



Healthy Fruit, Vol. 30, No. 17, August 23, 2022

Prepared by the University of Massachusetts Amherst Fruit Team

Jon Clements, Editor

## Upcoming meetings

None.

## The way I see it

Jon Clements

I have thoughts on the way I see it, particularly when I am driving, but of course once I sit down to write it, nothing comes to mind :-). I did make a few grower visits in the last week, the first time I have been out (other than the UMass Orchard) in a month. Of course during that time, FWIW, I was visiting orchards in Washington and New York. OK, the way I see it in tabular format with pictures!

**State** MA  
**Location** Belchertown  
**Cultivar** Premier Honeycrisp  
**DATE** 8/23/2022  
**pre-harvest drop** few  
**fruit diameter inches** 3.4  
**color % red** 45 striped  
**firmness lbs** 14 (12-16)  
**soluble solids** 13.5  
**starch index** 4-6+                      **DA Index** 0.52 (0.29-0.86)  
**comments** spot pick on acceptable color ASAP, you have a week

**Apple maturity** – nothing out of the ordinary. This is not apple picking weather for sure. I've seen reports of people picking Sansa, Paulared, Gingergold (too early maybe), Zestar! and a few others. Premier Honeycrisp is upcoming soon, like this week. Check out the apple maturity report below. Peach harvest is waning, and where not irrigated, peaches are on the small side but with all the dry weather, eating quality is high and brown rot has not generally been a problem.

**Premier Honeycrisp**

pict fruit



**Bitter pit** – on lightly cropped Honeycrisp is a huge issue. Not to be unexpected, but it just started popping out in the past week or two. Factors that predispose Honeycrisp to bitter pit include; light crop, large apples; excessive nitrogen with long terminal shoot growth; too little calcium, although adequate calcium is by no means a silver bullet; rootstock, B.9 rarely has a lot of bitter pit, while G.41 and G.11 seem to have a lot of bitter pit where fruit set is light. I wish someone could figure out how to put a bitter pit on Honeycrisp, but I am afraid it is something we have to live with. On the right, bitter pit on Royal Red Honeycrisp on G.41 rootstock. Read my [blog post about bitter pit here...](#)





**Southern blight of apple** - ough, confirmed in one Massachusetts orchard resulting in young tree death. This is a new one for us I believe, a first in a commercial apple orchard. Diagnosis confirmed by the UMass Plant Diagnostic Clinic. Anyone who denies global warming lives in a bubble. If you want to get depressed, read more about it [here](#) and (hopefully) Dan Cooley has something to say in Pathology below. On the left, first signs of tree collapse because southern blight is killing the root system of Crimson Crisp on B.9 rootstock.

**Pear psylla** – remains our most difficult insect pest in tree fruits. Fortunately it only infests pears, I am not really sure they are worth growing because of this pest and I am not sure they make any money for anyone? A new one on me, but failure to control psylla later in the season can result in the kind of leaf scorch seen here on the left, Bosc pears are particularly sensitive. Two-spotted spider mite can also cause this kind of leaf browning in pears, but the psylla infestation was quite obvious here. Apparently the honeydew is very concentrated in sugar and in hot conditions causes leaf browning as seen here.



