



Healthy Fruit, Vol. 28, No. 7, May 5, 2020

Prepared by the University of Massachusetts Amherst Extension Fruit Team

Contents

[MDAR PYO Guidance Document Released](#)

[Current degree day accumulations](#)

[Current bud stages](#)

[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...](#)

MDAR PYO Guidance Document Released

The MA Department of Agricultural Resources has released their guidance for pick-your-own (PYO) operations on how to open PYO operations in compliance with CDC guidelines for protecting consumer and worker safety. The complete guidance can be accessed here: <https://www.mass.gov/doc/mdar-bulletin-16-farm-pick-your-own-pyoagricultural-tourism-activities/download>

The guidance, briefly, includes the following recommendations:

- 6-foot social distance must be maintained while picking
- Personal safety recommendations from the CDC must be followed
- Farms are recommended to develop a PYO activity plan including locations of parking and picking areas, number of pickers allowed at a given time, and locations of hand wash stations

- Staff and customers must wear masks while working and picking
- Ag Tourism not related to direct harvest of crops is prohibited
- Prohibit sampling of produce and encourage pickers to minimize handling of produce
- Carts must be sanitized
- New single-use harvest containers must be used—re-usable bags and containers are prohibited
- New harvest containers must be stored under a plastic covering to prevent contamination
- There is NO need to disinfect produce, as there is no indication that COVID-19 is transmitted via food
- Increase frequency of routine sanitation and disinfection of surfaces including registration tables, sales areas, and other contact surfaces
- Handwashing stations must be made available for staff and customers
- Disposable gloves must be worn by staff at all times during PYO operations
- Communicate with customers as well as community partners such as local boards of health
- Plan for cancellations, be prepared in case you need to make changes to your activity plan

There will be a Q&A Online Forum on Monday, May 11 @ 1:00 PM
COVID-19 Pick -Your-Own Guidelines

Co-Hosted by – MDAR, Massachusetts Farm Bureau and UMASS Extension

The purpose of the call will be for the Department to walk PYO operators through the document. There will also be time for questions and answers.

Call-In Information

One tap mobile

+13017158592,,84022252608# US (New York)

+13126266799,,84022252608# US (Chicago)

Meeting ID: 840 2225 2608

Dial by your location

+1 301 715 8592 US (Germantown)

+1 312 626 6799 US (Chicago)

+1 646 558 8656 US (New York)

+1 253 215 8782 US (Tacoma)

+1 346 248 7799 US (Houston)

+1 669 900 9128 US (San Jose)

Meeting ID: 840 2225 2608 Find your local number: <https://us02web.zoom.us/j/84022252608>






Current degree day accumulations

UMass Cold Spring Orchard, Belchertown, MA (Since January 1)	4-May
Base 43 BE (NEWA, since January 1)	294
Base 50 BE (NEWA, since January 1)	115

According to the NEWA Degree Days prediction, by Monday, May 11, we will have reached 328 DD's Base 43 BE. Apple bloom should occur 344-415 DD's Base 43 BE.

Current bud stages

Current bud stages. 4-May, 2020, UMass Cold Spring Orchard, Belchertown, MA

				
McIntosh apple Pink	Honeycrisp apple Early pink	Crispie pear Bloom	Redhaven peach Bloom	Rainier cherry Bloom

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

Upcoming pest events

Coming events	Degree days (Base 43 BE)
European red mite egg hatch complete	368-470
Green fruitworm flight subsides	267-499
Lesser appleworm 1st catch	276-564
Lesser appleworm 1st flight peak	364-775

Oriental fruit moth 1st flight peak	331-533
Pear psylla 1st egg hatch	174-328
Redbanded leafroller 1st flight peak	232-382
Spotted tentiform leafminer 1st flight peak	267-405
Spotted tentiform LM sapfeeding larvae present	343-601
Spotted tentiform leafminer mines forming	367-641
White apple leafhopper nymphs on apple	302-560
McIntosh bloom	344-415

Upcoming meetings

The UMass Extension Fruit Team will be offering a Zoom twilight meeting May 14 at 5:30 PM.

Please register in advance for this meeting:

https://umass-amherst.zoom.us/meeting/register/tJUpc-2vpzkoGdKe46hMgafzLPQBfK_MtJAP

After registering, you will receive a confirmation email containing information about joining the meeting.

We will share program details as soon as we have them all hammered out!

The way I see it...

