



Healthy Fruit, Vol. 28, No. 2, March 31, 2020

Prepared by the University of Massachusetts Amherst Fruit Team

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Current degree day accumulations

UMass Cold Spring Orchard, Belchertown, MA (Since January 1)	30-March
Base 43 BE (NEWA, since January 1)	127
Base 50 BE (NEWA, since January 1)	46

Note that apple green tip should occur 99-144 DD (Base 43 BE), although obviously there is a range. At the UMass Orchard in Belchertown, Macs are at green tip on 30-March. According to the NEWA Degree Days prediction, by April 6 we will have reached 151 DD's Base 43 BE. Half-inch green bud stage should occur 150-221 DD's Base 43 BE.

Current bud stages

Current bud stages. 30-March, 2020, UMass Cold Spring Orchard, Belchertown, MA

				
McIntosh apple Green tip	Honeycrisp apple Silver tip +	Crispie pear Swollen bud	Redhaven peach Swollen bud	Rainier cherry Early swollen bud

More 2020 bud stages [here...](#)

Upcoming pest events

Coming events	Degree days (Base 43 BE)
Green apple aphids present	111-265
Green fruitworm peak flight	91-226
Pear psylla 1st oviposition	40-126
Redbanded leafroller 1st catch	111-176
McIntosh green tip	99-144

Upcoming meetings

UMaine Pre-season Tree Fruit Meeting Webinars, Wednesday, April 1, 2020. 12 to 2 PM. To join: <https://maine.zoom.us/j/132684553> Two pesticide recertification credits available for all New England states. [For more information...](#)

The way I see it...

Jon Clements

- This MAY be your last Healthy Fruit (HF), unless you go to the UMass Extension Bookstore (<http://umassextensionbookstore.com>) and purchase a new [2020 subscription to HF](#) (\$65, e-mail delivery only) in the next week or two. Alternately, you can send me (Jon Clements, 393 Sabin St., Belchertown, MA 01007) a check for \$65 (tips accepted) made out to 'University of Massachusetts.' Make sure you note it is for Healthy Fruit subscription, and includes your e-mail address. You can also use [this mail-in form](#) to order Healthy Fruit and other UMass fruit publications. You can ignore this of course if you have already sent in your payment. And we very much appreciate your subscription, thanks for supporting the UMass Fruit Team..
- Might seem like an ongoing (and extended apparently) bad dream. Who'd have thought strawberry season might be affected? Fortunately, an extra early season is becoming more unlikely as the weather has cooled off considerably. But life goes on. Here at UMass Extension our activity is still restricted to work at home. But we are always on-call to answer questions and do remote diagnostics. Voice, text or video chat. (Whatever flavor you prefer.) We (Liz and Jon) are also active on Facebook and Twitter to varying degrees, and you may or may not know there is a [Vegetable & Fruit IPM Team](#) on Facebook?
- I/we have tried to prepare you to help yourselves, largely by directing you to online webinars/trainings/recordings, and I am going to try to keep a list of them updated [here](#). And don't forget to use the [NEWA](#) disease and insect prediction models, there are currently [27 weather stations in MA](#) online there.
- We are contemplating doing a virtual "twilight" meeting at the noon hour on Wednesday, April 8 via the Zoom app. We had a discussion about time, lunch? 5:30? I'd like to try the lunch hour, you do come in and eat lunch, right? But if anyone has a strong opinion about the time, let me know. We are investigating getting pesticide credit for this, but I am not holding my breath on that. You can get pesticide credits if you attend any one of the [Maine Tree Fruit Webinars](#), including the one I am doing on April 1 at noon.
- Finally, a sad note, Tony Rossi, former manager of the UMass Orchard in Belchertown passed away earlier this month ([Obituary](#)). Our condolences to his family and friends.

New England Tree Fruit Management Guide available online

- The New England Extension tree fruit specialists -- which include myself, Dan Cooley, Jaime Pinero, and Elizabeth Garofalo at UMass. Mary Concklin at UConn, Heather Faubert at URI, Terry Bradshaw at UVM, George Hamilton and Anna Wallingford at UNH, and Glen Koehler and Renae Moran at UMaine -- have officially launched, and (minimally) updated for 2020 -- an online edition of the New England Tree Fruit Management Guide. Note that it's easy to print any of the sections, if you want to have old-school reference, for example, to hang on your spray shed wall. Also, it is quite mobile-friendly so make a home screen shortcut to here: <http://netreefruit.org>. The print version has been discontinued, although you may check with your local Extension person to see if they have any print copies left. (Massachusetts does not.)

