



Healthy Fruit, Vol. 30, No. 7, May 17, 2022

Prepared by the University of Massachusetts Amherst Fruit Team

Jon Clements, Editor

### Current degree day (DD) accumulations

UMass Cold Spring Orchard, Belchertown, MA (NEWA, since January 1)	16-May
Base 43 BE	531
Base 50 BE	252






### Upcoming pest events

Pest	DD's Base 43 F. BE	Recommendation
Codling moth 1st flight peak	562-890	Hang pheromone monitoring traps; set biofix when the first few moths are caught within a day or two
Lesser appleworm 1st flight peak	364-775	Hang pheromone monitoring traps
Lesser peachtree borer 1st catch	476-666	Hang pheromone monitoring traps and/or mating disruption
Pear psylla hardshells present	493-643	
Plum curculio oviposition scars present	485-589	Fruit becomes very susceptible to PC feeding injury at 6-7 mm., and when night time temperatures are

		in the 60's; this weekend will be an important PC control period
San Jose scale 1st adult catch	443-623	
San Jose scale 1st flight peak	560-736	
Spotted tentiform leafminer sap feeding mines present	343-601	
McIntosh fruit set	507-593	Do not apply insecticides during bloom

## Current bud stages

Current bud stages. 16-May, 2022, UMass Cold Spring Orchard, Belchertown, MA (more current bud stages [here](#))

				
McIntosh apple <i>Petal fall/fruit set</i>	Honeycrisp apple <i>Petal fall</i>	Gala apple <i>Petal fall</i>	Crispie pear <i>Fruit set</i>	Redhaven peach <i>Petal fall/fruit set</i>

## Upcoming meetings

**Every Tuesday at noon** - UMass Fruit Team Open Office Hour  
<https://umass-amherst.zoom.us/j/97190816203> Bring your own lunch.

**Wednesday, May 18, 2022, 5:30 PM** - From Heather Faubert: "We will have a true Twilight Meeting on May 18 at 5:30-8:00 at Spencer Morris's apple orchard at 71 Long Lane, Warren, RI. Spencer is growing primarily cider varieties for his cidery, [Sowam Cider Works Company](#), in downtown Warren. NOTE: The meeting is at the orchard on Long Lane, not at the Cider Works Company. We will not be serving food, and you need to bring your own chair if you want to sit. Feel free to bring a bag lunch for yourself. Two hours of pesticide recertification credits are available."

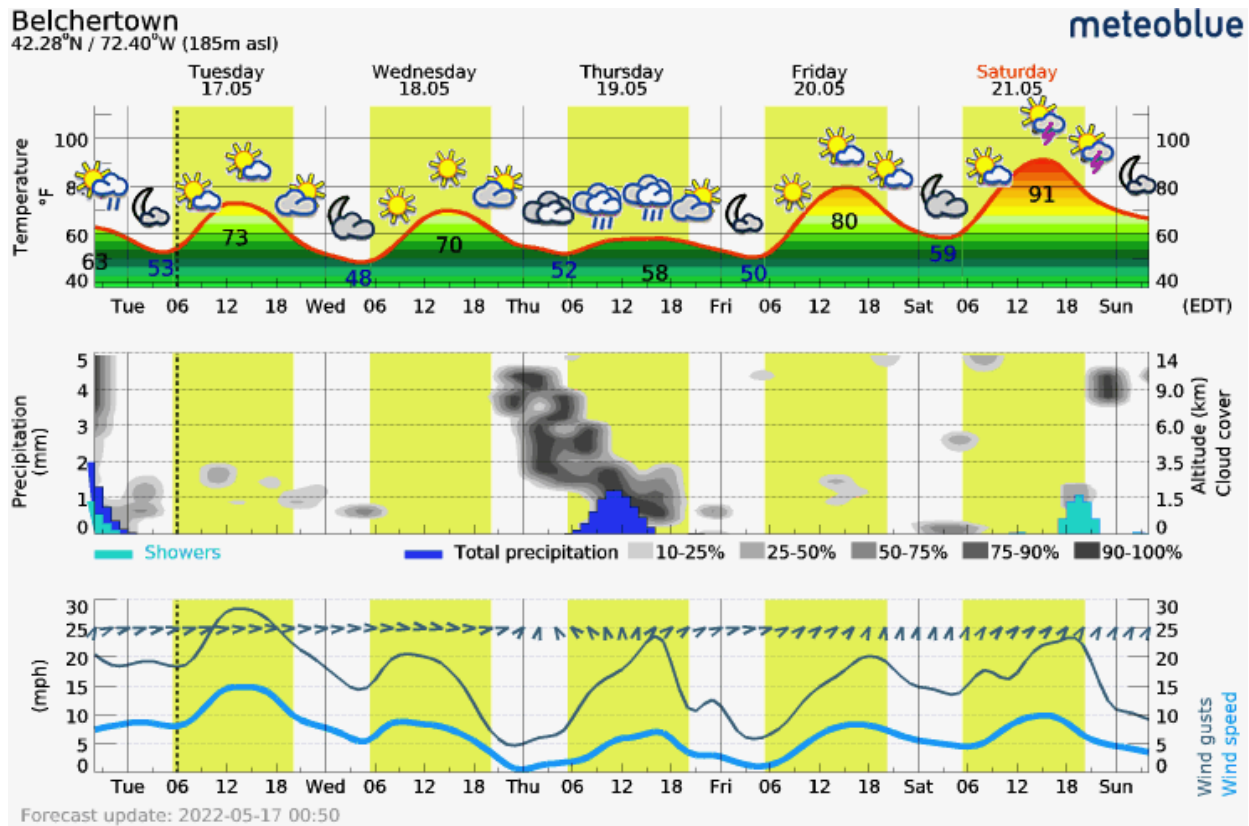
**Wednesday, June 1, 2022, 4:30 PM** – UMass Fruit Team Twilight Meeting, Apex Orchards, 225 Peckville Road, Shelburne Falls, MA. More details forthcoming...