Jon Clements

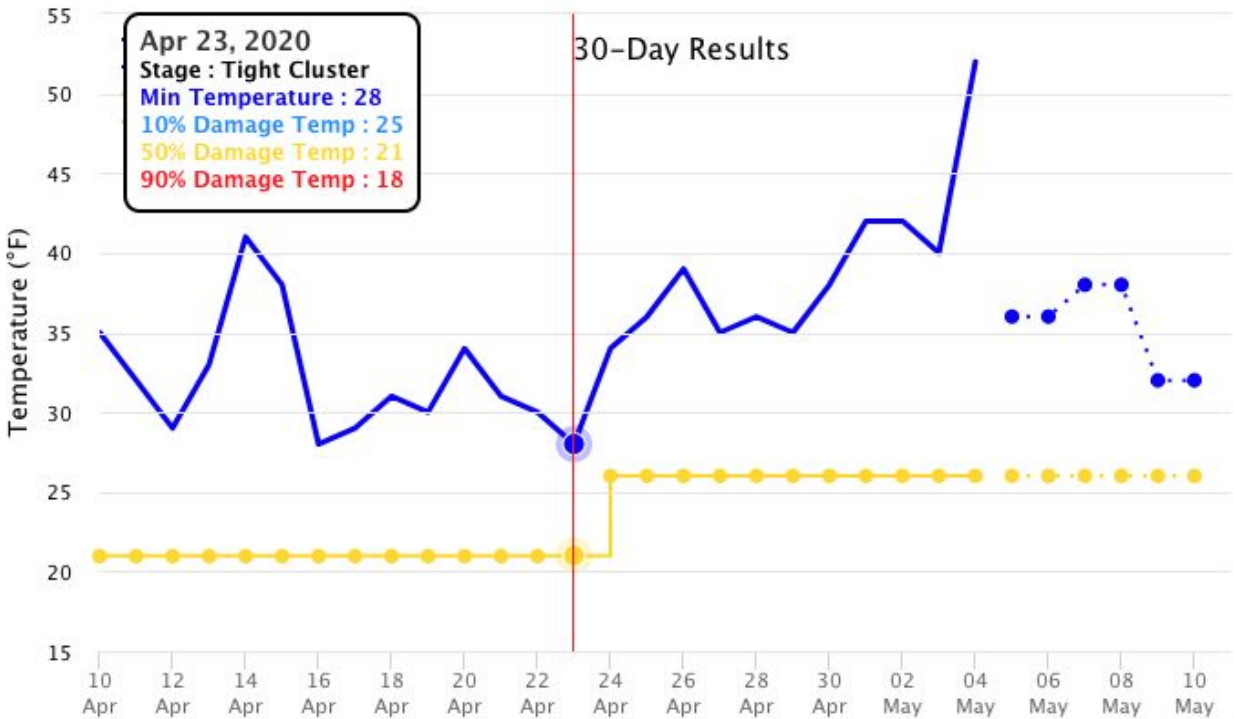
- What goes better together than apple bloom, Mother's Day, and yup!, you guessed it, cloudy cool weather. Some things never change. Stone fruits are in bloom and we've had a couple days of decent weather, but I can't say I have witnessed a plethora of pollinating insects on the bloom. But usually fruit set of peach is good as they are kind of self-pollinated, wind helps there, but cherries are another story. Fingers crossed. A reminder that ReTain can be used on cherry, pear, and even apple to increase fruit set.

Apply at one pouch per acre on apple from pink to bloom; one to two pouches per acre on cherry at popcorn to first bloom; and on pear at one pouch per acre from white bud to full bloom. On pear, ReTain may also be applied at the 10 mm stage to help prevent June drop.

- One more thing regarding the weather, I've had several reports of apple bud damage during freeze events which occurred over the period 16-23 April. Apple bud stage was tight cluster, and temperatures below 25 F. would have triggered some bud damage. In fact, it may have been colder than that. It'd be smart to check buds as we come into bloom for any kind of flower part damage, particularly the ovule/ovaries which would be blackened if damaged. Thinning decisions will have to be based on any damage observed and how the weather goes during bloom. Watch the weather forecast closely this upcoming Mother's Day weekend. Stay tuned.

Date ▲	Avg Air Temp (°F) ▶	Max Air Temp (°F) ▶	Min Air Temp (°F) ▶
04/08/2020	46.6	54.9	41.4
04/09/2020	42.7	46.4	39.0
04/10/2020	39.7	47.7	35.2
04/11/2020	40.5	49.6	33.8
04/12/2020	47.0	64.0	32.5
04/13/2020	55.9	59.4	47.1
04/14/2020	48.3	58.6	41.2
04/15/2020	42.2	51.8	34.2
04/16/2020	37.3	44.2	32.2
04/17/2020	39.6	48.6	28.6
04/18/2020	34.4	37.4	31.6
04/19/2020	46.7	60.8	31.3
04/20/2020	43.5	52.0	28.2
04/21/2020	40.2	64.9	28.0
04/22/2020	35.9	48.0	28.0
04/23/2020	41.2	53.2	22.5
04/24/2020	40.8	44.6	37.0

Near ground level, low temperature of 22 degrees observed on 23-April in a central MA orchard. Apples were tight cluster. Temperature was most likely a few degrees higher in the canopy. Some apple and strawberry flower bud damage observed.



