



Healthy Fruit, Vol. 25, No. 1, April 4, 2017

Jon Clements, Author (unless otherwise noted) and Editor

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Current degree day accumulations

UMass Cold Spring Orchard, Belchertown, MA	4-April
Base 43 (NEWA)	88
Base 50 (NEWA)	23

Note that apple green tip should occur app. 101 DD (Base 43), although obviously there is a range. We are still at silver tip (5-April) in Belchertown. The forecast is to be at app. 100 plus degree days Base 43 on 11-April. Hence, my prediction is to be at green tip next Tuesday (or sooner, a little showing here if you look hard). Good time then to be getting a copper spray on, perhaps include a fungicide if the apple scab forecast looks severe.

Current bud stages

Current bud stages. April 5, 2017, UMass Cold Spring Orchard, Belchertown, MA



silver tip +

dormant +

early bud swell

swollen bud

early swollen bud

Upcoming pest events

Coming events	Degree days (Base 43 BE)
Green fruitworm 1st catch	49-148
Pear psylla 1st oviposition	40-126
Redbanded leafroller 1st catch	113-177
Spotted tentiform leafminer 1st catch	115-215
McIntosh silver tip	62-108
McIntosh green tip	98-144

Upcoming meetings

12-April, 2017 (Wednesday) Fruit Twilight Meeting at 5:30 PM. Sunny Crest Orchards, 24 Hawkins Lane, Sterling MA. Bill Broderick will be our host. 1 pesticide credit will be offered. Light dinner (pizza/sandwiches) will be served. \$20 admission. Contact: Jon Clements, 413-478-7219. Pre-registration is not necessary.

20-April, 2017 (Thursday) Fruit Twilight Meeting at 5:30 PM. Phantom Farms, 2920 Diamond Hill Road, Cumberland, RI. In cooperation with Rhode Island Fruit Growers' Association. Terry Bradshaw, from the University of Vermont will share his expertise on orchard weed control, focusing on non-herbicide control. Two hours of pesticide credit should be available (pending) and a light dinner will be served. The meeting is free for RIFGA members and \$20 for non-members. Contact: Heather Faubert, 401-874-2967 or Jon Clements, 413-478-7219. Pre-registration is not necessary.

25-April, 2017 (Tuesday) Fruit Twilight Meeting at 5:30 PM. Outlook Farm 136 Main Road, Westhampton, MA. Brad Morse will be our host. 1 pesticide credit will be offered. Light dinner will be served. \$20 admission. Contact: Jon Clements, 413-478-7219. Pre-registration is not necessary.

25-April, 2017 (Tuesday) Airblast Sprayer Calibration Demonstration at 3 PM. Outlook Farm 136 Main Road, Westhampton, MA. (Preceding the Fruit Twilight Meeting at 5:30 PM.) Co-sponsored by UMass Extension Integrated Crop Management Program (eIP). 1 pesticide credit will be offered. Contact: Jon Clements, 413-478-7219. Pre-registration is not necessary.

For more information and updates, see [Upcoming Events](#)

The way I see it

Jon Clements

- This MAY be your last Healthy Fruit (HF), unless go to the UMass Extension Bookstore (<http://umassextensionbookstore.com>) and purchase a new [2017 subscription to HF](#) (\$50, 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 \$50 (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. Thanks.

- Sometimes I run into some confusion regarding our UMass fruit program publications and membership in [Massachusetts Fruit Growers' Association](#) (MFGA). MFGA membership is \$200 (\$25 for non-grower members) and includes a complimentary subscription to American Fruit Grower. It does not include any UMass fruit program publications. You can join or renew your MFGA membership using a credit card [here](#). (You can also make a voluntary donation to the UMass Cold Spring Orchard Research & Education Center, UMass Apple IPM Program, and/or MFGA's Horticultural Research Fund.) You can also join or renew MFGA using a mail-in form [here](#). Note that using the mail-in form you can also order UMass fruit publications, but I don't recommend ordering UMass fruit publications with your MFGA membership using that form. If you want to order UMass fruit publications, I recommend you use [this mail-in form](#). (Or you can order and pay using a credit card at the [UMass Extension Bookstore](#).) I hope that clears things up a bit. I encourage you to both join MFGA and order the UMass fruit publications that are of interest to you. More information on our UMass fruit publications is available [here](#). If you have any questions, please get in touch with me.

