



Healthy Fruit, Vol. 28, No. 14, June 23, 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)	22-June
Base 43 BE (NEWA, since January 1)	1,216
Base 50 BE (NEWA, since January 1)	746

Upcoming pest events

Adapted from [Scaffolds Fruit Journal](#)

Coming events	Degree days (Base 43 BE)
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Apple maggot 1st catch	1200-1488
Black stem borer 1st flight subsides	866-1260
Cherry fruit fly 1st catch	755-1289
Lesser appleworm 1st flight subsides	1002-1538
Lesser peachtree borer flight peak	809-1734
Obliquebanded leafroller summer larvae hatch	1038-1460
Oriental fruit moth 2nd flight starts	1228-1489
Peachtree borer flight peak	1085-2014
Redbanded leafroller 2nd flight starts	1196-1547
San Jose scale 1st generation crawlers present	1033-1215
White apple leafhopper 1st gen adults peak	1162-1414

Announcements and Upcoming meetings

The UMass Plant Diagnostic Laboratory has 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 & Plant Nutrient Testing Lab will reopen on June 23, 2020, in order to analyze samples that were in process when the lab closed on March 16 and those that arrived after that date. Orders will be processed in the order they were received. Please be aware that we will not be accepting new samples for analysis until the backlog of orders is significantly reduced. Please **do not send soil or tissue samples** for analysis until we are able to accept new orders. For updates and information about available services, please visit: <https://ag.umass.edu/services/soil-plant-nutrient-testing-laboratory>.

The way I see it...

Jon Clements

All week long I think of things to say here, and then when I sit down to write it, I can't remember a darn thing! Let me see...

- Fire blight in apples, yup, seeing it, not widespread (yet), typically confined to a few (later blooming?) varieties, happened in late bloom with wetting events on May 15-16-17 and May 28-29?
- Potato leafhopper are here, hopperburn can't be far behind, watch young apple plantings closely and [treat](#), no level of infestation in young planting is acceptable as growth will be stunted
- If you are going to hedge fruiting wall apple plantings, now is the time to do it, summer solstice, longest day of the year. Yes, you can hedge dwarf apple plantings most anytime, but for increasing yield and promoting flower bud development for next year, now is the time to do it.
- Meanwhile, water is disappearing from your mature tall spindle apple orchard to the tune of 4,000 to 5,000 gallons of water per acre per day. Are you replacing it?
- Free money? Yup, the state will reimburse you for Covid-19 related expenses per their [Food Security Infrastructure Grant Program](#). Seems as though you ought to take advantage of it, the application and reimbursement process does not seem too onerous?
- Apple crop insurance listening session, this Thursday, June 25, 12 to 1:30 PM. Further information [here](#).

Pretty sure I forgot something important???

Insects

Jaime Piñero

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

[Period: 6.16 - 6.22](#)

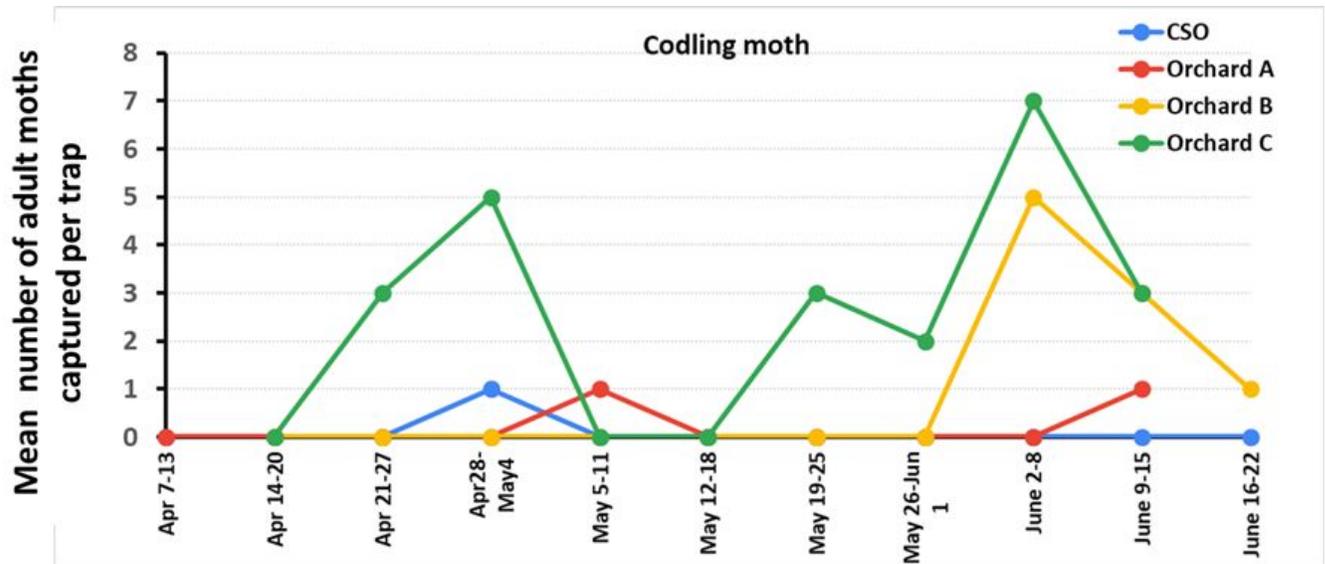
Insect	Average captures/trap	Notes
RBLR	0	Pheromone-baited trap
OFM	0	Pheromone-baited trap
CM	0	Pheromone-baited trap
Spotted tentiform leafminer	27	Pheromone-baited trap
Obliquebanded leafroller	0	Pheromone-baited trap