[Climate Smart Farming Empire Apple Freeze Damage Potential](#) output on 5-May, 2020. Two things to note, the Min Temperature on Apr 23 says 28 F., but low 20's actually observed. Forecast for May 10 keeps temperatures above freezing, but that could change.

- Oh, soon going to be a good time to use Prohex-Cal on Honeycrisp at the full pink bud stage. Benefits include bitter pit reduction and fire blight suppression, but I would not use on trees that have not filled their space yet. Prohex-Cal (Apogee, with supplemental label and Kudos) at 6 oz. per 100 gallons dilute spray. Best applied when temperatures 65 F. or above, good luck on that.
- Oh yea, Happy Cinco de Mayo!

Insects

Jaime Piñero

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

[Period: 4.28 - 5.4](#)

Insect	Average captures/trap	Notes
RBLR	56	Pheromone-baited trap
OFM	17	Pheromone-baited trap
CM	1	Pheromone-baited trap
Spotted tentiform leafminer	65	Pheromone-baited trap
Tarnished plant bug	0.07	Unbaited white sticky cards
European apple sawfly	0	Unbaited white sticky cards
Plum curculio	9	Odor-baited black pyramid traps

The plum curculio just became active!

At the UMass Cold Spring Orchard, plum curculios (PCs) became active on **May 4th** (McIntosh trees were at the pink tree stage), as determined by means of odor-baited black pyramid traps. Eighteen PCs were captured on that day by two traps, for an average of 9 PCs per trap. No captures were recorded before May 4th.

The onset of PC immigration in 2020 (**202.8 DD** base 43°F – *calculated using the max-min method*) closely matches the 8-year average (2000-2005, 2018-2019) DD accumulation of **206.6 DD** (base 43°F). In 2018 and 2019, the first PCs showed up at 220 DD and 214.1 DD (base 43°F), respectively.

Over the next 10 days or so, PC activity is expected to be low - adults will be waiting until the next period of warm weather arrives!

First codling moth (CM) captured at the UMass Cold Spring Orchard.

Now that both OFM and CM have become active, this is the ideal time to deploy mating disruption for these two moth species, or to devise an alternative management plan.

Two types of mating disruption systems have been deployed in some commercial orchards for research purposes. One type targets CM and OFM. The second type targets obliquebanded leafroller and CM. In both cases, a single dispenser releases sex pheromones of two moth species to confuse males and prevent calling females from mating. The lures were deployed at a low density (32 dispenser per acre) and they are expected to last for the entire season (6 months). We will keep you updated on the results of this research.

Tarnished Plant Bug (TPB) activity continues to be low.

Over the past 7 days, only 3 TPB were captured in 42 unbaited sticky white traps at CSO. TPB activity is not expected to increase significantly over the next 7 days or so given that the daily temperatures are predicted to be in the high 50's.

Diseases

Liz Garofalo and Dan Cooley

It's that time of year again! Spores are flying fast and furious (in the traps) and I'm griping to anyone who will listen about how tedious spore counting is. We can expect the bank of mature spores to continue to grow (in significant numbers). We haven't hit peak scab season yet!

Apple scab weekly update:

	Ascospore Observation Method and Spore Count		
Date	Petri Plate Assay	Funnel Trap	Total Count
3/31/20	0	0	0
4/7/2020	0	21	21
4/14/2020	1	0	1
4/20/20	162	117	279
4/28/20	95	44	139
5/5/20	89	1421	1510

NEWA is estimating multi-day infection events across the state. These events are forecast to begin Wednesday and extend at least into Thursday (East Bridgewater) and through Friday (Deerfield and Belchertown).

Apple Scab Results for Deerfield

The Ascospore Maturity degree day model begins at 50% green tip on McIntosh flower buds. To recalculate ascospore maturity for your orchard, enter your green tip date:

Green Tip Date: [Click if greentip has not occurred](#)

Ascospore Maturity Summary

	Past	Past	Current	5-Day Forecast					Forecast Details
Date	5/3	5/4	5/5	5/6	5/7	5/8	5/9	5/10	
Ascospore Maturity	59%	65%	69%	72%	75%	78%	79%	81%	
Daily Ascospore Discharge	0%	0%	0%	14%	5%	14%	<1%	0%	
Cumulative Ascospore Discharge	43%	43%	43%	58%	63%	76%	76%	76%	

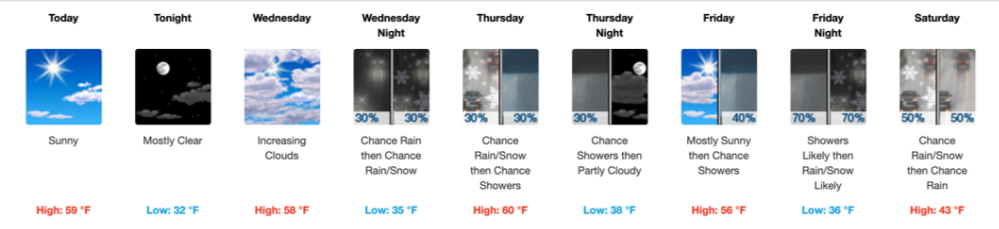
[Ascospore Maturity Graphs](#)