Insects

Jaime Pinero

European red mite and San Jose scale

European red mite.

Overwintering eggs are laid in groups on roughened bark, in crevices and cracks, and around bud scales on twigs and branches. Eggs begin to hatch at pre-pink bud stages and continue throughout bloom. Young mites move to newly opened leaves where they feed, mature, and reproduce.



Masses of European red mite eggs may be laid together. Eggs are slightly flattened, red, and have a small stalk. The stalk is approximately the length of the diameter of the egg, arising from the top, and can be seen with a hand lens.

Control. Horticultural oil is recommended to control overwintered eggs. Rate: 2 gal/100 at the green tip through half-inch green stage, or 1 gal/100 at tight cluster.

Phytotoxicity is more likely to occur if horticultural oils are applied in sprays concentrated more than 3x. Use 2 gal. oil per 100 gal. for application between green tip and tight cluster. Do not use within 24 to 48 hours before freezing temperatures, or if temperature is below 35F following a freeze.

San Jose scale.

Early-season populations can be monitored by either checking adult male emergence or crawler emergence. For adult males, pheromone traps should be placed in trees with known active populations (if any) at the pink stage. Crawlers can be monitored by wrapping black electrical

tape that has been coated with petroleum jelly around infested branches. The tape should be inspected daily with a hand lens until active crawlers are found.



San Jose scales are disk-shaped (females) or oval (males) and are composed of concentric rings of gray-brown wax radiating from a tiny white knob.





White prunicola scale can also occur on apple. The picture shows an infestation on a cherry tree.

The decision to treat is usually based on finding infested fruit at the previous year's harvest. At harvest, examine 50 fruits per tree on 2 trees per acre and treat on the following year if you find more than 0.1% fruit with San Jose scale injury.

Control. Established, heavy San Jose scale populations are difficult to manage and may require dormant or delayed dormant oil application and insecticide application targeting crawlers.

For best results, apply horticultural (3 gallons per 100 gallons of water for heavy infestation; otherwise use 2 gallons per 100 gallons of water) around half-inch green. Pre-bloom sprays are more effective if applied dilute, at higher volume. For severe infestations, combine oil with Esteem 35WP or Lorsban.

Lorsban Advanced can be applied as a dormant or delayed dormant spray. For best results, use Lorsban Advanced in combination with horticultural oil to control additional pests, such as European red mites. Remember, cold or dry conditions may cause Lorsban Advanced plus oil sprays to infuse into trees, resulting in bud damage or bud drop.

Diseases

Liz Garofalo and Dan Cooley

We are still doing ascospore observations for the 2020 season! We have had to adjust fire a little but, the most important thing you want to know right now is that **no apple scab ascospores have been observed** in either the funnel trap or Petri plate assay.

When I say adjust fire, I mean, the lab and the collection of apple scab infected leaves have moved from Amherst and Belchertown (respectively) to Greenfield.



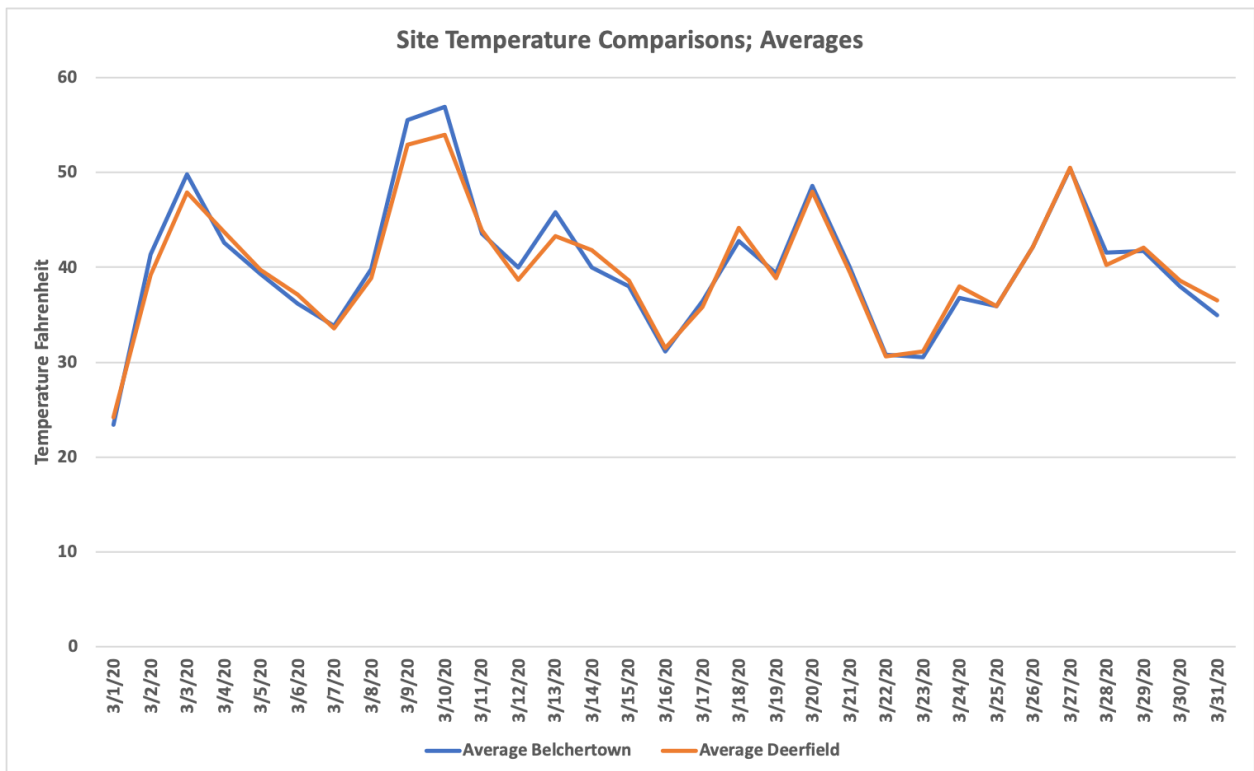
All the necessary tools to trap and count apple scab ascospores set up in the home OfficeLab in Greenfield. Every makeshift OfficeLab should have a fiddle...