- OK, we are off to a slow start. YEEHAWWW! I think. Green tip should be next week, however, spraying anything is going to be a challenge given the extremely wet soil conditions. (BTW, is the drought over yet?) I would not rush things and wait until it dries out if you can. A copper spray on apples (before half-inch green), and on peaches (before bud break) and oil on pears (psylla) are the only things indicated at this time and over the course of the next week or so. I suspect many of you still have brush to move or chop? I know I still have pruning to do... :-)

- Bill Broderick at Sunny Crest Orchards in Sterling has agreed to host our first twilight meeting of the year next week on Wednesday (12-April). Bill has planted a lot of apple trees over the past few years, so that will be one focus of our attention. Should be a good meeting...

New England Tree Fruit Management Guide (beta) available on-line

• The New England Extension tree fruit specialists -- which include myself and Dan Cooley at UMass, Mary Concklin at UConn, Heather Faubert at URI, Terry Bradshaw at UVM, George Hamilton and Alan Eaton at UNH, and Glen Koehler and Renae Moran at UMaine -- have started to contribute to an on-line edition of the New England Tree Fruit Management Guide. Call it a beta version if you will, but we think it has some value in 2017 as we continue to work on it. (Consider it dynamic? Work-in-progress? Under construction?) But many of the spray tables (for lack of a better description) are filled out. Note that it is 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>.

Insects

Elizabeth Garofalo

Spring is finally here, for real this time! While we were all out yesterday enjoying the beautiful weather (last Monday), our first of the season insect pests were also soaking up the sunshine. At this time of year, there are three, in particular, that you should be thinking about hammering back with a solid dormant oil application.

- **Pear Psylla** For those of you who haven't completely given up on growing pears, now is the time to deal some damage to psylla. Adults begin to lay eggs around 84 DD (base 43°F). Cold Spring Orchard is currently at 89 DD (as of end of day yesterday). Applying oil will deter adults from egg laying (and kill any that it happens to come into direct contact with). This is an important management window for psylla. Knocking them back now will mean reduced effort in management later in the season.
- **San Jose Scale** This difficult pest has been popping up increasingly in Massachusetts orchards. Dormant/pre-bloom oil applications will smother adults before males emerge to mate. Thorough coverage and 2-3% oil concentration necessary to get the job done.
- **European red mite** After last summer's hot, dry weather many orchards in MA experienced big population surges and subsequent damage. All those mites laid eggs, which are now happily overwintering in the orchard. When they emerge, the damage they will cause could be worse than that experienced last summer, which was bad enough. In addition to giving us all panic attacks about the state of peaches, the warm temperatures we experienced this past winter did nothing to reduce egg survival. Getting a dormant oil application (2-3%) on between green tip and half-inch green will be a critical part of your successful mite management this year.
- Don't forget that oil applied within 48 hours (or so) of any frost/freeze event is NOT a good idea. Wait until it warms up...

Winter moth update (April 4, Heather Faubert, URI)

I expect winter moth eggs will begin hatching soon - I think either over the weekend or early next week. Many people are helping by monitoring winter moth eggs. I will let you know when eggs start to hatch so an insecticide such as Imidan can be applied to protect apple, pear, and blueberry buds.

Past messages can be seen at: <http://web.uri.edu/ipm/2017-2/>

Diseases

Dan Cooley

Is There a Downside to Urea?

There is concern in some places that urea applications for scab management are bad for apple tree nutrition. I'm not sure where the idea comes from, but I disagree. But since I'm not a specialist in apple nutrition, I decided to run it by someone who is, Wes Autio. Here's our thinking on the matter

First, realize that this is not a fertilizer application. Little if any nutrition makes it to the apple trees. Urea should not be spreading as granules to break down apple leaves. Urea for scab management should be applied as a solution, preferably in fall before leaf drop, or soon after leaves fall. The spray won't "control" scab, but is part of a sanitation program.

The highest priority in scab sanitation is chopping leaves, either in spring or fall. Spraying urea improves the impact of leaf chopping, so doing both is a good idea. Sanitation lowers the risk of scab outbreaks and the development of fungicide resistance, and is worth doing every year.