Infection Events Summary

	Past	Past	Current	5-Day Forecast					Forecast Details
Date	5/3	5/4	5/5	5/6	5/7	5/8	5/9	5/10	
Infection Events	No	No	No	Combined	Yes	Yes	No	No	
Average Temp (F) for wet hours	57	57	-	50	40	50	41	42	
Leaf Wetness (hours)	4	2	0	10	10	13	2	2	
Hours \geq 90% RH	0	0	0	0	7	0	0	0	
Rain Amount	0.00	0.00	0.00	0.08	0.10	Night 59% Day 66%	Night 51% Day 34%	Night 8% Day 30%	

Download Time: 5/5/2020 7:00

Extended Forecast for Deerfield MA



Deerfield, MA NEWA forecast for May 5 through May 10. The UMass Orchard scab forecast looks almost identical to the Deerfield forecast pictured above. The weather forecast pictured is from NOAA. NOAA is forecasting rain to begin late Wednesday night. More like Thursday morning. This timing is also what NOAA forecasts for Belchertown weather.

NEWA estimates two spore discharge events in the “yellow” category. One of these events is forecast for Wednesday, the other Friday, each are estimated to represent 14% of the over spore bank available for the primary scab season.

Apple Scab Results for East Bridgewater (CN Smith Farm)

The Ascospore Maturity degree day model begins at 50% green tip on McIntosh flower buds. To recalculate ascospore maturity for your orchard, enter your green tip date:

Green Tip Date: [Click if greentip has not occurred](#)

Ascospore Maturity Summary

	Past	Past	Current	5-Day Forecast					Forecast Details
Date	5/3	5/4	5/5	5/6	5/7	5/8	5/9	5/10	
Ascospore Maturity	66%	73%	77%	80%	82%	84%	86%	87%	
Daily Ascospore Discharge	0%	1%	0%	14%	5%	0%	0%	0%	
Cumulative Ascospore Discharge	51%	52%	52%	66%	70%	70%	70%	70%	

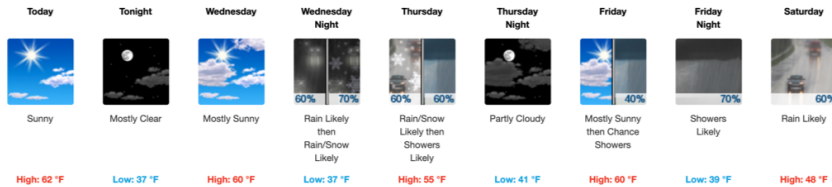
[Ascospore Maturity Graphs](#)

Infection Events Summary

	Past	Past	Current	5-Day Forecast					Forecast Details
Date	5/3	5/4	5/5	5/6	5/7	5/8	5/9	5/10	
Infection Events	No	No	No	Combined	Yes	No	No	No	
Average Temp (F) for wet hours	55	58	-	50	41	49	44	45	
Leaf Wetness (hours)	1	11	0	10	10	2	2	2	
Hours ≥90% RH	0	6	0	0	7	0	0	0	
Rain Amount	0.00	0.02	0.00	0.12	0.23	Night 49% Day 57%	Night 42% Day 33%	Night 6% Day 25%	

Download Time: 5/5/2020 7:00

Extended Forecast for East Bridgewater MA



East Bridgewater has only one discharge event forecast in the “yellow” category and a shorter infection period window estimated than Deerfield and Belchertown.

At this point in the season we are in a well known holding pattern. Watch the weather, stay covered up, kick-back if needed. Especially in high pressure blocks.



Apple blossoms just beginning to open in Franklin County.
May 5, 2020

Fireblight seems a little premature to discuss as the temperatures have not really been conducive to bacterial population growth. I did, however, see plenty of open blossoms today. Remember fireblight requires average temperatures of 65°F for populations to begin to build, then, once they have grown, a wetting event is needed to wash the bacteria down into the nectaries of newly opened flowers. You can use [NEWA's](#) fire blight risk forecast to see what things are looking like in your neighborhood.

Orchard Blight History:

Select the fire blight history in your orchard block of interest and the tool will calculate risk. Toggle orchard blight history to recalculate risk.

First blossom open date:

The *first blossom open date* above is estimated based on degree day accumulations. Enter the actual first blossom open date for your orchard block of interest and the tool will calculate the protection period during bloom more accurately.