We are now preparing for the main window for control of the codling moth (CM) and obliquebanded leafroller (OBLR). Redbanded leafroller (RBLR) populations have subsided. The second flight of Oriental fruit moth (OFM) is expected to start soon. Please see below thresholds, spray recommendations, and charts showing seasonal trap captures for OFM, CM, and OBLR.

Effective control of tortricid moths requires regular pheromone-based monitoring.

For recommended insecticides against these pests during the summer, see table at the end of this article. For additional information, consult the [New England Tree Fruit Management Guide](#).

CODLING MOTH (CM). The graph below shows that there has been some variability in 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 22nd whereas in another location, the BIOFIX took place on May 4th. Yet, in a third orchard, the BIOFIX was on June 8th. This highlights the need to monitor for CM and other pests at each orchard.



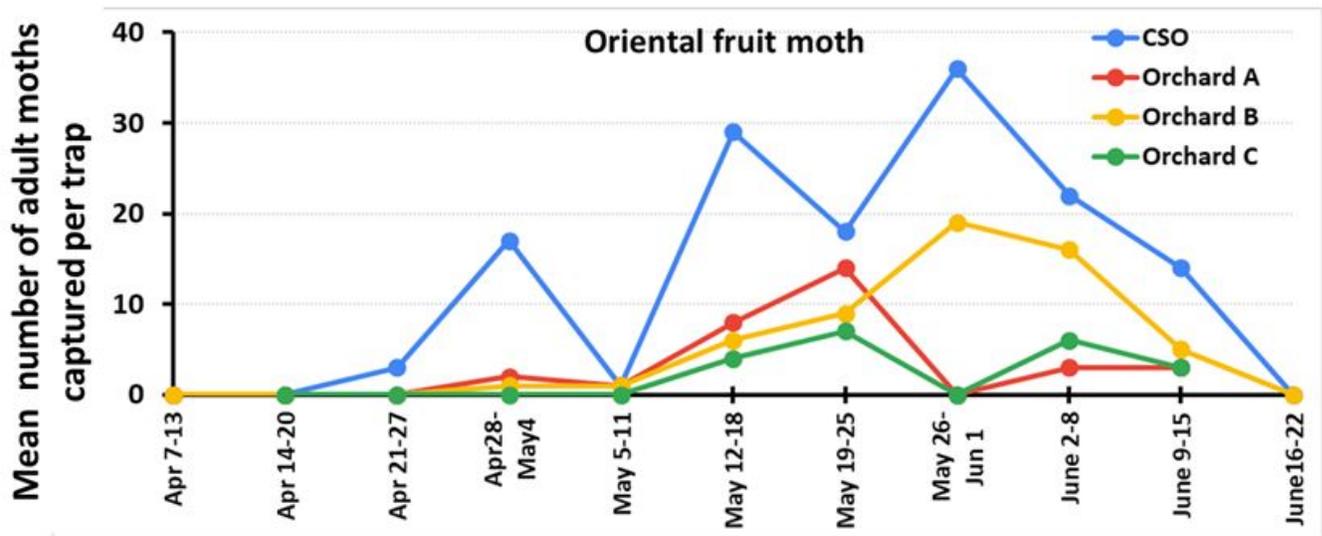
Spraying using trap thresholds. If > 5 CM adults are caught per trap per week using standard lures, there can be problems in fruit from future generations. High trap counts are a warning to prepare for an application in 5-7 days. If trap counts continue to exceed the threshold throughout the season, maintain insecticide coverage on a 2-week interval.