The argument against using urea contends that it adds too much nitrogen to an orchard, decreasing fruit quality and increasing fire blight risk. However, the application of urea to leaves in a solution makes it largely unavailable to apple trees. The 22 lb/A of nitrogen being put on with a urea application targeting scab would have minimal impact on a fertility program. Most if not all the 22 lb. of N in a 44 lb/A urea application stays on the old leaves or grass on the orchard floor, volatilizes as a gas, or is tied up in microbes that break down the old leaves. As for aggravating fire blight or hurting fruit color, there simply is no evidence that urea applications in the amounts and a form recommended FOR SCAB SANITATION do those things.

Some suggest that urea acidifies soils like other ammonium sulfate and ammonium nitrate. That's very unlikely. All N fertilizers do not have the same impact on soil pH. Urea and ammonium nitrate are slightly acidifying fertilizers, while ammonium sulfate is severely acidifying. Again, we're talking 44 lb./A urea, not incorporated in the soil, but doing its thing at the soil surface, mostly in old apple leaves.

Growers may ask "Why not just buy extra fungicide and use it?" Fungicides are certainly the primary tool in apple scab management, but sanitation and fungicide sprays aren't mutually exclusive. They work together to produce a high-quality crop. Sanitation adds an important margin of safety, reducing the overall risk of scab. In spite of our best efforts, sometimes mistakes happen, or the weather doesn't cooperate. Sanitation cuts the

chance that a couple of plugged nozzles, a windy day, or a two-week rain will lead to a bad scab outbreak. It also helps keep a full array of fungicide options available by reducing the chance that the fungus will develop resistance to them.

Scab sanitation should always involve chopping leaves, but urea sprays improve control. It's best done in the fall when the ground is generally drier, and leaves have more time to decay, but can be done in spring. The bottom line is that including urea as part of a sanitation program reduces scab risk without negative impacts on the crop.

Copper

If you haven't already attempted to turn your apple trees blue, now is the time to spray some dormant copper. This is first and foremost a fire blight treatment. The basic goal is to get enough metallic copper on trees to last until about Pink. This should suppress fire blight bacteria.

Regardless of fire blight history, apply copper at silver to green tip every year and cover the whole orchard. Fire blight is unpredictable so it's important to keep your guard up. You don't want to give the bacteria a base of operations on trees that are at relatively low risk. So the old Mac's on M7's may not be in much danger themselves, but if they aren't covered with copper, the *Erwinia* can move from them to the new Honeycrisp on M9 block where they can do significant damage.

Don't apply copper later than Half Inch Green, as it may damage leaves or end up russetting fruit. If weather is predicted to be near freezing, copper and oil can damage leaves, but will be fine on trees that are dormant to Silver Tip.

Apply at least 2 lb. of metallic copper per acre. There are too many copper products to list so I won't try, but most formulations have 20% to 50% metallic copper. However, newer products, like Cueva, have much less, in this case 1.8%. That decreases the chance of tissue damage for products applied on new leaves and fruit, but isn't the best choice for a dormant spray. To get 2 lb./A metallic you'd need to use over 100 lb./A of Cueva

Good coverage is important. You want to get the copper into the cracks and crevices on the trees, so apply as dilute a spray as is practical. Mix with oil, at least 1 qt./100 gal., though you can go higher if you're also trying to control scale and mites.

In an orchard with little scab pressure, the copper will be adequate to control scab for the first 5 to 7 days after bud break, though it's safer to add a low rate of an EBDC fungicide (usually 3 lb/A mancozeb) as well.

Horticulture

Jon Clements

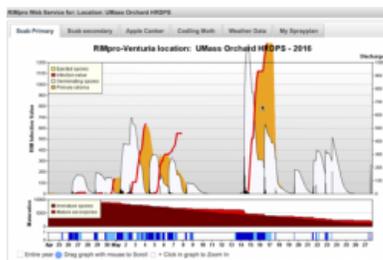
This time of the year, everyone is concerned about making it through April-May w/o damaging temperatures to fruit buds. (And then we start worrying about hail.) With that in mind, here are a few websites of interest:

[Critical Spring Temperatures for Tree Fruit Bud Development](#) (from Michigan State University Extension, nice to print and put on wall so you can stare at and worry)

[Climate Smart Farming Apple Stage/Freeze Damage Probability](#) (note: not an endorsement here, this site has some issues, mostly by declaring growth/bud stage earlier than it actually is, but it is interesting)

[Northeast Regional Climate Center Apple Frost Risk Maps](#) (note: ditto from above)

Guest article



Apple Orchard Management Decisions in 2017: Take Advantage of Technology

by Jon Clements and Daniel Cooley, UMass Amherst

(re-printed from <http://ag.umass.edu/fruit/news/apple-orchard-management-decisions-in-2017-take-advantage-of-technology>)

Online Decision Support Systems (DSS's) provide guidance in managing disease and insect pests using weather based forecasting models. These DSS's predict pest development and risk of infection/damage. Weather data can be acquired from either on-site weather stations or by virtual gridded data. For 2017, Massachusetts apple growers have a choice of four DSS's, which are briefly outlined below.

