



Healthy Fruit, Vol. 28, No. 15, June 30, 2020

Prepared by the University of Massachusetts Amherst Extension Fruit Team

Contents

[Current degree day accumulations](#)

[Upcoming pest events](#)

[Upcoming meetings](#)

[The way I see it](#)

[Insects](#)

[Diseases](#)

[Horticulture](#)

[Small Fruit Update](#)

[Guest article](#)

[Facebook Me](#)

[Useful links](#)

[Thank you sponsors...](#)

Current degree day accumulations

| | |
|---|---------|
| UMass Cold Spring Orchard, Belchertown, MA (Since January 1) | 29-June |
| Base 43 BE (NEWA, since January 1) | 1,419 |
| Base 50 BE (NEWA, since January 1) | 901 |

Upcoming pest events

Adapted from [Scaffolds Fruit Journal](#)

| Coming events | Degree days (Base 43 BE) |
|--|--------------------------|
| Apple maggot fly 1st catch | 1222-1762 |
| Codling moth 1st flight subsides | 1293-1828 |
| Dogwood borer flight peak | 1415-1487 |
| Lesser appleworm 1st flight subsides | 1002-1538 |
| Lesser appleworm 2nd flight starts | 1429-2108 |
| 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 |
| 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 & Plant Nutrient Testing Lab reopened on June 23, 2020, and will process backlogged samples before accepting new ones. 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 UMass Fruit Team *will* be holding a (slightly different than usual) summer meeting this year!

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. We will share more programming details from our virtual summer meeting as they become available. To join us please use the link below to pre-register:

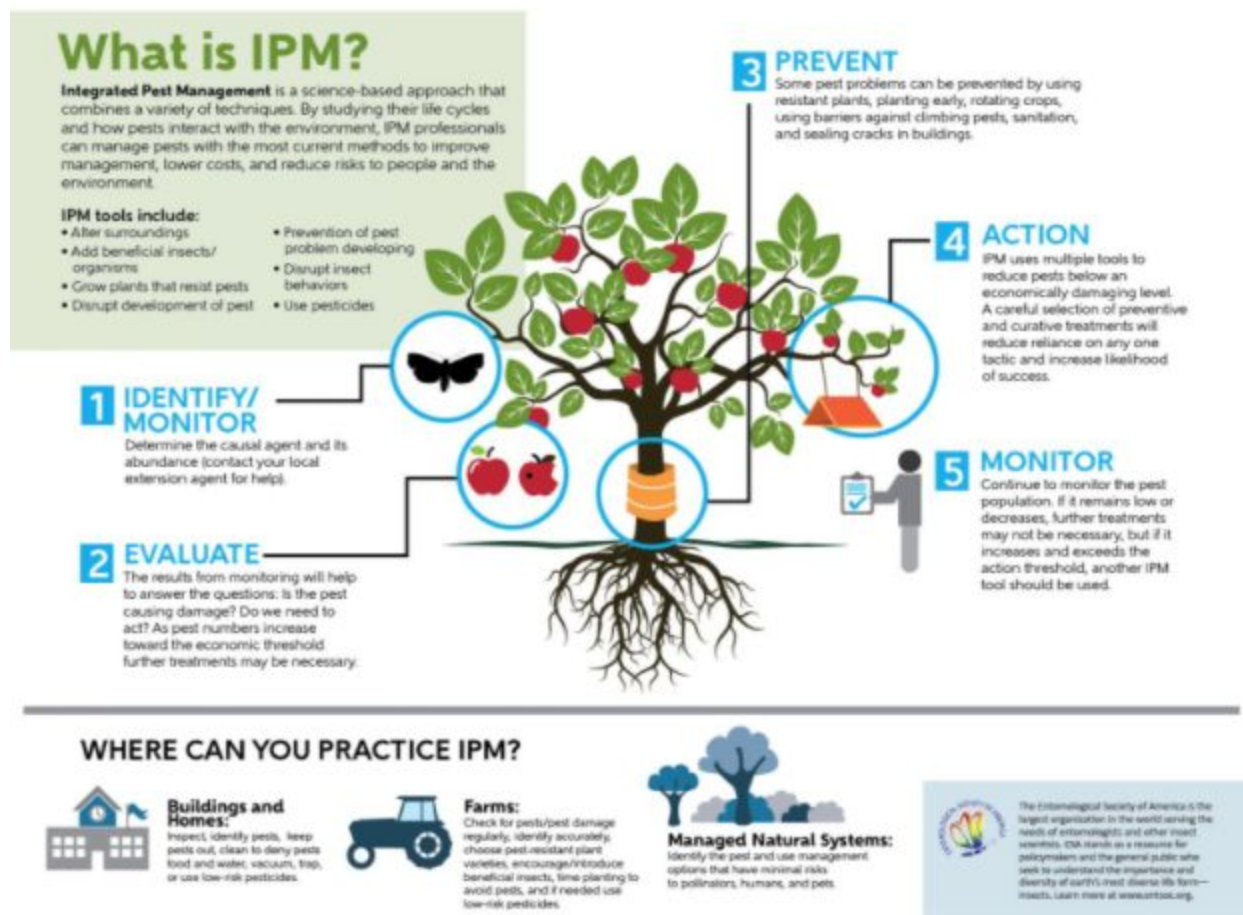
When: Jul 23, 2020 05:30 PM Eastern Time (US and Canada)