Accumulated degree days (base 43°F) through 5/4/2020: 296 (0 days missing)

	Past	Past	Current	5-Day Forecast			Forecast Details	
Date	5/3	5/4	5/5	5/6	5/7	5/8	5/9	5/10
Cougarblight	-	-	Low*	Low*	Low*	Low	Low	Low
4-Day DH	-	-	0*	0*	0*	0	0	0
Infection Potential	-	-	Low	Moderate	Moderate	Low	Low	Low
EIP value	-	-	1	0	0	0	0	0
Wetness Events								
Rain Amount ?	0.00	0.00	0.00	0.00	Night 24% Day 20%	Night 72% Day 74%	Night 48% Day 8%	Night 20% Day 26%
Dew ?	No	No	No	Yes	Yes	No	No	No
Leaf Wetness (hours)	4	2	0	0	8	0	0	0
Hours >90% RH	0	0	0	0	6	0	0	0
RH max/min	75/23	60/36	65/24	82/35	100/33	68/31	81/46	79/41
Temp avg F	65	56	50	46	48	46	36	40

NA - data not available

[View Cougarblight Charts](#)

Download Time: 5/5/2020 14:00

* Indicates incomplete accumulation of the 4-day DH total. The DH value may reach "Caution", "High" or "Extreme" levels before spanning the 4-day accumulation cut-off time of Cougarblight.

Streptomycin Spray Date:

If you applied streptomycin before all flowers were open, enter the date of the streptomycin application to recalculate fire blight risk predictions.

Disease Cycle	Disease Management								
Blossom blight.	<p>Blossom blight risk predictions begin at first blossom open. If bloom in your orchard has not yet occurred, continue to check fire blight risk predictions and monitor bloom daily. Infection cannot occur without open blossoms.</p> <p>Most serious fire blight epidemics begin with infection during bloom. Certain antibiotics can effectively protect against blossom infections when applied shortly before or immediately after they occur. The Cougarblight and Infection Potential risk levels are based on the principle that</p> <p>(a) a certain number of heat units must accumulate during bloom for a threshold level of inoculum to be reached;</p> <p>(b) a wetting event is necessary after this point to wash the bacteria to their infection sites; and</p> <p>(c) the average temperature is above 60F.</p> <table border="1"> <tr> <td>Low risk</td> <td>If none of these conditions is met during bloom, risk is 'Low' and bactericides are not needed.</td> </tr> <tr> <td>Caution or Moderate risk</td> <td>If only the heat units are met during bloom, Cougarblight risk is 'Caution' and it is advisable to watch the forecast closely for continuing warm weather and rain. If only one of these conditions is met during bloom, Infection Potential risk is 'Moderate' and it is advisable to watch the forecast closely for continuing warm weather and rain.</td> </tr> <tr> <td>High risk</td> <td>If two conditions are met during bloom, risk is 'High' and forecasted wetting events should be carefully considered and a bactericide applied just before (or after) a rain.</td> </tr> <tr> <td>Extreme or Infection risk</td> <td>If all three conditions are met, risk is 'Extreme' or 'Infection' and an antibiotic should be applied just before (or after) a rain.</td> </tr> </table>	Low risk	If none of these conditions is met during bloom, risk is 'Low' and bactericides are not needed.	Caution or Moderate risk	If only the heat units are met during bloom, Cougarblight risk is 'Caution' and it is advisable to watch the forecast closely for continuing warm weather and rain. If only one of these conditions is met during bloom, Infection Potential risk is 'Moderate' and it is advisable to watch the forecast closely for continuing warm weather and rain.	High risk	If two conditions are met during bloom, risk is 'High' and forecasted wetting events should be carefully considered and a bactericide applied just before (or after) a rain.	Extreme or Infection risk	If all three conditions are met, risk is 'Extreme' or 'Infection' and an antibiotic should be applied just before (or after) a rain.
Low risk	If none of these conditions is met during bloom, risk is 'Low' and bactericides are not needed.								
Caution or Moderate risk	If only the heat units are met during bloom, Cougarblight risk is 'Caution' and it is advisable to watch the forecast closely for continuing warm weather and rain. If only one of these conditions is met during bloom, Infection Potential risk is 'Moderate' and it is advisable to watch the forecast closely for continuing warm weather and rain.								
High risk	If two conditions are met during bloom, risk is 'High' and forecasted wetting events should be carefully considered and a bactericide applied just before (or after) a rain.								
Extreme or Infection risk	If all three conditions are met, risk is 'Extreme' or 'Infection' and an antibiotic should be applied just before (or after) a rain.								

This disease forecasting model was co-authored and developed in collaboration with Dr. Kerik Cox in the Department of Plant Pathology and Plant-Microbe Biology at Cornell University in Geneva, New York. Please [contact Dr. Cox](#) with any questions regarding the scientific content and recommendations delivered in model outputs.

Disclaimer: These are theoretical predictions and forecasts. The theoretical models predicting pest development or disease risk use the weather data collected (or forecasted) from the weather station location. These results should not be substituted for actual observations of plant growth stage, pest presence, and disease occurrence determined through scouting or insect pheromone traps.