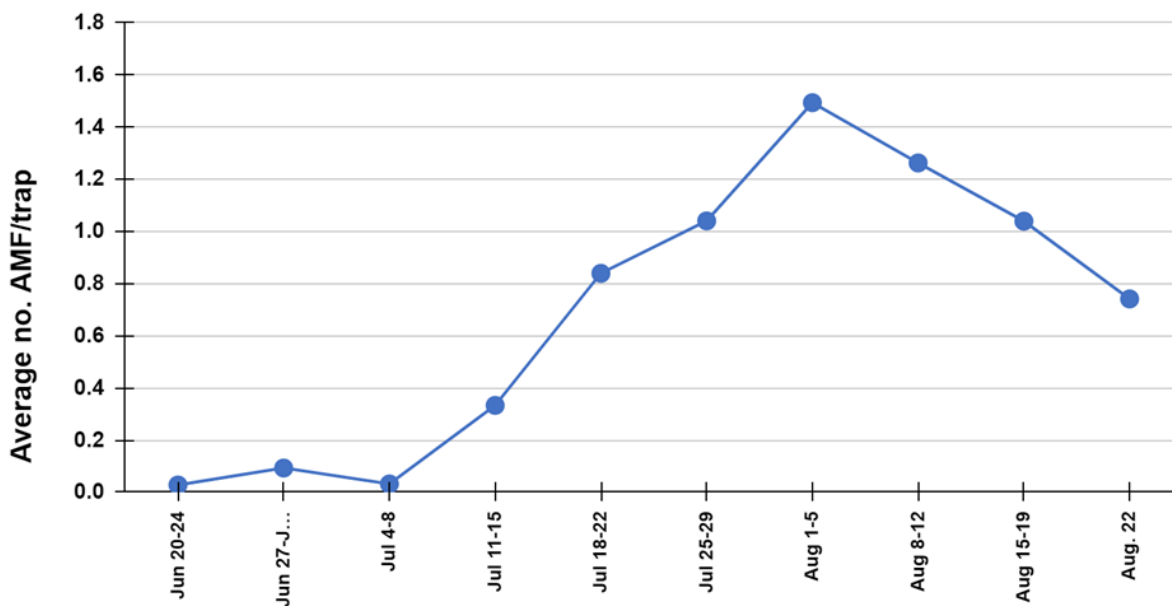


# Entomology

Jaime Pinero

*In addition to the physiological stress and the effects on fruit quality caused by drought conditions, we are recording increased levels of pest injury to fruit in our harvest surveys. Examples of pest damage include bird pecking and rodent and insect (e.g., plum curculio) feeding. Wasps feeding on injured fruits have been frequently observed.*

**Apple maggot fly.** The highest risk of AMF infestation seems to have passed in the monitored orchards. Continue to check sticky spheres in your blocks. The neonicotinoids Belay, Admire and Assail are labeled for AMF control. They have limited lethal action on adult apple maggots but provide strong curative activity on eggs and larvae. The Spinosyn compounds Delegate and Entrust are active on apple maggots when ingested but have shown to be only fair control materials in field trials with high pest pressure, thus are labeled for apple maggot suppression only. The Diamide compounds Exirel and Verdepryn are active on AMF and labeled for population suppression. The effectiveness of insecticide sprays can be improved by adding 3 lbs of sugar per 100 gallons of water to the tank mix.

