



UMass  
Extension

# Healthy Fruit

Volume 27, 2019

Prepared by the University of Massachusetts Fruit Program

## Healthy Fruit, Vol. 27, No. 7, May 21, 2019

Jon Clements, Author (unless otherwise noted) and Editor



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### CURRENT DEGREE DAY ACCUMULATIONS

UMass Cold Spring Orchard, Belchertown, MA	20-May
Base 43 (NEWA, since March 1)	452
Base 50 (NEWA, since March 1)	204



## CURRENT BUD STAGES

Current bud stages. May 20, 2019, UMass Cold Spring Orchard, Belchertown, MA

				
McIntosh apple Petal fall	Honeycrisp Late bloom - petal fall	Bartlett pear Petal fall - fruit set	Redhaven peach Fruit set	Regina sweet cherry Late bloom

More 2019 bud stages [here...](#) This will be the last CURRENT BUD STAGES for 2019. Yea!



## UPCOMING PEST EVENTS

Coming events	Degree days (Base 43)
Codling moth 1st catch	400 to 564
European red mite 1st summer eggs	447 to 555
Lesser appleworm 1st flight peak	364 to 775
Lesser peachtree borer 1st catch	476 to 668
Oriental fruit moth 1st flight peak	331 to 533
San Jose scale 1st catch	440 to 620
Spotted tentiform LM sapfeeding larvae present	343 to 601

Spotted tentiform leafminer mines forming	367 to 641
White apple leafhopper nymphs on apple	302 to 560
McIntosh petal fall	439 to 523



## UPCOMING MEETINGS

**May 23 (Thursday).** Small Fruit Twilight Meeting, Narrow Lane Orchard, 213 Narrow Lane, North Kingstown, RI. 5:30 PM. No pre-registration necessary, meeting is free with \$40 per farm RIFGA membership, or \$20 per person. Light dinner provided. 2 pesticide credits available. Jaime Pinero, UMass, will speak about his SWD research and management options. Sonia Schloemann, UMass, will speak about pruning blueberries and maybe blackberries too!

**June 4 (Tuesday).** CT Pomological Society Twilight Meeting and Field Day. Beginning at 5 PM with the field day and farm tour, followed by dinner and meeting. Belltown Hill Orchards, 483 Matson Hill Rd, S. Glastonbury, CT. The Preli family grows tree fruit, berries, grapes and Christmas trees. 2.5 Pesticide recertification credits available. Speakers include Dr. Jaime Pinero, UMass, talking about mating disruption & new products, plus his work with SWD; Matt Gocłowski, CT DEEP, grass carp permitting process; George Hamilton, UNH, sprayer calibration demo; and more. Many vendors. Free event – Join us.



## THE WAY I SEE IT

I don't have much to say. (Drum roll please.) Thanks to everyone who came to the Fruit Twilight Meetings last week. I am on to assessing apple fruit set and thinning this week. Later this week looks ideal for a petal fall thinning spray. I am going to be using the Malusim app to measure fruit growth and help determine my chemical thinning strategies. I used the app last year with good success. I am doing Pazazz, Fuji, Gala, and Honeycrisp trees. (Higher quality and value apples where thinning decisions are more crucial than let's say McIntosh or Macoun. Now I did it...) I'd like to know if anyone else is going to use the app? If so, let me know if I can be of assistance. I am contemplating putting together a short tutorial on how to use Malusim, and may send that out under a separate Healthy Fruit e-mail. BUT, be sure to check out my comments on the v2019 of the NEWA Apple Carbohydrate Thinning Model in Horticulture. Good luck out there...at least we are getting a break from the rain!



## NEW ENGLAND TREE FRUIT MANAGEMENT GUIDE

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 updated for 2019 -- an online edition of the **New England Tree Fruit Management Guide**. 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>. Finally, if you really, really want a printed version, order here:

<https://www.umassextensionbookstore.com/products/29>.



## INSECTS

Jaime Pinero

### **Plum curculio (PC) activity update.**

The comparatively warm temperatures of the last couple of days (and for the next few days) are driving PC into orchards, so a full-orchard insecticide spray once *all* of the bees and flowers are gone will be warranted, PC is the insect to which we can attribute the highest losses in apple during the petal fall period.

### **Spotted Wing Drosophila (SWD) has become active!**

For the past four weeks we have been monitoring for SWD in five locations in Western MA. Each location has three monitoring traps. For two of those traps we are using commercial lures (Scentry and Alpha Scents) whereas the third trap was baited with grape juice at a 1:3 ratio (50 ml of grape juice in 150 ml of water). The first SWD of the season was found on May 17th at the UMass Cold Spring Orchard in a monitoring trap baited with diluted grape juice. At this location, the three traps were hang from a cherry tree. Insect captures recorded on **May 17th** according to bait type at CSO are presented in the table below.

Lure/bait	Male SWD	Female SWD	Other Drosophilids
<u>Scentry SWD lure</u>	0	0	57
<u>AphaScents lure</u>	0	0	74
Diluted grape juice	1	0	0

This week we will continue to service traps to confirm which bait is best at capturing the first SWD of the season.

