



Healthy Fruit, Vol. 28, No. 22, September 29, 2020

Prepared by the University of Massachusetts Amherst Extension Fruit Team

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Announcements and Upcoming meetings

Apple harvest open office hour. Tuesdays at noon through October 6. Apple maturity update, PYO logistics, open discussion. Via Zoom, <https://umass-amherst.zoom.us/j/7562823263>, Meeting ID: 756 282 3263 One tap mobile +16468769923,,7562823263# US (New York)

UMass Vegetable Program: Agricultural Water Twilight Series

Part III: Post-harvest Water Quality and Sanitizer Use

Wednesday, September 30, 2020 - 6:00pm to 7:30pm

Speakers:

- Amanda Deering, Purdue Extension - Background on the different sanitizer materials available or practical for small-medium scale growers and how to measure and monitor them
- Phil Tocco, MSU Extension – Sanitizer use demonstration

Register [here](#)

The way I see it...

Jon Clements

I'd like to think apple harvest is winding down, but of course it is not really. Still, we are on the downhill slide now. Unfortunately, the exceptional harvest weather appears to be coming to an end, but we need the rain badly. Fingers crossed for good weekend weather a few more times. Apple quality in terms of color has been very good with the dry weather though. Interestingly, it appears September will end up being warmer than average, but all the sunny days and a stretch of cool weather mid-month has made fruit quality excellent.

I do want to alert you to the just recently announced Coronavirus Food Assistance Program 2 (CFAP 2). Eligible specialty crops include: apples, peaches, pears, cherries, plums, strawberry, blueberry (and most vegetables). Payment is 8.8 to 10.6% based on 2019 sales for raw fruits and vegetables grown by the producer. The application deadline is December 11, 2020. Contact Farm Service Agency staff at your local USDA Service Center. More information: <https://www.farmers.gov/cfap/>.

Finally, this will be the last official Healthy Fruit for Vol. 28, 2020. The UMass Fruit Team will be planning some winter programming (including pesticide credits) and we will keep you posted via this Healthy Fruit email list. As always, thanks for your support and attention in 2020, and you are always free to contact us at any time. It's going to be a long winter, be good...

