



Healthy Fruit, Vol. 30, No. 8, May 24, 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)	23-May
Base 43 BE	678
Base 50 BE	351

### Upcoming pest events

Pest	DD's Base 43 F. BE	Recommendation
Black cherry fruit fly 1st catch	702-934	
Black stem borer 1st flight peak	635-901	Monitor for signs of boring or hang traps
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
Obliquebanded leafroller pupae present	601-821	None
Redbanded leafroller 1st flight	610-891	Petal fall insecticides should be

subsides		effective
Plum curculio still active until 308 DD's Base 50 F. from petal fall	485-589	Fruit becomes very susceptible to PC feeding injury at 6-7 mm., and when night time temperatures are in the 60's; insecticide control for PC is necessary until the 308 DD's threshold has been reached
San Jose scale 1st flight peak	560-736	See Entomology below
Spotted tentiform leafminer 1st flight subsides	682-941	Who still has a problem with STLM?

## Upcoming meetings

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

**Saturday, June 11, 2022** - Massachusetts Cultivated Blueberry Grower's Association (MCBGA, Kenburn Orchards, Shelburne Falls, MA.

**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

This is the time of year when things kind of get out of control, I am sure everyone is feeling it. Between fire blight, scab, plum curculio, and fruit thinning the sprayers have been busy. Focus on the 10 mm. fruit thinning spray now, conditions should be good for getting that application on later this week with the exception of Friday maybe when rain is predicted. I will note NEWA indicates on average that the 200-250 DD's window for applying that sweet spot 10 mm thinner is upcoming later this week. I have been measuring fruitlets and in at least one case the bloom and petal fall NAA thinner applications appear to have been very effective. But most of you will be needing to apply a thinner this week. Feel free to check in with me or Duane if you have any chemical thinner questions, this is the week to get it done. That's all I got, it's a busy week.

Forecast Details

Thinning efficacy: Mild Good Very Good Excessive

Date (2022)	Max Temp (°F)	Min Temp (°F)	Solar Rad (MJ/m2)	Tree Carbohydrate Status (g/day)		Accum 4°C DD since bloom ≥ 200 & ≤ 250	Thinning Recommendation L = Low Risk of Overthinning C = Caution D = Danger of Overthinning
				Daily	7-Day Weighted Ave		
May 21	88	62	18.9	-66.83	-23.22	147.4	Thinning Rate L
May 22	90	66	21.4	-75.72	-10.38	168.7	Apply Standard Chemical Thinning Rate L
May 23	72	56	26.5	12.59	-2.56	182.3	Apply Standard Chemical Thinning Rate L
May 24	71	51	22.5	16.66	2.85	194.4	Increase Chemical Thinning Rate by 30% L
May 25 Forecast	74	50	21.7	13.73	5.92	207.1	Increase Chemical Thinning Rate by 30% L
May 26 Forecast	70	49	21.9	26.17	-	218.4	-
May 27 Forecast	72	58	11.1	-32.22	-	232.7	-
May 28 Forecast	71	62	19.4	0.79	-	247.8	-
May 29 Forecast	71	59	21.1	17.27	-	262.1	-

The NEWA apple-carbohydrate-thinning model for Belchertown, UMass Orchard. Note we are at the 200 to 25 DD “sweet spot” for applying that 10 mm thinning spray of NAA/carbaryl/6-BA. 6-BA works best with some heat, which I am not seeing until later in the week. Also note that currently the recommendation is to increase chemical thinning rate as the carbohydrate balance is positive.

## Entomology

Jaime Pinero

**Plum curculio (PC).** After the petal-fall spray, the risk of new PC oviposition injury is greater on orchard perimeters and in high-pressure blocks, which may require additional sprays (10–14-day intervals) until oviposition ends. The end of oviposition occurs at about 308 DD after petal fall (see how to use the Degree Day model, below). After the petal-fall spray, it is important to continue monitoring for the presence of fresh egg-laying scars to decide if/when perimeter-row sprays are needed.