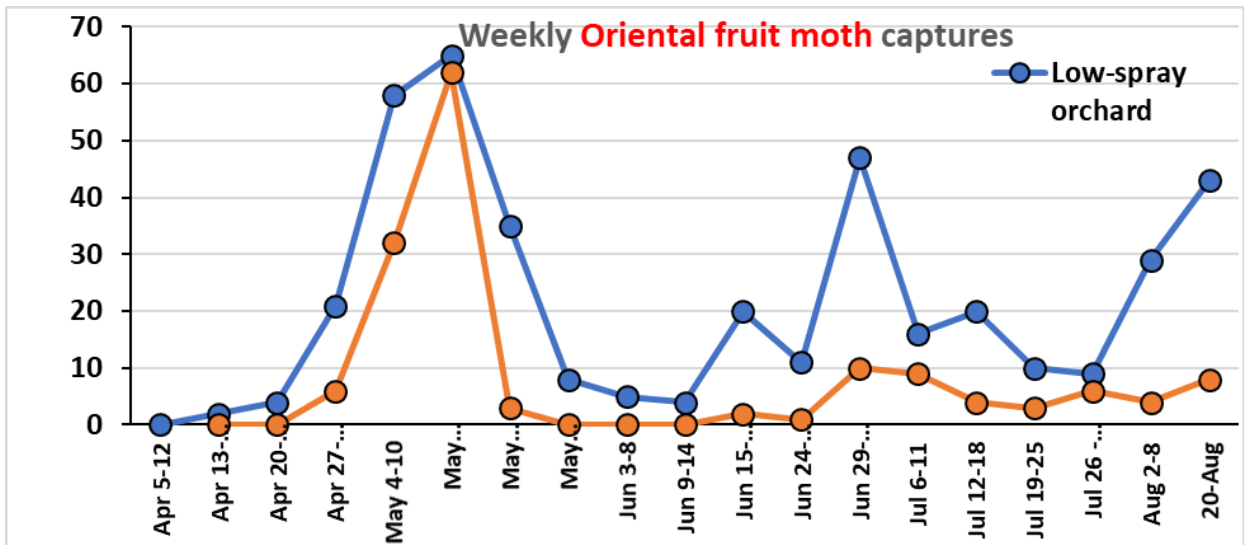
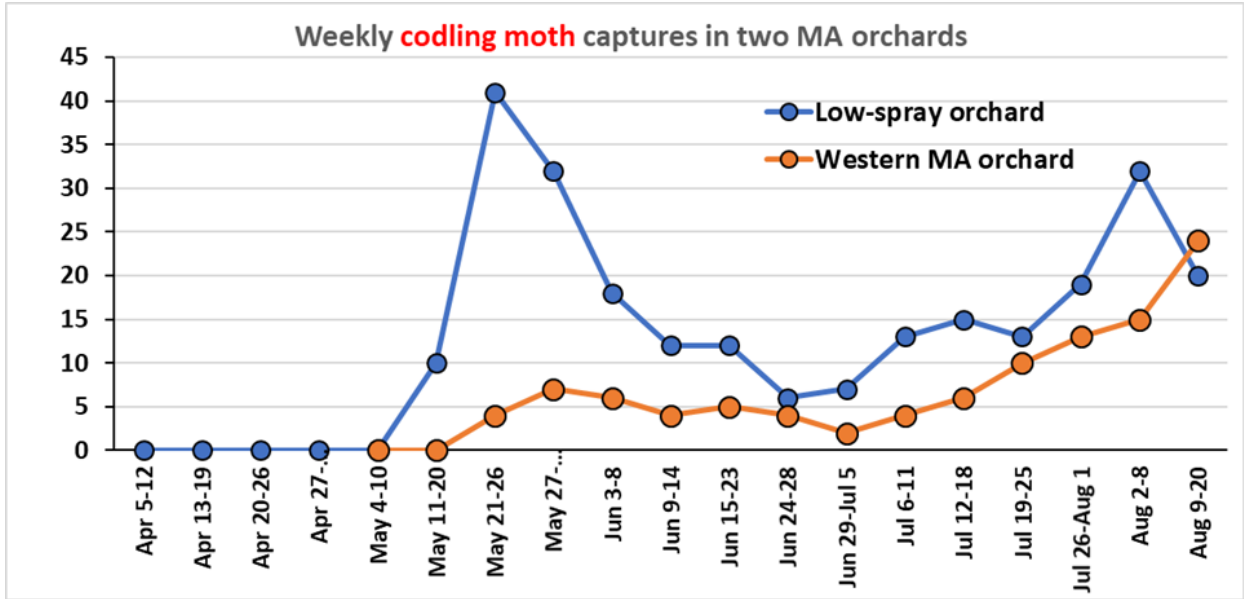


**Codling moth (CM), Oriental fruit moth (OFM).** Populations of both lepidopteran species continue to increase. In problem blocks, the application of a diamide is recommended. However, note these restrictions for Verdepryn:

- Make no more than 3 applications per year.
- Do not exceed 11 fl. oz. (0.072 lb a.i./A) per application.



- Do not apply more than 33 fl. oz./acre/year (0.22 lb. a.i./acre/year)



**Spotted-wing drosophila.** We took traps down last week. No more SWD reports this year.

**Brown marmorated stink bug (BMSB).** No report this week.

**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	

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## Pathology

Dan Cooley

**Southern blight on apples.** Southern blight is a root disease on many kinds of plants and crops including tomatoes and peppers. It's caused by a fungus, *Sclerotium delphinii*. As the name implies, the disease is relatively common in the southeastern US, and the pathogen thrives in warm and moist soil conditions. Southern blight has been known to cause problems on apple trees for nearly 100 years, particularly on nursery trees and young apple trees in the South. As with the summer fruit rots, warmer weather has made southern blight more common in the Northeast.