Spraying decisions using BIOFIX data. Sprays against the summer generations of CM LARVAE should be timed to start approximately 250-360 DD (base 50°F) after 1st adult catch FOR EACH GENERATION.

When targeting the eggs, then the developmental model predicts the appropriate treatments to occur approximately 150 DD (base 50°F) after 1st adult catch FOR EACH GENERATION.

BIOPESTICIDE OPTIONS: CYD-X® (codling moth granulovirus). The label calls for at least two applications of CYD-X® per codling moth larval generation. Madex HP (codling moth granulovirus). Both products need to be sprayed shortly after larvae hatch from the eggs and before the larvae feed their way into the fruit.

ORIENTAL FRUIT MOTH (OFM). As shown in the chart below, OFM captures in pheromone traps have subsided. This means that the second flight will start soon.



Spraying using trap thresholds. Usually, if first-generation OFM control was successful, then second-generation populations can be expected to be low.

Very low density OFM populations: If traps capture 0-3 moths per trap per week between 800 to 1,600 DD after biofix then an insecticide application is not justified.

Low-density OFM populations: If 3-7 moths are captured per trap per week between 800 and 1,500 DD (after biofix) will trigger a single insecticide application at 1,400 DD.

Moderate- to high-density OFM populations: Orchard blocks with damaged fruit and/or > 10 OFM/trap/week may need two insecticide applications 14 days apart starting at 1,100 DD.

Spraying decisions using BIOFIX data. Sprays against the summer generations of OFM **LARVAE** should be timed to start approximately at the 10% hatching point which coincides with 175-200 DD (base 45°F) after the first sustained adult moth catches of the 2nd and 3rd broods. We recommend follow-up applications at 10-14 day intervals.

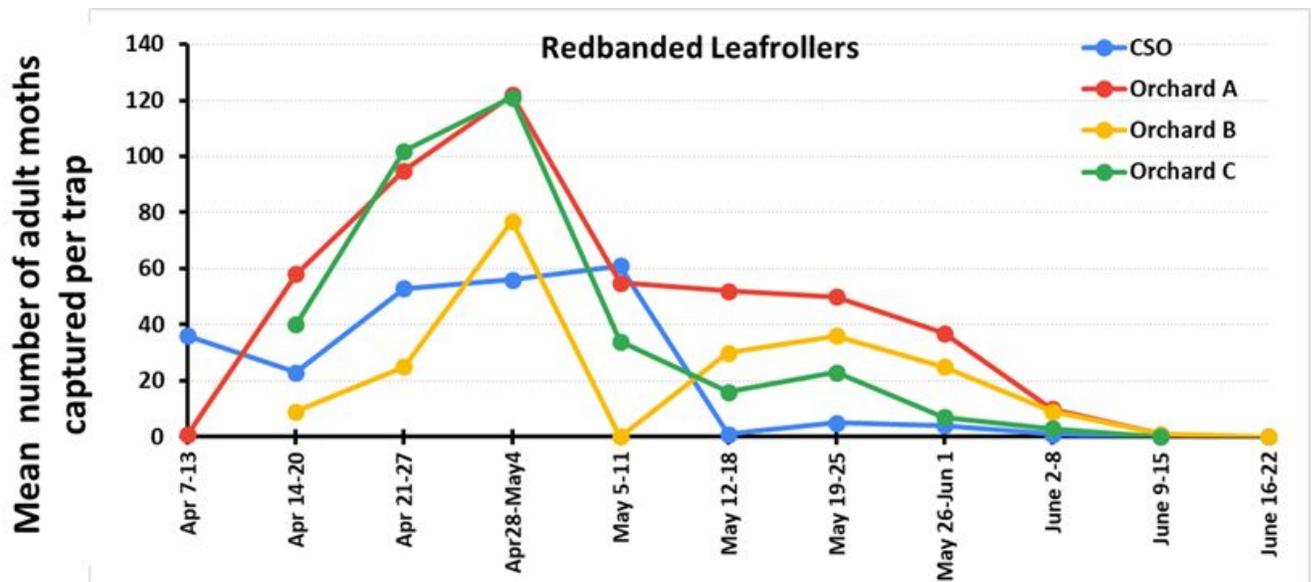
BIOPESTICIDE OPTIONS: Madex HP (codling moth granulovirus) is also effective against OFM. Target small larvae early in their life cycle.