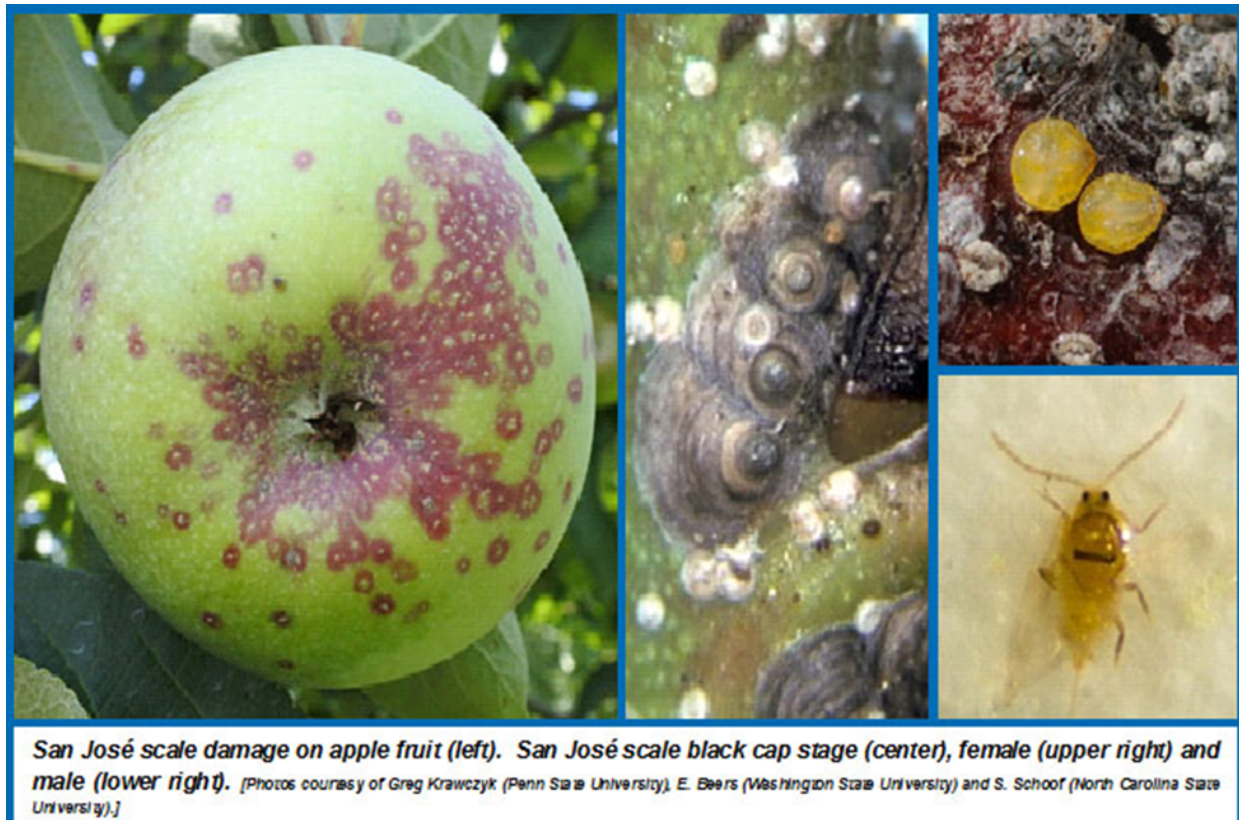
By using a Degree Day-based prediction model, apple growers can save one insecticide application approximately 50% of the time compared to the standard three applications applied without said model. As discussed last week, the end of PC oviposition activity is predicted to occur at 308 DD (base 50°F) after petal fall of McIntosh. Here are the steps you would need to follow to use the DD model:

- (1) Treat the entire orchard at petal fall with an effective insecticide.
- (2) Start calculating the accumulation of DD after 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.

**San Jose Scale (SJS).** It is time to monitor for crawler emergence with double-sided sticky tape placed around tree limbs. SJS has become more abundant in some orchards, so monitoring is recommended. Place sticky bands in trees 7-10 days after petal fall and replace every two to three weeks throughout the season. Crawlers' yellow bodies will be caught on the tape.

The female SJS produces live young. The newly hatched crawler of either sex is yellow. It has six legs, two antennae and a bristle-like sucking beak that is almost three times the length of its tiny, oval body. The crawlers (nymphs) emerge around mid-June. Each female produces several hundred living young which disperse over the tree in search of suitable feeding sites. As crawlers mature, they produce a whitish secretion that blackens with time and hardens into a waxy protective covering. Second-generation male flight and mating usually begin by mid-July, producing crawlers by mid-August.

Take into account that SJS is rarely distributed uniformly throughout a tree, and may only infest a few trees in the block.



**Action threshold:** The decision to treat is usually based on finding infested fruit at previous year's harvest. Examine 50 fruits per tree on 2 trees per acre and treat if you find more than 0.1% fruit with SJS injury.

**Management:** Apply insecticide when crawlers become visible. The table below presents the materials that are recommended (New England Tree Fruit Management Guide). Some insect growth regulator insecticides have been very effective at controlling crawlers. A recent addition is Senstar, which combines two active ingredients: Spirotetramat (IRAC group 23) and pyriproxyfen (IRAC group 7C). You can access the Senstar label [HERE](#).