After inputting your first open blossom date and selecting your site's fire blight history from the drop-down menu, you will get an output like this. For the above location, over the weekend, conditions were favorable for epiphytic bacterial colony growth, but since bloom date is entered for May 4, the model does not show infection potential. Wednesday night's and Thursday's rain forecast is promoting a moderate to low warning... **However**, given the potential for snow in the forecast, I'd say the Strep can stay in the shed for now. But, you already knew that!

Horticulture

Thinning suggestions for the first full week of May

Duane Greene

It is predicted that temperatures will revert back to lower than average this coming week and the long range forecast for May also suggests that temperatures will be below average. If trees experience lower than normal temperature during a large portion of the thinning season, adequate thinning with available thinners will be especially difficult. While it is dangerous to treat weather forecasts as facts, contingency plans at bloom and petal fall are appropriate to reduce the need to aggressively thin later.

I am a very strong supporter for somewhat aggressive thinning at both bloom and petal fall. It is reasonably safe to thin at these times. This may be especially true this year where we may face the possibility of having unfavorable temperatures during the 7 to 14 mm. fruit size stage. There are three hormone type thinners that can be used now: NAA, NAD and ethephon. Sometimes Promalin is used but the results are much less reliable. Carbaryl, an insecticide, may also be used starting at petal fall, after the bees have been removed from the orchard. It is often applied with either NAA or NAD.

NAA - This is a very good thinner. I recommend it being applied at a rate of 10 to 12 ppm early in the season. When applied at either bloom or petal fall NAA is not nearly as potent of a thinner as when applied at the 10-14 mm fruit size stage. NAA can promote additional flower bud formation.

NAD - This is a thinner that is very similar structurally to NAA but it is a much less potent thinner. I recommend its application at 50 ppm which is the maximum rate allowed on the label. It may be applied at bloom and again at petal fall. Consideration should be given to including carbaryl in the petal fall spray with NAD to get additional fruit thinning.

Carbaryl - This has been a standard thinner used at petal fall for many years in New England. It is a somewhat weak thinner. Its popularity is due in part to the belief that it is a safe thinner in that it does not over-thin. I do not think that this is the year to depend on carbaryl to do all of your thinning.

Ethephon - This is a hormone spray that seldom is considered for use as a thinner. It conjures up thoughts of overthinning, but in my experience it is relatively safe. I recommend that application of about 300 ppm (1 pt/100 gal). Some cultivars such as Golden Delicious may overthin but this is not the case for most cultivars. An added benefit of early application of ethephon is that it can enhance flower bud formation.

Caustic Thinners

The use of caustic bloom thinners has not been very popular in New England for several reasons including: lack of reliable weather forecasts during the bloom period (adequate pollination), the possibility of frost after application, lack of consistency and phytotoxicity. It has been my observation that for a caustic thinner to be effective at bloom, it must cause some phytotoxicity. The availability of the pollen tube growth model makes using this group of thinners more dependable and safer to use. If cool temperatures persist caustic thinners are an excellent choice. There are several choices available including:

ATS- Ammonium thiosulfate (2-3 gal per 100 gal)
Liquid Lime sulfur 2-4 gal per 100 gal
Liquid Lime sulfur 1.5 -2 gal per 100 gal plus oil (1.5-2 %)

The Pollen Tube Growth Model and using caustic bloom thinners on apples

Jon Clements

The Pollen Tube Growth Model (PTGM) is available on NEWA (ptgm.newa.cornell.edu). It models the rate of fertilization of an apple flower after pollen is received by the stigma and the pollen tube grows down the style to the ovary/ovule and fertilization occurs. The pollen tube growth rate is dependent on temperature and style length, the latter being dependent on variety and the current growing season.

Using the PTGM to accurately time caustic bloom thinning sprays — typically lime sulfur or ATS — is important. It's more likely to give the desired amount of bloom thinning as opposed to applying bloom thinners at a particular state of bloom, for example 80%. And early thinning — at bloom for example — results in more consistent annual cropping and fruit size and quality.

To use the PTGM go to NEWA (newa.cornell.edu), Crop Management, Apple Pollen Tube Growth. You will need to add a Block, specify a block name, select an apple variety (currently only Fuji, Gala, Golden Delicious, Granny Smith, Honeycrisp, Delicious, and Cripps Pink are supported), state, and NEWA station. Ideally to use the PTGM you have a NEWA station or can at least specify one close by where the temperature does not differ that much from your location.

After setting up a Block, to run the model you have to set a start date which is when the majority of king flowers are open, and set the style length. There are two options: The first option is to

insert the average style length. The second option is to insert the style length measurements, the PTGM can calculate the average. Style length has to be measured from the tip of the style to the very base, and multiple measurements (25) should be made to get a good idea of average style length. This is important for the PTGM to be accurate.

Once all above is set up you run the PTGM, and then the output shows the % of pollen tube growth. It has to be checked frequently, because it is presumed that when close to 100% it is time to apply a caustic bloom thinner. If that is done, the PTGM can then be reset to help determine when a second caustic bloom thinner spray can be applied (if you don't get cold feet).