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, take a look now for an early release summer tour video!) 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

Got to say after this turn in the weather I am ready to go back to hot and dry. Well maybe not too hot. We've had deluges, washouts, and yes, the H word. At the UMass Orchard there has been just under 2 inches of rain since Saturday. Interestingly, amongst the 10 rain gauges we have, the accumulation range was from 1.50 to 1.99 inches. True or not? Possible. I sometimes wonder when there is a deluge if these tipping bucket rain gauges can "keep up" with the rainfall rate?

I have had a couple reports of hail in orchards. And there is fire blight, so an immediate streptomycin application to the orchard is advised after any hail or strong thunderstorm/trauma event. In addition, managing post-infection fire blight should include use of growth control regulators (Apogee, Kudos), plant defense inducers (Regalia, Lifeguard, Actigard), and judicious use of low-risk of russett coppers (Cueva, BluLogic). If you have fire blight, I'd like to hear about it as Cornell is soliciting samples for testing for streptomycin resistance and fire blight strain. I will come collect the suspect sample. It's going to be a long summer if this up and down weather pattern keeps up. Plus it's 2 degrees hotter than it was 50 years ago. Trust me. :-)

Cherry harvest has started. Up until now quality has been exceptional, but expect cracking to set in with the wet weather unless your cherries are covered. Guess what? If you grow cherries, blueberries, peaches, and apples you are in it for the long haul now. Good luck.

And finally, predicting the last day for **McIntosh harvest** for fruit destined for long-term CA storage at the UMass Orchard in Belchertown, per the Central New York formula as in [Predicting Harvest Date Windows for Apples](#) is **Thursday, September 24, 2020**.

What about Redhaven peaches? Using the Michigan peach harvest date prediction formula $D = -0.0386x + 234.9$, $r^2 = 0.752$, where x is the cumulative degree-days (DD) base 50 degrees Fahrenheit from Jan. 1 through June 3 and D = the estimated harvest day of year (e.g., Jan. 1 = 1 and Dec. 31 = 365 in a non-leap year), for the UMass Orchard in Belchertown the main **Redhaven peach** harvest season will be around **Monday, August 10, 2020**.



Rainier cherry on 29-June, 2020



Benton cherry on 29-June, 2020

Insects

Jaime Piñero

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

Period: 6.23 - 6.29

| 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 | 57 | Pheromone-baited trap |
| Obliquebanded leafroller | 0 | Pheromone-baited trap |
| Spotted Wing Drosophila | 1.7 | Diluted Concord grape juice-baited trap |
| Apple Maggot Fly | 0.25 | Unbaited sticky-coated red spheres |

OFM and CM. So far, there are no signs of the second flight of OFM. CM numbers continue to be low. Low CM pressure is indicated by pheromone trap captures that are below 5 male moths per trap. No insecticides are needed in this situation.

OBLR. If you need to spray against OBLR, then Exirel (Cyantraniliprole), Verdepryn 100SL (Cyclaniliprole) (IRAC Class 28), Delegate (spinetoram) (IRAC Class 5) and the OMRI-listed biopesticide Entrust (spinosad) (IRAC Class 5) are recommended materials.

Group 28 products paralyze insect muscle. Verdepryn, Exirel and Altacor have the same mode of action and should NOT be used together in rotation to delay insecticide resistance. Rather insecticides from other IRAC groups (not IRAC group 28) should be used in rotation with these products.

Rosy apple aphid (RAA). Increased populations of RAA have been observed at the UMass CSO. Serious damage occurs when the aphid's saliva translocates from the leaves to fruit, causing apples to remain small, deformed (pigmy fruit) and unmarketable. Toxic saliva reduces

growth of roots and other woody tissue. Research shows this has an important impact on young trees as they develop a mature bearing structure. Diamide products are recommended for aphid control.

If more than one RAA colony per tree is present at this time of the season, an insecticide treatment is recommended. At CSO, we are close to reaching this threshold.



AMF. The first adults of the season were captured by unbaited sticky traps in Belchertown. If you haven't done so, set out traps at the rate of 1 trap per 3-5 acres, but not less than 3 traps per block. Place traps near the block periphery, 1 or 2 rows in from outermost row. Remove any leaves or fruit within 10 inches from the traps. Recommended treatment threshold is an average of 2 AMF per unbaited trap or 5 AMF per trap when synthetic lures are used.