INSECT	IRAC	PRODUCT	RATE/ ACRE	REI- HOURS	PHI- DAYS	EFFICACY	COMMENTS
San Jose scale	1B	Imidan 70W	2.1 to 5.7 lb.	4 days	7	moderate	
	4A	Admire Pro	2.8 fl. oz.	12	7	moderate	
	4A	Assail 30SG	8 oz.	12	7	moderate	
	4C	Transform WG	2.75 oz	24	7		Suppression only
	7C	Esteem 35WP	4 to 5 oz.	12	45	High	
	16	Centaur 0.7WDG	34.5 oz.	12	14	High	
	23	Movento 240SC	6 to 9 fl. oz.	12	7	High	Must be used with adjuvant having spreading and penetrating properties. Most effective when used at petal fall to first cover.
	3, 28	*Besiege	6 to 12 fl oz	24	21		
	NC	SuffOil-X	1-2%	4	0		<b>OMRI</b> listed.

**Spotted-wing drosophila (SWD).** Odor-baited traps were deployed in 5 locations. Starting next week, we will provide weekly updates on SWD population levels.

**Spotted lanternfly (SLF).** MDAR is asking the public to keep an eye out for SLF during the spring planting season due to the risk of egg masses being accidentally brought in on shipments of trees imported from other states. MDAR recently received reports that nursery stock from SLF-infested areas may have been sent to Massachusetts growers. Due to this, anyone who has recently purchased trees or shrubs or had them planted on their property, particularly maple or crabapple trees, is being asked to inspect the trunk and branches to ensure there are no SLF egg masses or any hitchhiking nymphs, and to report any finds to MDAR. Landscapers and plant nurseries are also being reminded to stay on the lookout for this pest.



*Young SLF nymphs on a tree-of-heaven stem; Source: Richard Gardner, via bugwood.org*

## Pathology

Dan Cooley

**Fire blight.** At Belchertown, any infections from the first forecast fire blight infections of this season on May 11 should start to be visible now, according to RIMpro. Scout sensitive varieties and areas with fire blight history for early blossom blight symptoms.

Unless you have a very late blooming variety there's no risk of blossom blight without blossoms. Even if you do have a cider cultivar that's putting out blossoms, there's no forecast blight weather through this week.

At this point, any focus should be on shoot blight management. Do not use streptomycin after bloom! For shoot blight, Apogee 2 oz. plus Actigard at 1 oz. applied around 10 days after petal fall has been effective in Michigan trials.

<https://www.canr.msu.edu/news/applying-apogee-and-actigard-to-young-apple-trees>

**Scab.** While NEWA says primary scab infections are done in most areas, RIMpro says the forecast rain this weekend will be a significant infection period. Even if NEWA is correct, there's



good reason to protect trees going into the wetting in case there are undetected scab infections - scab is still hard to see.

**Fruit rots.** Another reason to protect young fruit now is the increasing problems with fruit rots, particularly bitter rot. Low temperatures in the 50's are good news, but as the lows go into the 60's, bitter rot pressure increases. If you can meet label requirements for mancozeb, then it is an excellent choice now. However, if you can't, then captan (2 to 3 lb./A) plus one of the SDHI fungicides (FRAC 7) or QoI fungicides (FRAC 11) is a good choice.

## Horticulture

Duane Greene

### Chemical Thinning Suggestions for May 24, 2022

This past week turned out to be very challenging, although this is not a new occurrence for the thinning period. Last week the focus for most of us was on the potential to experience close to record-breaking heat on the weekend and the ramifications that this might have on thinning. Caution was the prevailing sentiment. It is my interpretation that thinner applications made last week heeded those warning resulting in making more conservative thinner applications. Temperatures did get into the 90s both Saturday and Sunday but our predictive models were consistently suggesting to apply a standard rate of thinner. Only time will tell if they were correct.

I walked the UMass Orchard yesterday to make observations in anticipation of developing thinning suggestions for this week. Thinners were applied last week (Wednesday and Thursday). Given the warm temperatures experienced last weekend we should be able to see any growth responses over the next 3 to 4 days. I did note a wide range of fruit sizes on a tree which may be attributed to both the thinners applied and the prolonged bloom period that we experienced. We hope to establish a fruit size differential in clusters so that it will be easier to thin off small fruit with later applications. This is an opportunity.

What are you going to do this week? The weather forecast for the coming week suggests that somewhat cool conditions will prevail and the NEWA Thinning Model suggests that the thinner rate should be increased by 30%. That seems like a reasonable suggestion at this time, although conditions can and often do change, as they did last week.

Prohexadione-calcium is used very frequently in orchards to control vegetative growth and to discourage fire blight infection. Keep in mind that it will also make it more difficult to thin treated trees, so more aggressive thinner application should be used on these trees.

Most mainstream thinners may be used at this time, although we generally do not recommend using Amid-Thin after petal fall for fear of causing pygmy fruit development. That observation was shown to be true for Delicious but its response on other contemporary varieties has been largely untested. Probably this should be researched more in the future. ProTone is a thinner

available for use in organic orchards. In general, it requires heat and a relatively large carbon deficit to be effective. This does not appear to be the week to use this thinner.

## 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)

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[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 31, 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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