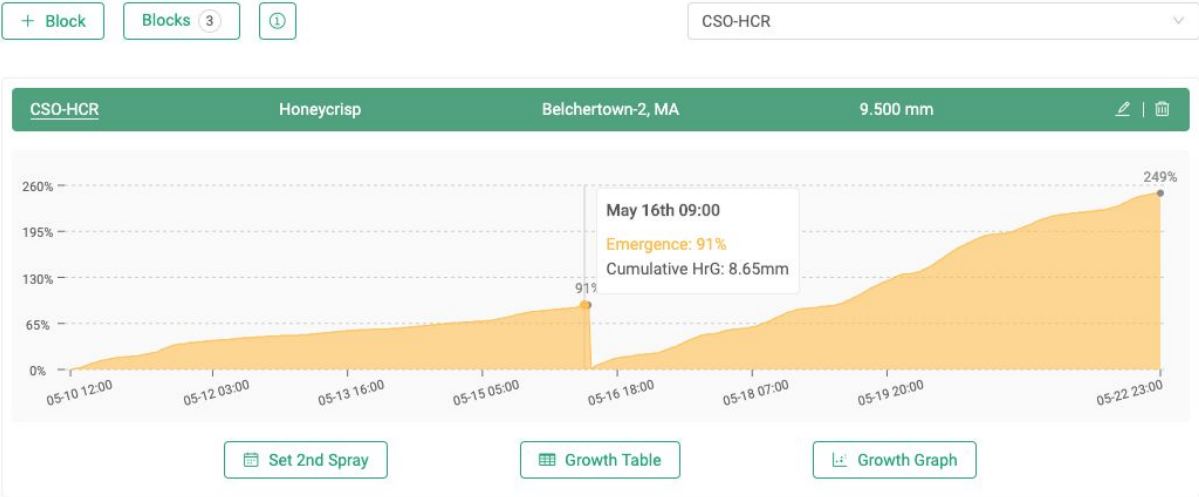
There are two choices for a caustic boom thinner, ATS (Ammonium ThioSulfate) and lime sulfur. ATS is a bit finicky, and perhaps a safer option. But lime sulfur — applied as a scab fungicide per the label of course — when indicated by the PTGM can be a reliable bloom thinner. Many acres of Washington apples are sprayed with lime sulfur as a bloom thinner. You generally need a rate of 2 to 4% lime sulfur in a dilute spray to do the job. Oil can be added for even more efficacy, however, I prefer to just use lime sulfur. Lime sulfur burns the style and petals preventing fertilization of open flowers if the pollen tube has not reached the ovule/ovaries. If flower petals are notably damaged, you can presume you did the job. Lime sulfur inhibits photosynthesis for a time too, so that may help reduce initial fruit set.

Bloom thinning can be particularly helpful with biennial varieties like Honeycrisp, because it will start the flower bud initiation process for next year early. If frost/freeze injury is evident, bloom is light, or the weather has not been conducive to bee activity, bloom thinning might be best avoided. But caustic bloom thinning is not perfect, you may need to follow up with a traditional chemical thinner application after assessing the initial fruit set.

[PTGM presentation on UMass Fruit Team YouTube](#) by Jon Clements during UMass Fruit Team Zoom Twilight Meeting, 30-April, 2020



Measuring style length for use in the PTGM.



PTGM output for 2019, showing that the time for caustic bloom thinner is May 16 at 9 AM.



Honeycrisp flowers after caustic bloom thinner application of lime sulfur at 4%

Small Fruit Update

Sonia Schloemann

PYO Update: MDAR has released their **PYO Guidance Bulletin** this week. To see the full text click [here](#). An informational call-in forum is scheduled for Monday May 11th at 1:00pm. Go to the top of this HF issue for all the log-in information. If you have questions, contact me at sgs@umass.edu.

Crop Conditions:

Wet weather conditions last week left fields waterlogged and made tractor operations, including spraying, difficult in some places. Frequent wetting periods have increased the likelihood of disease infections on leaf and blossom tissue and wet soil has made root disease problems more likely where drainage is poor. Keep an eye on all these things as the season progresses.