Scab infected apple leaves were moved from Belchertown, MA to Greenfield, MA on March 20.

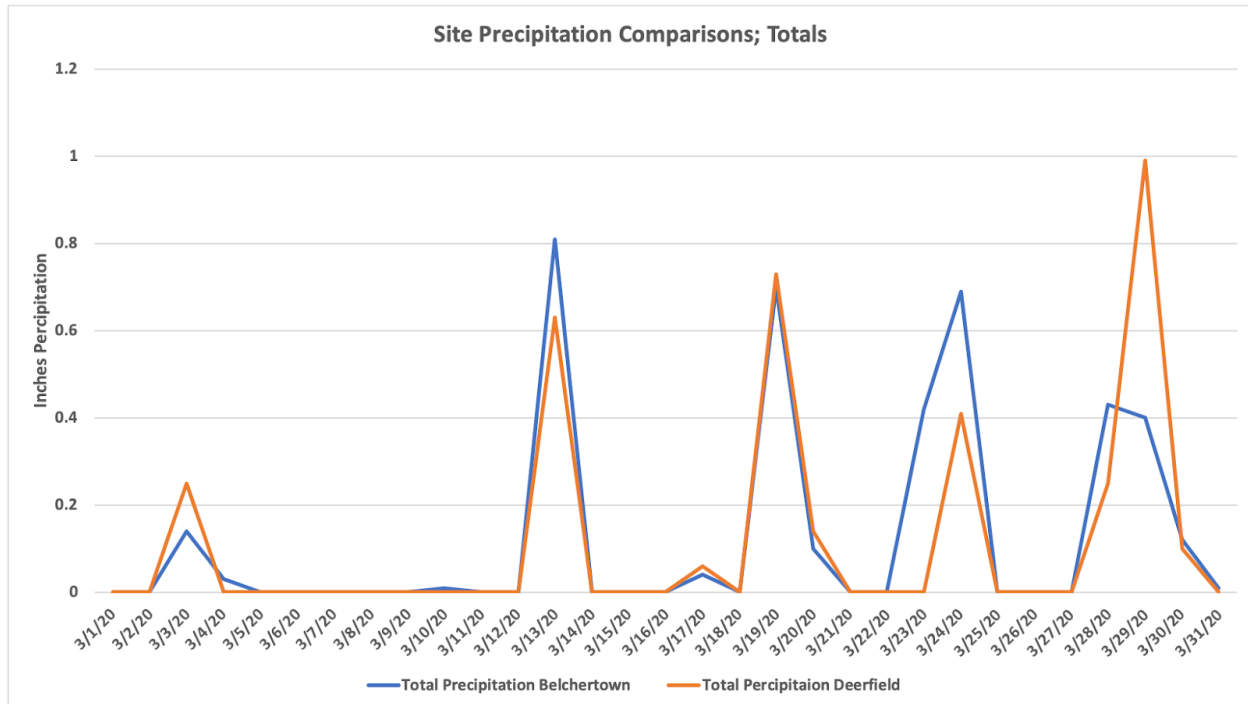
As you may know, things are a little different up in my neck of the woods... Climatic factors influencing phenology and ascospore development can change rapidly from one geographic location to the next (what did you think I meant by "different"?). While conditions vary, for the Month of March, they are not significantly different. The average temperature in Belchertown for the month of March is 40.24°F. The average temperature for the Month of March in Deerfield (closest reliable station reading available) is 40.04°F. Total rainfall at the two locations for the month of March is also very similar; 3.90" total in Belchertown and 3.56" in Deerfield. I wouldn't expect these differences to have a noticeable impact on the difference in development of ascospores from site to site... However, bud stages are a *little* slower here (full disclosure my only apple phenology observations are from the one single solitary Mac in my backyard) than they are in Belchertown. As you can see in the picture of buds below, Greenfield phenology is a little behind the pics Jon shared from Belchertown, earlier in the newsletter.