Insects

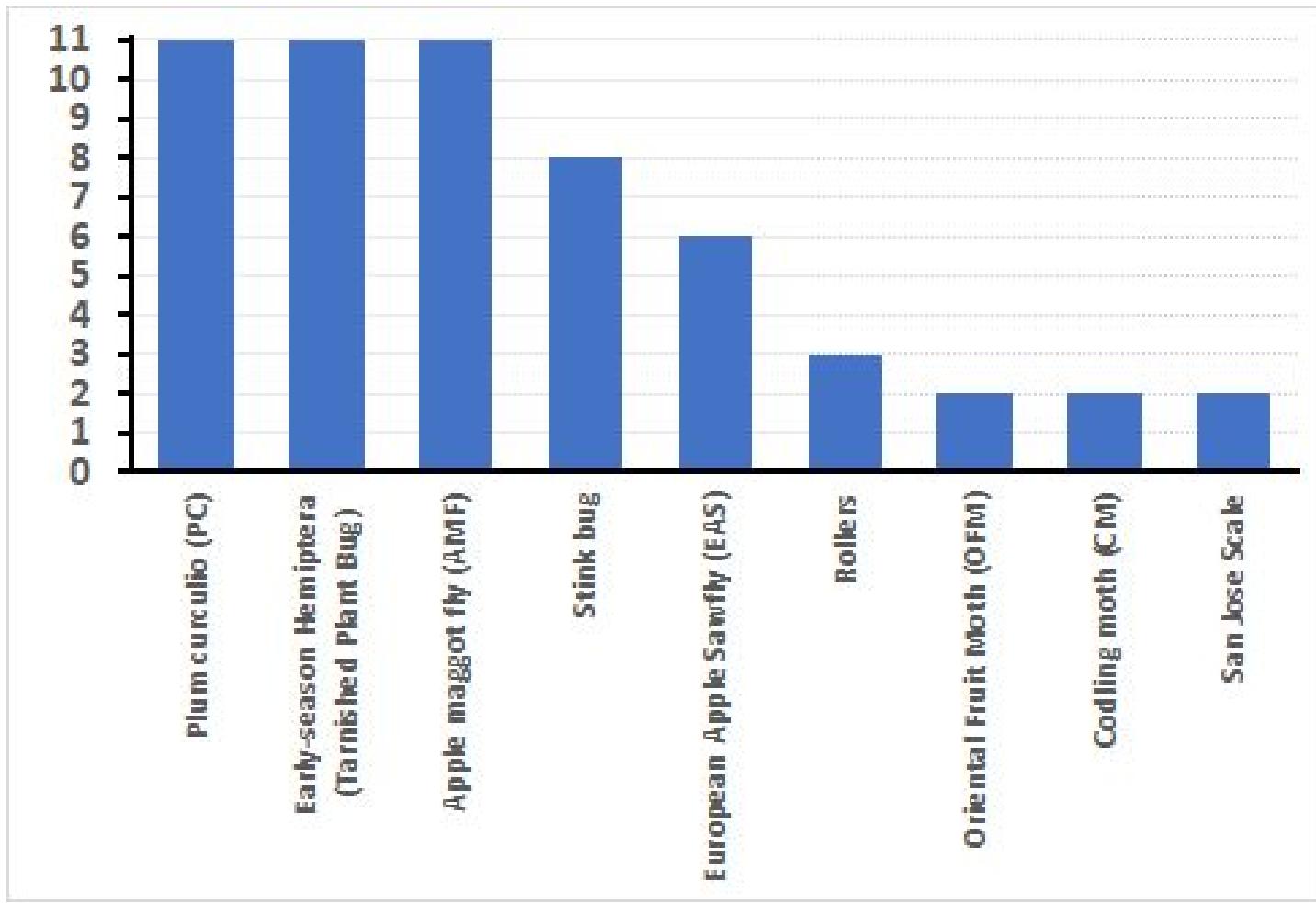
Jaime Piñero

What insect pest was the most damaging to apples in 2020?

This year, in 11 orchards (7 located in MA, 3 in NH, and one in ME) we conducted various types of research that targeted a number of insect pests including apple maggot fly (AMF), codling moth (CM), and leafrollers. No PC research involving odor-baited trees was conducted this year. Therefore, incidence of injury by PC being reported here occurred under standard grower management. In early September, non-destructive harvest surveys were conducted. Across all 11 orchards, 10,560 fruits were inspected for insect injury. Fruit samplings were conducted by J. Pinero and 3 graduate students (Ms. Prabina Regmi, Ms. Dorna Saadat, and Mr. Ajay Giri - thank you for your help!) who received proper training on identification of fruit injury by each of the insect pest species. Below I present the summary of results.

The most damaging insect pest in 2020 in the 11 sampled orchards was PC, followed by TPB, and AMF. Damage caused by these insect pests was recorded at each of the 11 orchards. **In the case of AMF, the actual level of injury may actually be lower than the injury level we are reporting here. This is because each fruit that was suspected to have egg-laying scars was taken to the laboratory. Fruit was incubated individually in containers with a substrate for pupation. We still need to confirm whether damage observed was caused by AMF.**

As shown in the figure below, fruit injury caused by stink bugs was recorded at 8 out of 11 orchards. Injury by EAS, while comparatively low, was recorded in 6/11 orchards. This year, injury by Lepidopteran pests was low, when compared to 2019. For example, injury by leafrollers was only recorded in 3 orchards, and very low levels of injury by OFM and CM were recorded in 2 orchards. San Jose scale was found in two orchards.