OBLIQUEBANDED LEAFROLLERS (OBLR). OBLR captures have been erratic so far. A few adult OBLR have been captured in two out of five locations, and BIOFIX has been set (June 22nd) in only one of those five locations.

Spraying using action thresholds. For the summer brood larvae, suggested action thresholds are 3% infested terminals.

Spraying decisions using BIOFIX data. For summer generation, 2-3 sprays, 10-14 days apart targeting LARVAE are recommended, starting 360 DD (base 43°F) after the first adult trap catch.

REDBANDED LEAFROLLERS. There is general consensus that, in commercial apple orchards, RBLR larvae are controlled primarily by the petal fall spray for plum curculio and subsequent sprays against PC and other pests.



Potato Leafhopper (PLH). PLH has been reported in some orchards. Monitor the population by examining leaf undersides in the outer canopy, especially on younger trees. Tentative threshold is one PLH per leaf. For additional information, see our newly published [Fact Sheet](#).

Recommended insecticides against internal Lepidoptera (see efficacy ratings against Potato Leafhopper)

APPLE – SUMMER

HIGH (H) AND MODERATE (M) EFFECTIVENESS

Insecticide	a.i.	IRAC	CM	OFM	OBLR	PLH
Intrepid 2F (IGR)	Methoxyfenozide	18	M	M	H	
Dipel DF (OMRI)	B.t.	11A	M	M	H	
Assail 30SG	Acetamiprid	4A	H	H		H
Delegate 25WG	Spinetoram	7	H	H	H	
ALTACOR 35WDG	Chlorantraniliprole	28	H	H	H	
Avaunt 30WDG	Indoxacarb	22	M	M		H
Exirel	Cyantraniprole	28	H	H	H	H
Imidan 70W	Phosmet	1B	H	H		
Voliam Flexi WDG	Thiamethoxam + chlorantraniliprole	28 + 4A	H	H	H	H
Belt 4SC	Flubendiamide	28	H	H	H	
Actara 25WDG	Thiamethoxam	4A				H
Entrust SC (OMRI)	Spinosad	5	M	M		
Admire PRO 4.6SC	Imidacloprid	4A			H	H
Verdepryn 100SL	Cyclaniliprole	28	?	?	?	?

Spotted Wing Drosophila (SWD) update. Sustained SWD captures have been recorded at all four locations where monitoring traps have been set up. The table below shows the average number of SWD (combining males and females) captured per trap. The best performers this week are Trece selective lure, diluted Grape juice, and Alpha Scents lure. Captures of non-target insects was greatest in the Trece selective lure and lowest in the diluted grape juice-baited traps.