Warm weather over the weekend accelerated plant growth making up for the slow growth in April. Now, more cold weather is predicted for later in the week, especially in higher elevations, and this may cause damage in crops with open flowers. **June-bearing strawberries** are growing vigorously now with flower trusses almost visible in the crowns. Row-covered fields are advanced and some are nearing bloom. Overwintered day-neutral fields are near or in bloom. This means that growers must have their frost protection system in place and ready to go if it is needed later this week. See [last week's IPM Berry Blast](#) for a great guest article on that subject. **Brambles** are leafing out with a couple of inches of shoot growth showing on most varieties. Flower buds are visible in early florican varieties. Blackberries seem to have made it through this mild winter in pretty good shape and look to be set up for a good crop this year. Watch new growth for signs of feeding by overwintered [Raspberry Fruit Worm](#) beetles. Also, this is the time of year that [Orange Rust](#) becomes visible on Blackberries, Black Raspberries and Purple Raspberries. **Blueberries** are nearing Pink and growers should make sure to have their pollination services (i.e., honey bee or bumble bee hives), in place soon. Mummy Berry continues to be a major concern since the weather this spring has been very conducive to Shoot Strike infections. And, Winter Moth (WM) larvae are now active in Blueberries (and Apples), and pre-bloom sprays are recommended where populations are high. This will be a good week to clean WM up if there are high numbers in your blueberries. Other notable berries, **Elderberries** are well leafed out and flower heads are clearly visible. **Haskaps/Honeyberry** have been in bloom a long time and many made it through the cold weather 14+ days ago. Fruit should be setting soon.



Figure 1) Strawberry crowns w/ flower trusses almost visible (left); Red raspberry shoot growth at 1-2" (center); 'Triple Crown' Blackberry shot growth at 1-2" (right). **Photos:** S. Schloemann 5/1/20



Figure 2) Blueberry buds nearing pink stage (left); Gooseberries pre-bloom to bloom (center); Black Currants pre-bloom (right). **Photos:** S. Schloemann 5/1/20



Figure 3) Red Currants in early bloom (left); Elderberry shoot growth with blossom heads visible (center); Haskap/Honeyberry late bloom (right). **Photos:** S. Schloemann 5/1/20

Hawkeye's corner (notes from the field)

Liz Garofalo

Finally back out in the orchards! So, here is 2020's first installment of Hawkeye's corner. Or, perhaps more to the point "harbinger of sorrow". Insects and weeds, and even some fungi are diggin this warming weather, almost as much as I am!

Usually, in nature, the smaller version of an organism is cute. Puppies, kittens, even small humans are pretty ok. Moths on the other hand, and aphids for that matter, have no such redeeming qualities. They pretty much just suck... Or chew. Either way, who needs 'em??

Petal fall applications (90% petal fall of your earliest blooming variety) will knock these back.



Left: Green pug moth larvae (note the dark stripe down the center of its “back”) chewing on young apple leaves. Right: Green aphid colony in early stages of growth. Note the large one in the center and two-three smaller ones around it.

In pear news, pear psylla eggs and nymphs (both of which are wicked tiny, btw) are showing up in orchards.



Close up of pear psylla eggs. To the naked eye, these appear as exceptionally small yellow dots, akin to pollen grains. That’s if you can see them with the naked eye at all. A 10x hand lens will make these easier to see- still tiny and yellow. The orange dot is not visible with out strong magnification.

The good news is, you only have to worry about managing psylla in your orchards, no terror dogs have been observed...yet (I mean, given the way 2020 is going so far, who knows what we

will see next?!?!). If you have psylla issues, wait till petal fall to make an insecticide application effective against psylla. Actara, Delegate and Esteem are all highly effective. Check out the [New England Tree Fruit Management Guide](#) for more options. Remember, you only get two Centaur applications per season. I suggest holding off on that material for a time when you really need it.



Left: 1st instar pear psylla nymph (May 5, 2020). Right: Zuul gate keeper of Gozer (Ghostbusters). Am I the only one who sees the resemblance? They're both cute in a vicious destroy all they touch kind of way.

In the weeds? With Oriental bittersweet around the orchard, you are bound to be! This noxious invasive weed continues to be a problem in orchards and other perennial cropping systems. Cut older vines back to prevent them from choking trees. It's important to get this done sooner than later as you won't be able to see the vines as easily once the trees leaf out.



Oriental bittersweet buds begin to open.

I may report on insects and weeds, but fungi is where the fun is at! Mushrooms like these (pictured below) show up after something has already died and are just hanging out breaking down organic material. These are not pathogens, not even secondary ones generally, but, they may indicate a larger issue, like a decaying part of a root system. If you see these, it's a good idea to take a look at the overall health of the trees nearby.



Guest article

No guest article this week...

Facebook Me



Noah Roth ▸ MAIA Member Group

10 hrs · 🌐



200 ludacrisp on G11 that will be headed and turned into double leaders! Thanks **Bill Pitts**



Andre Tougas, Mark Boyer and 10 others



Like



Comment

Useful links

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

[UMass Extension Fruit Team YouTube Channel](#)

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/jmccextman>) and Facebook (<http://www.facebook.com/jmccextman>)

[Acimovic Lab at Hudson Valley](#)

[Peter Jentsch's Blog](#)

The next Healthy Fruit will be published on or about May 12, 2020. In the meantime, feel free to contact any of the UMass Fruit Team if you have any fruit-related production questions.

Thank you sponsors...



[Orchard Equipment and Supply Company, Inc. Conway, Massachusetts](#)



[Nourse Farms](#)



[New England Vegetable & Berry Growers' Association](#)



[Massachusetts Fruit Growers' Association](#)