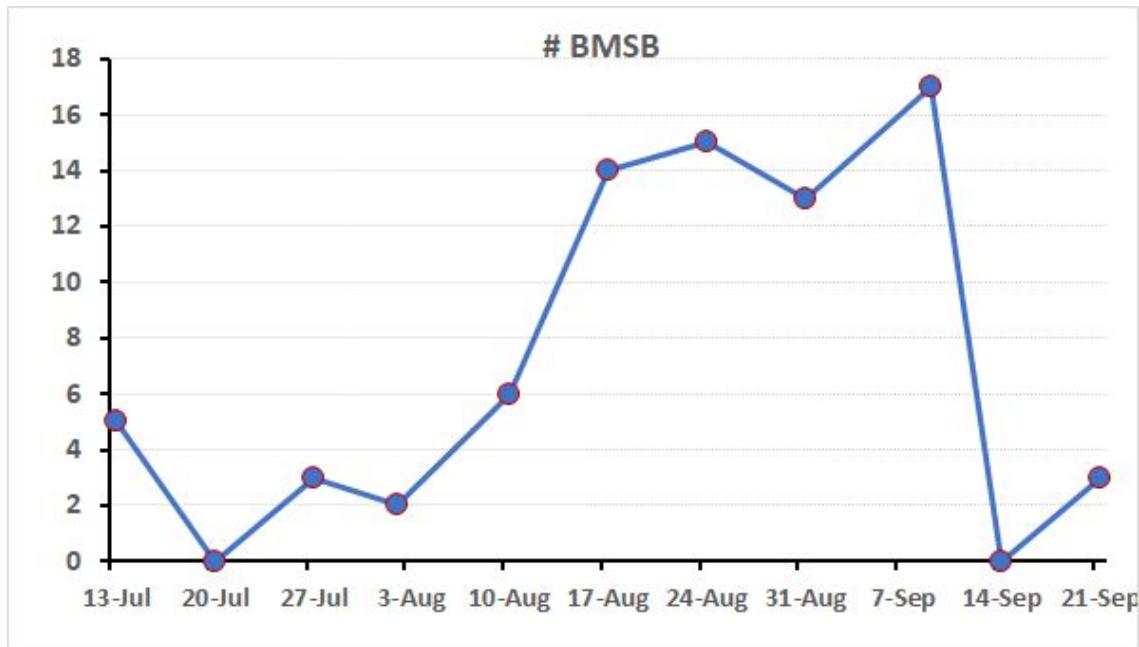


The table below shows the average percentage of fruit that was damaged by each pest, according to tree location (perimeter-row trees versus interior trees). The most damaging pest was PC (4.28% injury on perimeter-row trees). One orchard in particular contributed to this high average. In this orchard, the level of fruit injury by PC was 12.6% in the perimeter, and 4.06% in the interior.

Tarnished plant bug (TPB) ranked second in terms of fruit injury. Comparatively more TPB injury in the interior of some blocks was recorded, compared to the perimeter. The average levels of injury caused by AMF, stink bugs, and internal Lepidoptera were comparatively low.

Parameter	Location	PC	Stink bug	Early-season Hemiptera	AMF	PC feeding or other damage	Rollers	OFM	CM	EAS	San Jose scale
Average	PERIMETER	4.28	0.17	1.76	0.48	0.11	0.09	0.06	0.20	0.01	0.11
Average	INTERIOR	1.27	0.45	3.52	1.18	0.11	0.06	0.03	0.26	0.31	0.00
MAX	PERIMETER	12.66	0.47	3.28	1.56	0.31	0.78	0.63	1.88	0.16	1.09
MAX	INTERIOR	4.06	1.88	8.13	3.38	0.63	0.31	0.31	2.50	0.63	0.00
MIN	PERIMETER	1.09	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MIN	INTERIOR	0.00	0.00	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Brown Marmorated Stink Bugs seem to be heading to overwintering sites. For the last 2 weeks (see figure below) fewer BMSB were captured by the pheromone-baited clear sticky cards deployed in trap crop areas at the UMass CSO compared to late August. Little or no feeding is expected to occur at this point in time.



Horticulture

Apple maturity report

J. Clements

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.