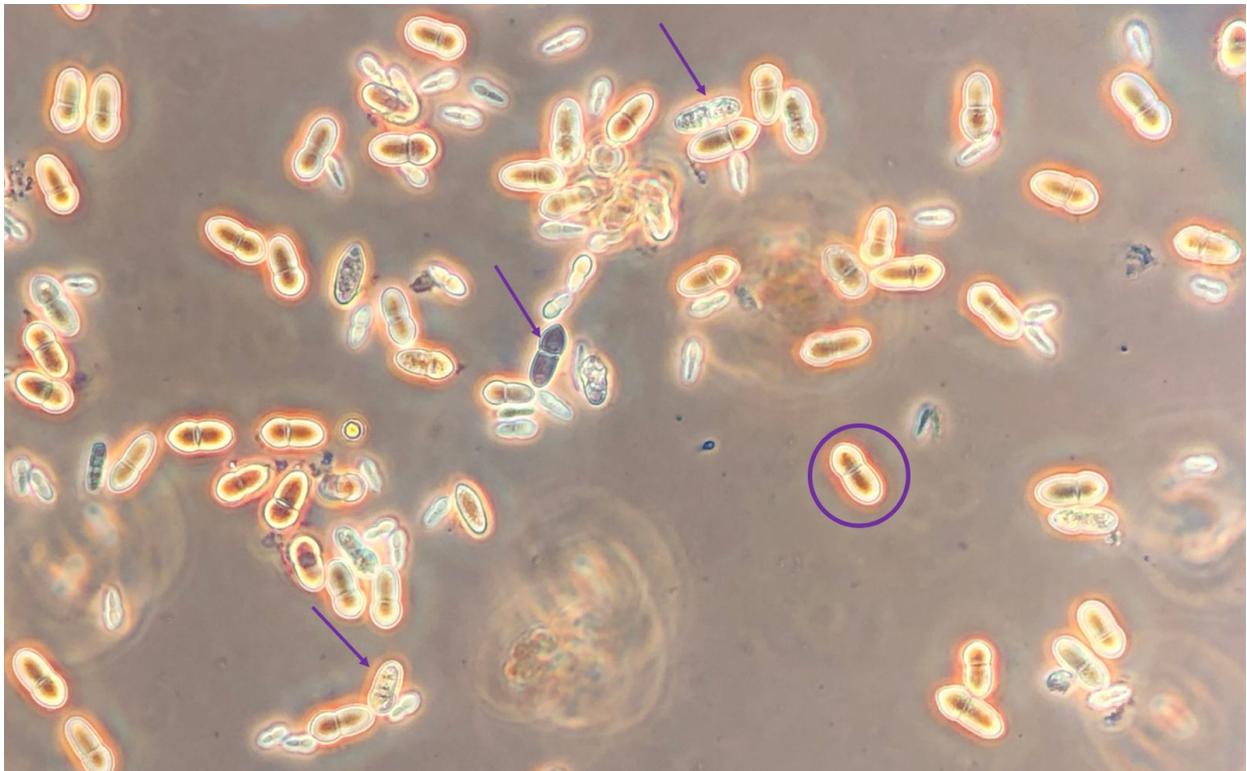
AVERAGE/TRAP (6.17)	SWD (males+females)	non-targets
Grape juice	4.8	7
Trece broad spectrum	2.0	9
Trece selective	8.3	182
Scentry	0.5	11
AlphaScents	4.3	58

dipel

Diseases

Liz Garofalo and Dan Cooley

Apple scab



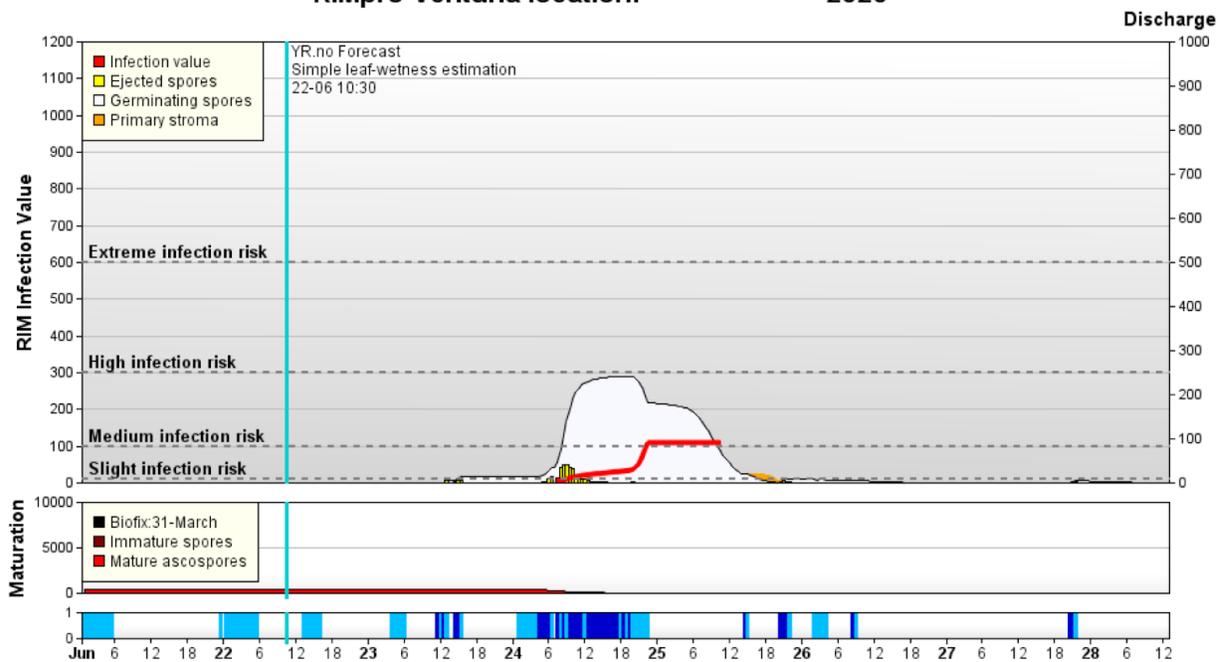
Viable ascospores (circled in purple) are still observed in home lab assays. An increasing number of what appear to be dead or dying ascospores (purple arrows) are also apparent in lab observations.

