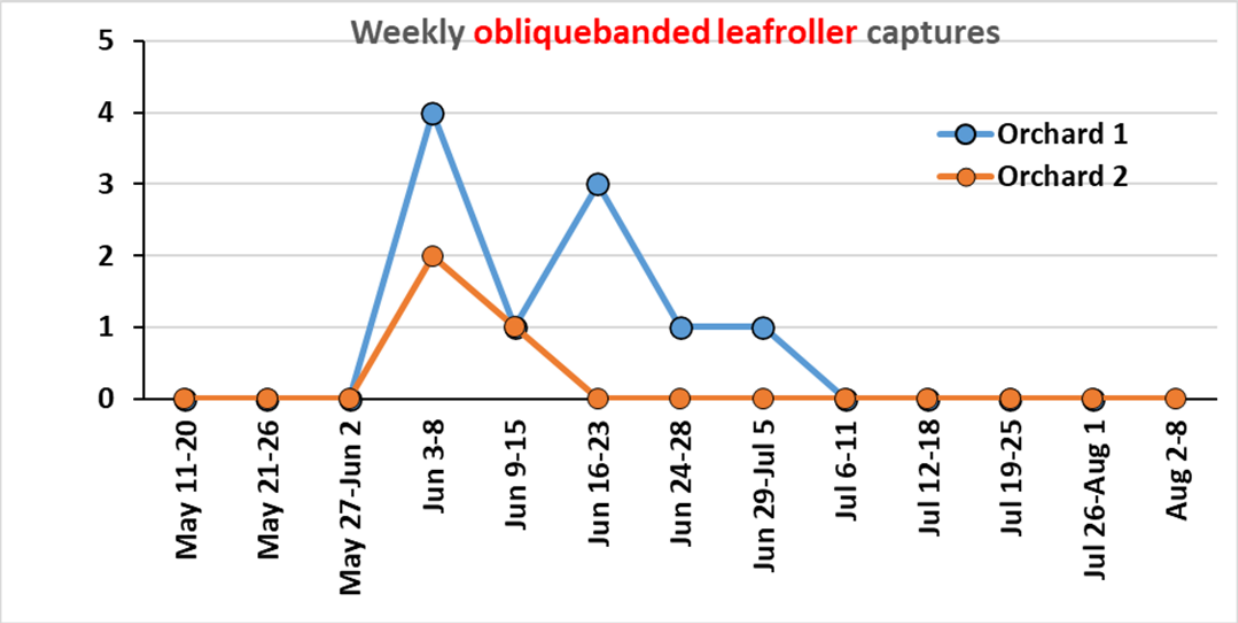
Choose the most effective insecticides with pre harvest intervals that work for your picking schedule. Rotate insecticides according to their modes of action to prevent the development of insecticide resistance. When materials in one IRAC group are used exclusively over an entire growing season and over years, they are at high risk of becoming worthless as a control measure due to resistance development. Always rotate between IRAC groups, as described on the label.



Codling moth (CM), Oriental fruit moth (OFM), obliquebanded leafroller (OBLR). CM numbers are climbing again, which is indicative of the second flight taking place. The second period of larval feeding will be during August and September. OFM third flight seems to be starting this week – this will be confirmed next week. In contrast, OBLR has ‘disappeared’ from the monitored orchards.


Weekly codling moth captures in two MA orchards
Low-spray orchard
Western MA orchard
45
40
35
30
25
20
15
10
5
0
Apr 5-12
Apr 13-19
Apr 20-26
Apr 27-May 3
May 4-10
May 11-20
May 21-26
May 27-Jun 2
Jun 3-8
Jun 9-14
Jun 15-23
Jun 24-28
Jun 29-Jul 5
Jul 6-11
Jul 12-18
Jul 19-25
Jul 26-Aug 1
Aug 2-8


Weekly Oriental fruit moth captures
Orchard 1
Cold Spring Orchard
70
60
50
40
30
20
10
0
Apr 5-12
Apr 13-19
Apr 20-26
Apr 27-May 3
May 4-10
May 11-20
May 21-26
May 27-Jun 2
Jun 3-8
Jun 9-14
Jun 15-23
Jun 24-28
Jun 29-Jul 5
Jul 6-11
Jul 12-18
Jul 19-25
Jul 26 - Aug 1
Aug 2-8



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	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								
Spear-Lep	GS-OMEGA/ KAPPA-HXTX-HV1A (peptide)	32			?	?	?			
Senstar	Pyriproxyfen + Spirotetramat	23 + 7C			Suppression only			Suppression only	H	

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Pathology

Dan Cooley

Ed. note: No pathology update.

Horticulture

Jon Clements

Please see this linked article: Practical Implications of Early- and Mid-Summer Water Stress on Tree Growth, Cropping, and Physiology

Useful links

UMass Fruit Advisor: http://umassfruit.com
Network for Environment and Weather Applications (NEWA): http://newa.cornell.edu
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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 23, 2022. In the meantime, feel free to contact any of the UMass Fruit Team if you have any fruit-related production questions.

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