SkyBit E-Weather (skybit.com) is a commercial service that provides weather data and model output via daily e-mails...

- Weather data - virtual, gridded, customer provides location details

- User interface - daily e-mail
- Models - apple scab, fire blight, sooty blotch/flyspeck, codling moth, oblique-banded leafroller, apple maggot fly, and more; also daily weather history and forecast and spraying conditions (wind, drying)
- Cost - \$50 per site, plus \$10 each for disease and/or insect models per month; can be turned on or off at will, but recommended period is April-September

Ag-Radar (agradar.info) is run by Glen Koehler at the University of Maine and uses Skybit subscription data to run many, many disease/insect and horticulture models and tools...

- Weather data: virtual, provided by Skybit subscription
- User interface: website
- Models: apple scab, fire blight, sooty blotch/flyspeck, codling moth, oblique-banded leafroller, apple maggot fly, plum curculio, and many more; also horticultural tools such as bud stage prediction, fruit thinning conditions, and harvest date predictions; spray residue depletion
- Cost: Free, however, one must provide daily hourly weather observations to AgRadar via SkyBit subscription at a cost of \$55 per month

Network for Environment and Weather Applications (NEWA) (newa.cornell.edu) provides weather data and model outputs by a network of weather stations of which there are currently 46 in Massachusetts...

- Weather data: on-site weather stations, mostly in orchards but also at airports
- User interface: website
- Models: apple scab, fire blight, sooty blotch/flyspeck, codling moth, oblique-banded leafroller, apple maggot fly, plum curculio, and several more; also horticultural tools including Apple Carbohydrate Thinning and Apple Irrigation
- Cost: Free, cost of supporting the Massachusetts NEWA state network provided by UMass Extension (NEWA annual fee \$1,750), plus in-kind support (ongoing maintenance and troubleshooting) by growers who have stations and UMass Extension

RIMpro (www.rimpro.eu) is a European-based cloud service that produces mostly graphical model outputs in greater detail than the other DSS's mentioned above...

- Weather data: either on-site NEWA weather stations or virtual data provided by meteoblue
- User interface: website
- Models: apple scab, fire blight, codling moth, European apple sawfly, weather data; spray residue depletion
- Cost: 200 Euros per site payable by Pay Pal for an individual account, plus \$50 for NEWA data or 50 Euros for meteoblue

Note that all these DSS's require user input in terms of setting biofixes (when things happen in your orchard), including bud stage (phenology), and in some cases pheromone trap captures. Also, there is typically some initial setup involved, however, anyone can visit NEWA or Ag-Radar to view model outputs and pest management tools. You are encouraged, however, to get your own site set up on one of these DSS's as it will be more accurate than a site that is "close to you." You will find these important tools for Integrated Crop Management should help you produce a better apple crop in 2017.

If you have any questions, please contact Jon Clements, jon.clements@umass.edu 413-478-7219.

Facebook Me

Follow me (jmcextman) on FB: <https://www.facebook.com/jmcextman>

 **GU Fruit** added 3 new photos. 41 mins · 🌐

Наш консультант Нико Верной прибыл к нам с очередным визитом: перед цветением нужно все тщательно проверить, оценить и принять решения касательно дальнейших действий.

Our consultant Nico Vernooij arrived to us: before flowering everything should be checked, estimated and important decisions concerning further actions must be taken.

[See Translation](#)



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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>

Follow me on Twitter (<http://twitter.com/jmcextman>) and Facebook (<http://www.facebook.com/jmcextman>)

[David Rosenberger's Blog](#)

[Peter Jentsch's Blog](#)

The next Healthy Fruit will be published on Tuesday, April 11 or thereabouts, 2016. As always feel free to get in touch with any member of the UMass Fruit Team (<http://extension.umass.edu/fruitadvisor/team-members>) if you have questions or comments.