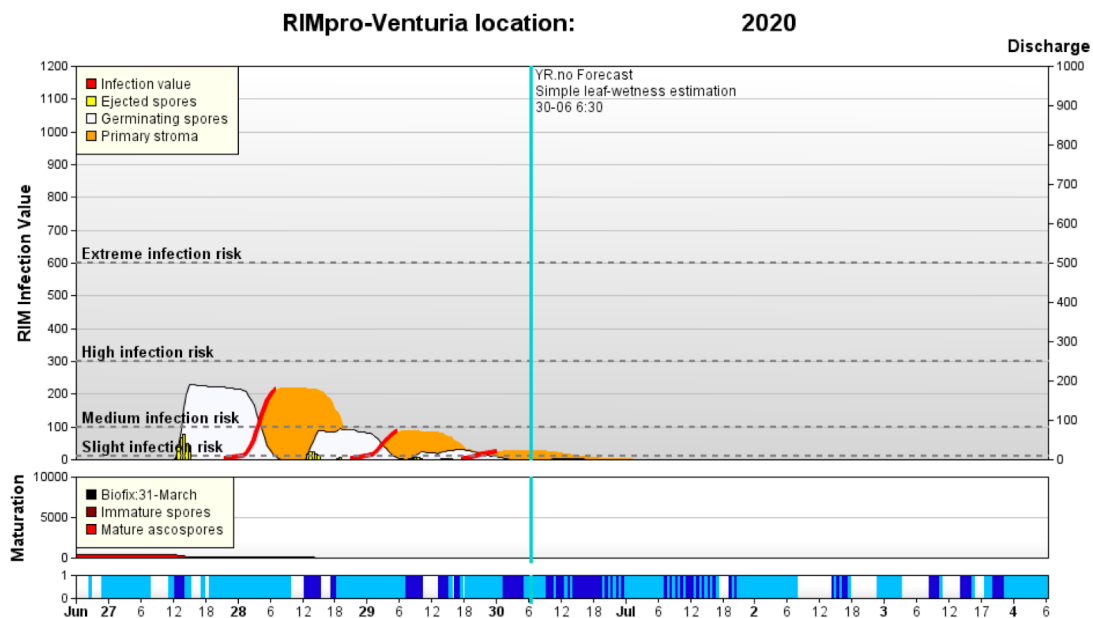
Diseases

Liz Garofalo and Dan Cooley

Apple scab I may still have found a few spores floating around, however, with all the glorious rain we have gotten over the last few days, I think we can finally lay this beast of a primary scab season to rest.

| | Ascospore Observation Method and Spore Count | | |
|----------------|--|------------|------------|
| 6/1/20 | 1060 | 6294 | 7354 |
| 6/8/20 | 259 | 4222 | 4481 |
| 6/15/20 | 144 | 3571 | 3715 |
| 6/22/20 | 118 | 2894 | 3012 |
| 6/29/20 | 39 | 298 | 337 |

This will be the last week you will see scab spore counts in Healthy Fruit for 2020 (yeah I did a happy dance after I typed that, so what?).



And just to provide a model's perspective, RIMpro has also estimated an end to the primary apple scab season as well (that vertical blue line is today's date). The final spore release was estimated to have occurred on June 29 at the site in Deerfield which is closest to where I have my scabby leaf bed maintained this year. Not a bad parallel between the two, in terms of an official end of primary scab.

And just in time for **summer rots (and spots)**!

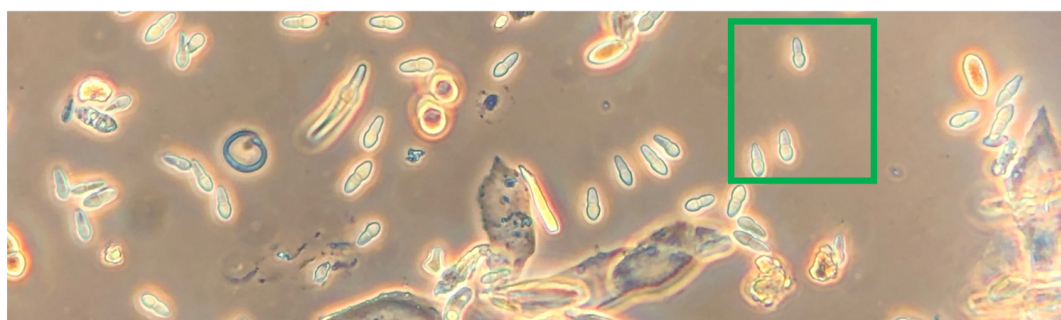
The table below is a brief snapshot of materials that are effective against white rot(W), black rot(B), bitter rot and sooty blotch/flyspeck(SBFS). For a more extensive list, take a look in the [New England Tree Fruit Management Guide](#).