Bud development on McIntosh. 3-31-2020, Greenfield, MA



Average temperatures in Belchertown (blue line) and Deerfield (orange line) for the month of March. While there are a few isolated days where it was several degrees warmer in Belchertown, Deerfield, on average is only ~0.2°F cooler.



Total precipitation for the month of March in Belchertown (blue line) and Deerfield (orange line). Again, some significantly different individual events (like two nights ago when there was a monster electrical storm and torrential downpours up here), but, overall, Belchertown received only .34" more rain in total than Deerfield. **Bottom line**, I don't expect spore development to differ from what you are accustomed to when observations are made from Belchertown instead of Greenfield. **And**, if you have not already gotten copper on, you should do so. **And**, if you have not already gotten sanitation done, there is still time for that too!

Horticulture

Jon Clements

Once you are finished pruning and doing maintenance canopy sprays (copper, oil, fungicides) and the orchard floor has been cleaned of prunings and leaves -- you do that, right? -- consider getting a pre-emergent herbicide down ASAP. Remember, pre-emergent herbicides to be effective need relatively bare ground. Otherwise they won't be able to stop germinating weeds, unless the herbicide gets down in the germination zone. Good choices this time of year include Chateau, Alion, diuron (Karmex and generic), simazine (Princep and generic), Matrix FNV, Surflan, and Prowl H2O. Keep in mind some of these are best on grasses, or broadleaf weeds, or in some cases both. You may want to include a post-emergent herbicide if there are winter annuals or any other live weeds present. Do your homework before applying any herbicide, consult the New England Tree Fruit Management Guide, or the label. (You'd be amazed what's on the label sometimes!) I also found [this recent video](#) out of Cornell -- apparently they have a new Extension vegetable and fruit weed management specialist -- interesting. Please watch it in your spare time. Cornell Cooperative Extension - Eastern NY Commercial Horticulture Program

has a pretty nice YouTube channel [here](#) and there are some nice stone fruit IPM videos there too. Oh, and see what's new with paraquat. Have you received training? Or just don't use it, there are better options.

The image shows a YouTube video player with a white background and a black border. The title "What's New With Paraquat" is centered at the top in a red font. Below the title, there are four paragraphs of text. The first paragraph states that updated labeling and requirements for herbicide products containing paraquat are in place as of November 14, 2019. The second paragraph states that purchasers, applicators, mixers, loaders, or tank cleaners of herbicide products containing paraquat must be certified applicators and complete paraquat training, with a link to <https://campus.extension.org/login/index.php> to contact local CCE about opportunities. The third paragraph states that specialized paraquat training must be completed every three years with 100% score on exam at end of training. The fourth paragraph states that coming in November 2020, all containers (even less than 120 gallon drums) must comply with closed system standards. The video player interface at the bottom shows a progress bar at 27:04 / 34:01, and the video title "Stone Fruit IPM: Weeds" with 3 views and a date of Mar 24, 2020. There are also icons for like, dislike, share, save, and a menu.