**Thursday, July 14, 2022** – Annual Summer Meeting of the Massachusetts Fruit Growers' Association, UMass Orchard, Belchertown, MA. Details TBD.

## The way I see it

Jon Clements

How to best classify our apple bloom period? Quick? Moderate to very good bee activity? Pollination and fruit set should be plenty? Fire blight a major threat? Yes, yes, yes, and yes. Hopefully everyone sprayed some streptomycin, preferably two applications, from Friday through Monday. With petal fall the fire blight threat is over except for the unfortunate orchards that will still be in bloom this upcoming weekend when the fire blight threat will be elevated once again. This week is the petal fall thinning spray, when you can find a spray window with no wind, it looks like it's going to be late evening, overnight, and early morning for the next few days. Graphical weather forecast below. I hope you consider coming to RI for the twilight meeting tomorrow evening, Wednesday, at 5:30 PM, 71 Long Lane, Warren, RI. It's right off I-95 near Seekonk, MA. I will be there...



# Entomology

Jaime Pinero

**Plum curculio.** Environmental conditions are conducive to steady plum curculio immigration into apple blocks. As you know, as soon as fruitlets reach 5-6 millimeters in diameter the entire block needs to be sprayed with an insecticide of your choice. The weather forecast showing high temperatures over the weekend suggests that sprays will need to be in place BEFORE the weekend. Heavy damage can be caused in just one night if the developing fruit is not protected.

Because fruit damage is usually most common in border rows next to sites where adults overwinter, then after the petal fall spray, border-row sprays are usually effective at keeping plum curculios in check.

**How many additional sprays will be necessary to maintain protective chemical residues to prevent subsequent damage throughout the plum curculio oviposition cycle, which varies according to temperatures and weather patterns after petal fall?**

About 24 years ago, entomologists from Cornell University developed an oviposition model for plum curculio that assumes that residues from sprays applied after petal fall need to be maintained on fruit and foliage only until adults stop immigrating into orchards. Field trials showed that protection of the fruit via insecticide residue was no longer necessary after the model predicted that 40% of the cumulative plum curculio oviposition and feeding cycle had been completed. This is predicted by the model to occur at 308 DD (base 50°F) after the petal fall of McIntosh. By this time, adults residing in treated trees have already been killed by insecticide residues and are unable to complete the remainder of their normal oviposition cycle.

This is what you need to do:

- (1) Treat the entire orchard at petal fall with an effective insecticide.
- (2) Start calculating the accumulation of DD after the petal fall of Macs (base 50°F); this is easily done from the NEWA Apple Insect Models page by entering the petal fall date for your area.
- (3) No additional sprays are necessary whenever the date of accumulation of 308 DD falls within 10–14 days after a previous spray.

**Oriental fruit moth.** Moths are still flying (actually, the peak of moth activity may have been reached this week) and egg hatch is estimated at 50%. Apply a second control spray 10-14 days after petal fall, especially in high pressure orchards (trap catch > 10 / trap / week).

**Codling moth.** Except for one orchard where some moths have been captured in pheromone traps, no codling moths have been captured in monitored orchards. Similarly, one cooperating orchard in New Hampshire reported no codling moth activity.

**Obliquebanded leafroller.** It is time to set traps to monitor the first flight (summer generation). Adult moth activity is predicted at around 700 DD base 43F. Currently, 551 DD have accumulated since January 1<sup>st</sup>.