| FRAC* | Trade name(s) | Diseases Managed | Efficacy |
|-------|--------------------------------------|---|---|
| 1 | Topsin | SBFS, B&W & bitter rot, | High |
| M4 | Captan**(multiple) | SBFS ¹ , bitter rot ¹ , B&W rot ² | Moderate, ¹ High ² |
| 3 | Indar | SBFS, B&W rot | High |
| 3&9 | Inspire Super | SBFS | High |
| 7&11 | Luna Sensation, Merivon, Pristine | SBFS, B&W & bitter rot | High |

*See label for important resistance management information!

**Do not apply within ten days of oil or any material containing oil (ex. Exirel)

Bitter rot spore like temperatures at 79-80°F for optimal germination(about 5 hours at this temp) and rapid lesion expansion can be seen at 86°F. While temperatures have been below “optimum” a few infections may have still had enough time with all this generally warm wet weather to get established. At lower temperatures, spore production is slower, so, while it has felt pretty swampy, the relatively cooler (mid-70s and lower) weather we have seen over the last week or so will help to reduce the speed with which any established bitter rot infections may spread. This will give you the chance to stay on top of bitter rot as we move into more seasonal temperatures beginning Thursday of this week and on. You should be watching blocks where infection has occurred in the past as conditions will be ripe for rapid lesion development. These spots will be your first indication of bitter rot infections that may have already slipped through.



An increasing number of Marssonina conidia (indicated in green box) are being seen in home lab spore assays.

Now that we have finally gotten some rain, any Marssonina infections that may have initiated previously will start to express symptoms. Low spray, organic and abandoned trees will be the first to show the symptoms. Keep an eye on these as they can provide additional inoculum for your other trees!

Horticulture

Jon Clements

Return bloom sprays? Check. Although maybe not as important this year because of the lightish apple crop, it's best to be in the habit to just do it. Easy button? 2 to 3 oz of NAA per acre for a total of 3-4 applications beginning mid-late June through July. Done. Want more detail? [Enhancing Return Bloom on Apple with Plant Growth Regulators](#).

Calcium sprays? Check. It has come to my attention that Reflections (Miller Chemical) is being used as a source of calcium. Seems like a good choice, it is 30% actual calcium, comparable to calcium chloride. Follow the [label](#) directions. Want more detail?: [Foliar Calcium Sprays for Apples](#). In addition, Reflections can be used for heat stress reduction according to the label I assume that includes sunburn, a bit more on that next.

I watched a YouTube recording on the [MSUE on the Ridge channel](#) where Phil Schwallier laid out a quick review of sunburn protection of apples. If the hot and sunny weather returns it is a concern here. Highlights of his thoughts:

Sunburn impacts mostly yellow or green apple varieties (including Honeycrisp), and consider these factors:

- Larger fruit >1.5 inches are more susceptible to sunburn
- Intense UV sunlight
- Air temperature over 90 F., light wind, low relative humidity
- Growing apples shift position
- Summer pruning

Sunburn types include:

- Sudden exposure to sunlight (photo oxidative)
- Sunburn browning (Fruit Surface Temperature 114 to 120 F. with sunlight)
- Sunburn necrosis (FST temperature > 126 F.)

Sunburn may be increased by use of:

- Foil/reflective covers
- Summer pruning
- Hedging

Products that may help ameliorate sunburn damage:

- Diffusion (Wilbur-Ellis)
- Purshade (NovaSource)
- Reflections
- Surround

Small Fruit Update

[Sonia Schloemann](#)

Crop Conditions: The drought has been the main issue for many growers in recent weeks. Then we experienced some significant, though spotty rainfall over the last 3-4 days. Some areas had excessive downpours accompanied by high winds and some hail. This may have resulted in some fruit or plant damage but the extent is unclear at this writing. Where fruit damage occurred, culling out and disposing of that damaged fruit outside the field would be recommended to avoid rot and potential SWD infestation. See more about SWD below. For disease protection following hail, see [this article](#) from MSU for some good guidance. Some fruit may benefit from a protective cover with a broad spectrum fungicide.

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



Trap monitoring is showing sustained SWD captures (at low numbers), at this writing. This marks the start of SWD management season. 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 last week's [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



The “It’s a mystery to me” stink bugs have emerged. Pictured above is a first instar nymph. The ultimate identity of this little critter remains a mystery to me!

Guest article

No Guest article this week, but I encourage you to take a look at [HEAT AND LIGHT STRESS/SUNBURN](#) by Larry Schrader at Washington State University.

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 July 7, 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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