What's New With Paraquat

Updated labeling and requirements for herbicide products containing paraquat are in place as of November 14, 2019

Purchasers, applicators, mixers, loaders, or tank cleaners of herbicide products containing paraquat must be certified applicators and complete paraquat training (<https://campus.extension.org/login/index.php>) contact local CCE about opportunities

Specialized paraquat training must be completed every three years with 100% score on exam at end of training

Coming in November 2020 - all containers (even less than 120 gallon drums) must comply with closed system standards

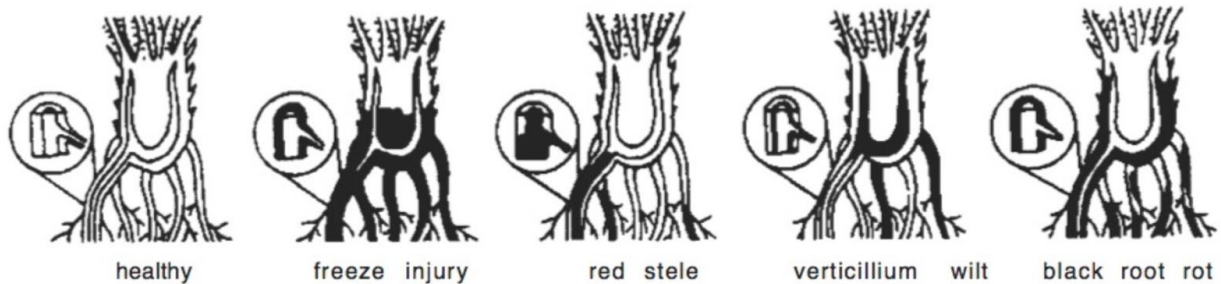
Stone Fruit IPM: Weeds
3 views • Mar 24, 2020

Small Fruit Update

Sonia Schloemann

Crop Conditions: Cold weather since last week has slowed or stalled development in most berry crops (thankfully). Somewhat milder weather forecast for the coming week should get things moving again.

Strawberries - Mulch is still in place in most locations (except where row covers were put on to accelerate development), but should be coming off as soon as new growth begins and/or soil temperatures are in the 40°F's. If you are worried about how well the plants came through the winter, check for injury by cutting a few crowns lengthwise and look for browning.



Check under the mulch to see if any new growth has begun. Remove mulch if it has or plants (and yield) will suffer. Be ready to recover the field or turn on irrigation for frost protection as plants begin to grow and push flower trusses up from the crown. More on that soon. Finally, scouting for [cyclamen mites](#) should be done as new growth appears and for [two-spotted spider mites](#) when first foliage is fully expanded later this month.

Raspberries/Blackberries - buds have not moved very much since last week. Raspberry buds are swelling and blackberries are showing some green. It seems that there is little winter injury this year in most cases. If you're worried you can cut a few buds lengthwise to see if tissue is green throughout (no damage), or has a dark center (damage). However, since we are running early, damage can still occur this spring if we have a freeze event after budbreak. Brambles in tunnels are further along and should be monitored for [two-spotted spider mite](#). See [New England Small Fruit Management Guide](#) for recommended materials and rates.

Blueberries - Budswell is beginning to show in many varieties and some may be at budbreak. Winter damage may be present and is seen primarily as tip dieback. Prune out stem cankers from Phomopsis and Fusicoccum. Keep an eye out for [Blueberry Stem Galls](#) and [Blueberry scale](#) (several species) at this time. These are easier to see now than later when foliage has filled in the canopy of the bushes. Look for apothecia (fruiting cups) of the overwintered [Mummy Berry](#) beneath the bushes after spring rains. If high infections were seen last year, be prepared to protect against this disease this year. See the [New England Small Fruit Management Guide](#) for any treatment recommendations.

Grapes - Vines are still dormant and growers should be finishing up pruning soon. Lime sulfur applications can go on in blocks where [Phomopsis](#) was a problem last year.

Hawkeye's corner (notes from the field)

Liz Garofalo

No field visits for this week (yet...).

Guest article

Crop Load Management: Back to Basics

Written by Tory Schmidt, Project Manager, Washington Tree Fruit Research Commission. 27 Feb 2020.

Crop load management is a very big and consequential topic for tree fruit growers. With all the factors that can affect cropping, it can be overwhelming for newer producers to figure the big picture of how to produce consistently high yields of top-quality fruit. Even for those of us with gray hair and battle scars from decades of pruning and thinning successes and failures, it can be helpful to occasionally step back from the minutiae of our daily farming routines and remind ourselves of the myriad of tools available to help us achieve our production goals.

As such, we offer this brief overview of your opportunities as growers to set yourself up for success in crop load management. While it is by no means a comprehensive list of every factor that affects your cropping, hopefully, it stimulates some thought about some of your orchard management decisions.

[Read more...](#)

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Clarkdale Fruit Farms

5 hrs · 🌐



Thankful to have a farm with plenty of outside space for our boys!
Hopefully you can also get outdoors to enjoy the last day of
March...



👍❤️ 154

10 Comments 2 Shares

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Useful links

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

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](#)

The next Healthy Fruit will be published on or about April 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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