As a reminder, obliquebanded leafroller has two generations per year, overwintering as small larvae in the trees. The overwintering larvae become active when trees break dormancy, and they complete their development about 3 weeks after the apple blossom period. In Massachusetts, adults usually begin to emerge in early June.



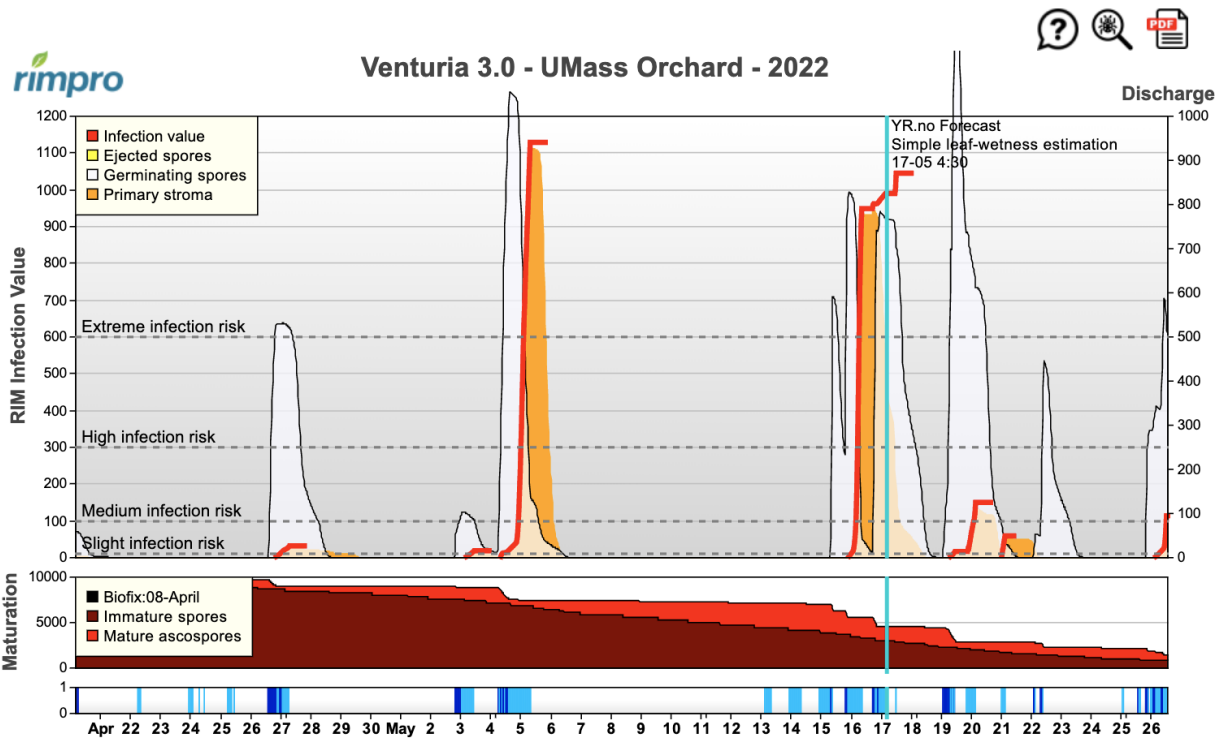
## Pathology

Jon Clements

Sans Liz, I will make it short and sweet. I expect Dan Cooley will be contributing starting next week?

- Primary **apple scab** season is not over yet. The major infection period yesterday, I hope you were covered up with fungicide, if not, get back out there with some kickback fungicide ASAP. Stay covered up for the next week, although the rain prospects and infection potential look limited. Time will tell. Don't expect the primary to be over until June 1. (What else is new?) I have not seen any scab lesions yet, but I am not Hawkeye.
- **Fire blight** risk was EXTREME over the weekend, and has backed off considerably now with petal fall and cooler weather. You know what to do, or not to do in this case.
- **Powdery mildew** infection risk remains high, every fungicide application should include something effective for powdery mildew, which typically also includes some scab kickback. Think the likes of Flint, Fontelis, Indar 2F, Inspire Super, Luna sensation, Merivon, Miravis, and Cevya. Among a few others...
- **Marssonina leaf blotch** should be controlled for the time being with your timely scab fungicides.
- Rots, especially **bitter rot** (but black rot was also bad too) bit us hard last year where summer fungicide programs were lacking. Not helped by the excessive rain. Stock up on Captan if June and July are wet, Captan is the A-1 fungicide for rot control. Might want to avoid Captan at petal fall and early cover sprays though, as it can cause some fruit finish issues during this time. Or at least spray Captan when it is dry. There is a seasonal limit on how much Captan you can put on, but it's quite high. Read the label.

Fungicides are your friend, be happy...



The apple scab season to date according to RIMpro. Look Ma, only two really important infection periods!