We first discovered a southern blight problem in apples in Massachusetts in 2017 in a newly planted block, suggesting that some trees had come from the nursery with the pathogen. To our knowledge it hasn't appeared in other orchards in MA since, though it has persisted where it first appeared.

The first southern blight symptoms most people see in apples are dying trees. Checking more closely around the crown and roots, white fungal hyphae, either individual or in mats, are usually visible. Sometimes small, brown round structures made by the fungus, sclerotia, are also visible. The fungus can quickly rot the roots, destroying trees.

Sadly, there aren't any fungicides registered for use against southern blight on apples. Fumigation can kill off the fungus, but is expensive and involves very toxic chemicals. Solarization, heating the soil under plastic, can also reduce the pathogen but again, it's expensive.

Keeping the area around tree trunks free of weeds and dead plants reduces southern blight. Inspect newly arrived nursery trees for any signs of the disease, such as the white hyphae or tan sclerotia. Remove infected trees as soon as they're identified, including the soil in the root zone, and avoid replanting for at least a year.

There are fungicides that are effective against *S. rolfsii* and registered in other crops. Some of these, such as Fontelis, are labeled for use in apples against diseases other than southern blight. In addition, one commercially available biological control, RootShield, has been shown to be effective against southern blight, but curiously it is specifically **not** recommended for use in apples. Hopefully the situation will change with more research over the next few years, and chemical and biological control options will be available.



New apple planting showing tree dieback caused by southern blight.





Base of infected apple and root zone soil, with red arrows indicating white hyphae of the fungus that causes southern blight.



Crown of young apple tree covered with white hyphae and tan sclerotia of *Sclerotium rolfsii*.  
(Photo Kari Peter, Penn State Univ.)





Apple rootstock killed and rotted by southern blight.

## Horticulture (including apple maturity report)




Jon Clements

BEFORE we get into the maturity report, I encourage you to review [ReTain Recommendations for 2022](#). It includes many options for the ReTain application, but we are currently in the application window for Honeycrisp, Gala, and McIntosh, continuing for a couple more weeks depending on your harvest objective(s). That is up to you, but once you determine how you want to manage the harvest, the directions recommendations are pretty clear cut. One thing is to be cognizant of rain showers on the day of application, I would want to see several hours of


drying before any rain. Early morning or late evening application is also preferred, as slow drying enhances uptake of ReTain. Hopefully everyone is getting some rain now, so stress on trees should be reduced and ReTain should be quite effective on all but the most heavily stressed trees and as long as you follow the directions.

OK, regarding the maturity report, all the Gingergold have been harvested here at the UMass Orchard, maybe a little early IMHO but I did not get a chance to look at them. Sansa has been picked too. Quite a bit of watercore in the Zestar!, I am thinking we might see a lot of watercore this year. Brix is exceptional in those Zestar! At 14.7. Premier Honeycrisp ought to be picked in the next week, but the weather has NOT been conducive to red skin color development. Let's hope that turns around soon.

**All observations from UMass Orchard, Belchertown, MA unless otherwise noted.** Target maturity numbers: red color, >50%; firmness, >14 lbs.; soluble solids, >12; DA, 0.60 to 0.40 for Honeycrisp, 0.65 for Gala, 1.00 for Golden Delicious, 1.15 to 1.00 for Red Delicious (higher DA = more "green"); starch index, 4-6.

2022 Date	Variety	Drop	Diameter (inches)	Color (% red)	Firmness (lbs.)	Brix	Starch Index	DA Meter	Comments	Picture
8/23	Premier Honeycrisp	few	3.4	45	14	13.5	4-6+	0.52	Spot pick on acceptable color ASAP, you have a week	
8/23	Paulared	nil	3.2	75	16	13	2-4	0.87	Typical Paulared, one with watercore, a bit tart	
8/23	Zestar!	nil	3.2	65	13	14.7	4-6	0.41	Watercore, does not like heat too much, harvest on red color ASAP	



8/23	Akane	none	3.2	95	18	15.6	7	0.35	Watercore, harvest ASAP	
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## Useful links

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

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

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[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 September 6, 2022. (Maybe. September 5 is Labor Day, Healthy Fruit might not be out until Wednesday.) 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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