Ascospore numbers continue to slowly decrease. Slowly. With parts of the state seeing a 60% chance of rain for Wednesday, we may get lucky and see a proper end to this interminable primary apple scab season. When I say parts, I mean Franklin, Hampshire, Hampden,

Middlesex and even Essex counties. The Berkshires and most of the rest of the state have a lower percent chance of rain.

	Ascospore Observation Method and Spore Count		
Date	Petri Plate Assay	Funnel Trap	Total Count
3/31/20	0	0	0
4/7/2020	0	21	21
4/14/2020	1	0	1
4/20/20	162	117	279
4/28/20	95	44	139
5/5/20	89	1421	1510
5/12/20	259	5275	5534
5/18/20	205	Too many to count*	205*
5/26/20	162	1967	2129
6/1/20	1060	6294	7354
6/8/20	259	4222	4481
6/15/20	144	3571	3715
6/22/20	118	2894	3012

RIMpro-Venturia location: - 2020



For the station closest to my location where the ascospore leaf bed is located, RIMpro does show another infection event. According to RIMpro, this event is estimated to just exceed the threshold between “slight” and “medium” risk.

Horticulture

Jon Clements

Calcium should be going out in cover and/or dedicated sprays to help prevent bitter pit in Honeycrisp (and other varieties destined for long-term storage). It might be a lost cause with light crops this year, but can't hurt. Good coverage is necessary as the spray needs to hit the fruit. 75 to 100 gpa as per below.

Applications should begin three weeks after petal fall and continue at two-week intervals until harvest.

Calcium source	Pounds per 100 gallons dilute	
	Until mid-July	After mid-July
Actual calcium	0.6 to 0.8	0.8 to 1.0
Calcium chloride (29% calcium)*	2.0 to 2.7	2.7 to 3.3

Small Fruit Update

[Sonia Schloemann](#)

Crop Conditions: Dry, dry, dry...irrigate, irrigate, irrigate... and, SWD numbers are starting to rise. This means be ready for management action. See the [updated SWD Spray Material Chart](#) for currently recommended materials, rates, phi and other relevant information.

Strawberries: Harvest continues with farms reporting a good turnout of customers. Some farms are reporting small berry size, but quality is good except where pickers haven't been able to keep up with ripe fruit. Some growers are finding [sunscald](#) to be a problem, especially in cultivars with sparse canopies and/or on black plastic. Also, the dry conditions have brought out a lot of bird feeding on the fruit seeking hydration as well as nourishment. This happens early and late in the day when customer or picking traffic will keep birds at bay.

Current and forecasted humid conditions can lead to increased [powdery mildew](#) infection and spread at this time. Watch for curling leaves and/or white patchy lesions on the underside and treat when necessary. New plantings are growing well where irrigation is being applied. Look for evidence of [potato leafhopper](#) especially in new plantings and treat where necessary.

Raspberries: Early varieties are beginning to ripen. Berries seem small but adequate irrigation may help improve size. [Spotted Wing Drosophila](#) is the big concern as usual at this time of year. The season is just beginning with sustained captures having started. See our [SWD page](#) for more relevant information on this pest. Also, scout fruiting fields for [Tarnished Plant Bug](#) and [two-spotted spider mites](#) and treat where necessary. Primocanes varieties are growing well, especially where irrigated. Look for evidence of [potato leafhopper](#) and treat where necessary.

Blueberries: Fruit is sizing and starting to color. Fruitset is pretty heavy so irrigation, again, is going to be very important to hold, size and ripen the fruit. Bird netting is going on as well as SWD netting for those using exclusion as a way of managing this pest. Fields where [Cranberry Fruitworm](#) is a problem, there is still time to get a spray application on to control larvae before they enter the fruit (see photo below). Another important pest at this time of year is [Blueberry Maggot Fly](#). Traps are an effective way to know whether or not this pest is present in your planting. Set traps out now. See trapping and management recommendations [here](#).