2020 Date	Variety	Drop	Diameter (inches)	Color (% red)	Firmness (lbs.)	Brix	Starch Index	DA Meter	Comments	Picture
9/28	Macoun	some	3.3	65	14	11.5	3-4	NA	Getting darker red color, getting close to peak	
9/28	Empire	none	2.9	75	18	11.7	4-6	NA	Ready to harvest for long-term storage, and fresh eating very soon	
9/28	Liberty	none	3	90	21	13.7	3-4	NA	Nice! Harvest ASAP	

9/28	Golden Glory (DS-65)	nil	3.4	5-20	18	15.1	4-6	1.04	Nice, improved Golden Delicious type but not available (ask me for budwood this winter)	
9/28	'Gibson' Golden Delicious	none	3.4	5	15	13.5	4-6	1.18	Kind of green, start harvest about October 1	
9/28	Ambrosia	none	3.2	80	19	13.8	4-6	0.18	Pick ASAP!	

9/28	Jonagold	nil	3.6	80	16	14.4	6-7	0.59	Harvest ASAP!	
9/28	Pazazz	none	3.4	85	14	13	4-6	0.54	Good to go for 1st pick, manage variety	
9/23	NY 1602 (Fire-cracker)	few	2.9	80	20	13.2	2-7	0.30	New release from Cornell, complex-spicy flavor, good for cider?	

Hawkeye's Corner

Liz Garofalo
Gypsy moth



A gypsy moth gallery, showing, more or less, the insect's life cycle. Dry weather is likely to create an increased number migrating into plantings in 2021.

Top left; flightless female gypsy moth lays her eggs not far from where she emerged from pupation. Top center; gypsy moth egg mass in the same fall it was laid. Top right; close up of gypsy moth egg mass.

Bottom left; overwintered egg mass. Note the lighter color of protective "hairs" surrounding eggs than fresh egg mass exhibits. Bottomleft interior; newly hatched gypsy moth larvae. Bottom right; early instar gypsy moth larvae feeding on apple flower parts.

The end of the 2015 growing season was the beginning of a drought that lasted through 2016. In 2017, we saw massive gypsy moth populations throughout a fair portion of the state, and many of us were caught unawares. Not this time! We have all watched this drought grow throughout this... *ahem* “special” year. As such, we will be prepared next spring!

Back in the 80's the Elkington lab here at UMass successfully introduced biocontrols to our landscape that have since mitigated the impact of gypsy moth larvae in both agriculture and landscapes. Most years, these controls (a virus and a fungus) keep populations in check as our traditionally wet spring weather is conducive to the organisms' growth. When drought hits, however, the organisms do not have the ability to thrive and subsequently reach population levels sufficient to knock gypsy moth larvae back enough to keep them out of our hair.

What you can do now; keep your eyes peeled for the egg masses. Every egg mass you destroy is one that won't bite you in the fruit bud next year. You can't get them all this way, but, you can at least get some gratification from eradicating a handful of the little buggers.

Moving forward; next spring, be prepared by having some Dipel (or other *Bacillus thuringiensis* material) on hand to manage early instar larvae when they balloon into fruit plantings. Follow along here for updates on larval emergence. I will keep a sentinel egg mass here at my remote location for monitoring and sharing updates via Healthy Fruit. And finally, watch your trees and other fruit crops next year for signs of migrating larvae! Once they start moving in, you will want to be prepared to take action.

Guest article

No guest article this week...

Facebook Me



Becky Baxter Clark

3h ·

...



Clarkdale Fruit Farms

3h ·

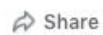
Crisp, sweet Empire apples just picked today!

2

1 Comment



Like



Comment



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Sandy Thomas

My absolute favorite eating apple! Crunch!!

Like · Reply · 2h



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>

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[Acimovic Lab at Hudson Valley](#)

[Peter Jentsch's Blog](#)

THIS will be the LAST Healthy Fruit in 2020. As always, thanks for your support and attention. We hope it has helped you produce a profitable crop in 2020. See you again in spring 2021. 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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