## Horticulture

Duane Greene

### Chemical Thinning Suggestions for May 17, 2022

Most orchards should be at some stage of late bloom, petal fall or the 6-7 mm fruit size stage. They are at the stage where chemical thinning can be effective. The weather over the next few days does provide opportunities for effective thinning. The weather following thinner application is the key for effective thinning. Do not miss this opportunity. What you do does depend on the bloom stage in your orchard. From the time when petals fall from the trees until the fruit receptacle grows to 5 mm I do not pay too much attention to the NEWA carbohydrate model, since fruit are not growing and thus little carbohydrate is required. When fruit size approaches 4-5 mm, the carbohydrate model should be consulted and thinning decisions should be guided by this model.

The NEWA model over the next 2 days suggests that the thinner rates should be increased by 30%. That is as far as the model goes. However, looking at NEWA weather predictions over the next 6 days, it appears that favorable thinning weather is coming. A very good estimate of



long-term thinning potential can be gained by looking at the predicted carbon deficit and the predicted temperature highs.

### Thinning Options Available

**Naphthaleneacetic acid (NAA)** This is a workhorse thinner for this time of year. I recommend applications at 10-12 ppm. It may be applied alone at petal fall but to get additional thinning, application of carbaryl in addition is highly recommended. I use 1 quart/100 gal but 1 pint/100 gal is probably adequate. In my estimation this may be the best option you have available now to achieve meaningful thinning.

**Naphthaleneacetamide (NAD)** I recommend that Regulaid be added to any thinning application of NAD. This is an underused thinner that is very safe (will not over thin). For those who are nervous about applying NAA, NAD would be an excellent alternative. It is not as potent a thinner as NAA. As with NAA, it may be applied alone or in combination with carbaryl. You should apply NAD (Amid-Thin W) at 50 ppm, the highest rate allowed on the label. If you use a lower rate you will probably be disappointed in the thinning results. You may apply NAD at both bloom and petal fall and include carbaryl only in the petal fall spray.

**Carbaryl** This has been the standard thinner used in New England for many years. It is considered a very mild thinner which leads to its popularity. With very few exceptions, carbaryl should not be used as the only thinner orchardists should depend upon to single-handedly do all thinning on a variety (except for very easy to thin varieties). We recommend using between 1 pt and 1 qt per 100 gal for thinning. Carbaryl is unusual among chemical thinners in that the thinning response is concentration independent. This is significant in that the insecticidal rate of carbaryl, commonly used for plum curculio control, is 1.5 to 3 qt. per acre. Therefore, if you increase the rate of carbaryl you apply at petal fall to the insecticidal rate it will have essentially no additional thinning activity beyond that which you would expect from the usual lower thinning rate of 1 pt to 1 qt per 100 gal. Carbaryl is very toxic to bees. It should not be applied until FULL petal fall, after the bees have been removed from the orchard.

**6-BA (Maxcel, etc.) plus carbaryl** This is not a combination that I recommend this early in the season, although it is recommended in other regions. I have not been successful using 6-BA at this time. Regardless, 6-BA should only be applied when warm weather (probably above 80° F) is forecast. For the greatest amount of thinning carbaryl should accompany 6-BA.

**Ed. note** For the very few of you that MIGHT be using the Malusim app (iOS and [Google Play](#)), there has been an update. You should delete your currently installed Malusim app and then download and reinstall the updated app. Note you will have to login again, I hope you know your username and password. Right now, the Malusim app is used primarily for the fruitlet growth rate model, but I'd remind you it also includes the carbohydrate and irrigation models. If you are not using it, you can visit [malusim.org](http://malusim.org) and sign up. Any questions, let me know. I'd also refer you to this Fact Sheet: [HRT-RECIPE - Predicting fruit set using the fruitlet growth rate model](#) Also note links below in Useful links to various apps that I use and find indispensable, some for

pesticide recommendations, some for implementing the fruitlet growth rate model. I guess you are either into it or not... :-)

## Guest article

No Guest article this week...

## Useful links

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

Network for Environment and Weather Applications (NEWA): <http://newa.cornell.edu>

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[The Jentsch Lab](#) (Peter Jentsch, Poma Tech)

[Acimovic Lab](#) (Srdjan Acimovic at Virginia Tech)

[Tree Fruit Horticulture Updates](#) (Sherif Sherif at Virginia Tech)

App store: Malusim (iOS and [Google Play](#)); Fruit Growth Model (iOS); Orchard Tools (iOS);

MyIPM (iOS and [Google Play](#)); Eco Fruit/Apple App (iOS and [Google Play](#)) Note: for iOS apps search the App Store on your iOS device.

The next Healthy Fruit will be published on or about May 24, 2022. 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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