See the current [New England Small Fruit Management Guide](#) for recommended materials and rates for managing pests mentioned above.



Figure 1) Left - Cranberry Fruitworm damage - see blue fruit w/ frass (**photo:** S. Schloemann, UMass Extension; **Right** - Blueberry Maggot Trap orientation w/ ammonium acetate scent canister (**photo:** R. Isaacs, MSU)

Hawkeye's corner (notes from the field)

Liz Garofalo

As yet **unidentified stink bug eggs:**



I'm rearing these out to confirm just who laid these little pest bombs...

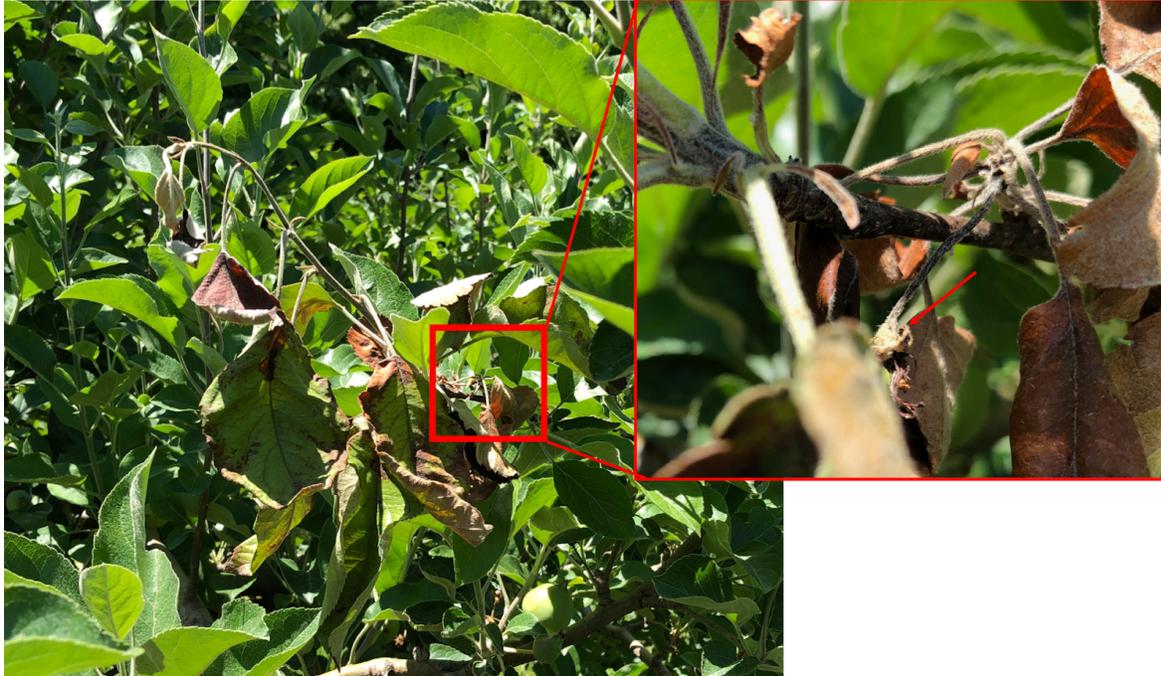
In more readily identified news



Obliquebanded leafroller showed up in traps for the first time last week (photo taken 6-18-20).



Not one to be left behind, potato leafhopper has also made an appearance (also reported by Jon and Sonia). One easy way to tell **potato leafhopper** (PLH) from white apple leafhopper is PLH, adults and nymphs, jogs sideways when disturbed, rather quickly. Larger trees will incur PLH damage, and generally grow out of it. Smaller trees will need to be treated for this pest.



I'm sure many of you are seeing this now- **fireblight** strikes are turning up, especially in varieties that have later or rat tail bloom. Like this Northern Spy strike that came from a late bloom (blighted blossom shown in enlarged inset with a red arrow pointing to what is left of the blossom cluster).

Finally, though I do not have any photos, reports of **BMSB** trap captures have come in from known hotspots where traps have already been placed out for the season. These captures are NOT wide spread. If stink bug damage has occurred in your orchard in the past, it is important to scout the canopies to determine presence of stink bug and to verify which species is present.

Guest article

No Guest article this week, Healthy Fruit has been getting way too long lately...

Facebook Me

No Facebook Me this week...

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 June 30, 2020. 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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