Because SWD reproduces so quickly under optimum conditions, the first catch information is vital to activate pest management programs to prevent rapid population increases and potential infestations on a farm. However, the above information doesn't mean that crops need to be protected against SWD attack at this moment as most crops are not at a susceptible stage.



## DISEASES

Liz Garofalo

What was that I said last week about no **fireblight**?? With the temperatures warming and many of your orchards still in bloom, the risk of fireblight went from non-existent to OMG overnight. With Monday's weather being a little swampy (muggy - rainy and warm), we are just coming out of what is bound to be an infection period for fireblight. Moving forward, it's a good idea to use a Decision Support System (DSS) like NEWA, for example, to provide guidance as to when an infection is looming in the forecast.

While any forecast, pest or weather, will be more accurate if you have site specific weather data, you can also access NEWA stations nearby your location for a general sense of risk, if you don't have access to your own station. Following is a basic, step-by-step guide to using NEWA for fireblight management.

After typing [newa.cornell.edu](http://newa.cornell.edu) into your web browser, you should find yourself on the home page:

NEWA - Home Page  
Not Secure | newa.cornell.edu

Cornell University

New York State Integrated Pest Management Program  
NEWA Network for Environment and Weather Applications

Search Cornell

Website status:  
No issues reported  
5/20/2019 1:30:14 PM

Weather Data Pest Forecasts Station Pages Crop Management Weather Stations Help

1 → Apple Diseases ←

National Weather  
Enter "City, ST"  
About NEWA  
About NEWA  
Contact Us  
NEWA Press Release  
Vision Statement  
Your NEWA Blog  
Other Weather Data Sources  
6-10 Day Outlook (NWS)  
National Doppler Radar Sites  
National Weather Service  
NWS Graphical Forecasts  
NWS State Data  
Weather Activity Planner  
Weekly Weather & Crop Bulletin (USDA)  
About Other Weather Data Sources  
Other Pest Forecast Tools

Welcome to the NEWA Home Page

Click on a map marker to go to the weather station's home page.

Map

From here, you click on the “Pest Forecasts” drop down menu and 1) select the model category of interest. Here, you see “Apple Diseases” highlighted. Next you will...



Weather Data Pest Forecasts Station Pages Crop Management Weather Stations Help

Apple Diseases

### NEWA Apple Disease Models

2 Select a disease: Fire Blight

3 State: Massachusetts

4 Weather station: Belchertown-2

Date of Interest: 5/20/2019

5 Calculate

Map data ©2019 Google 50 km Terms of Use

NEWA

Accuracy of the weather data is the responsibility of the owners of the weather station instruments. NEWA is not responsible for accuracy of the weather data collected by instruments in the network. If you notice erroneous or missing weather data, contact NEWA and we will contact the owner of the instrument.

Powered by ACIS Northeast Regional Climate Center

2) Select the disease you are interested in. 3) Select your state. 4) Select your weather station, or the one nearest to you. 5) Click “Calculate”. (Note: the current day’s date will automatically populate in this field, you can access historical data by selecting the date drop down menu and choosing a past date.) The next screen will show you the pest forecast, however, you still need to 6) Select your orchard fireblight history form the drop down menu and 7) Make sure to enter *your* first open blossom date, the bud stage date estimated by the model is often off.

Weather Data
Pest Forecasts
Station Pages
Crop Management
Weather Stations
Help

Apple Diseases

### NEWA Apple Disease Models

Select a disease:

Fire Blight

State:

Massachusetts

Weather station:

Belchertown-2

Date of Interest:

5/20/2019

Calculate

MapResultsMore info

#### Fire Blight Risk Predictions for Belchertown-2

No fire blight in your neighborhood last year.
Fire blight occurred in your neighborhood last year.
Fire blight is now active in your neighborhood.

Orchard Blight History
Select the fire blight history in your orchard block of interest.

First blossom open date: 5/7/2019
Click if bloom has not occurred

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 5/19/2019: 490 (0 days missing)

	Past	Past	Current	5-Day Forecast					Forecast Details
Date	5/18	5/19	5/20	5/21	5/22	5/23	5/24	5/25	
Cougarblight 4-Day DH	Low 143	Caution 267	High 457	High 464	High 410	High 332	Low 147	Caution 214	
Infection Potential EIP value	Moderate 28	High 59	Infection 110	High 107	Low 90	Low 69	Moderate 23	Moderate 42	

Wetness Events

Rain Amount	0.00	0.00	0.11	0.00	Night 1% Day 7%	Night 30% Day 41%	Night 23% Day 26%	Night 36% Day 38%
Dew	No	Yes	Yes	No	No	No	No	No
Leaf Wetness (hours)	0	0	13	0	0	0	3	0
Hours >90% RH	0	2	12	0	0	0	0	0
RH max/min	86/28	93/55	98/54	78/38	70/33	82/51	90/61	84/54
Temp avg F	60	64	72	55	58	59	58	63

NA - data not available
[View Cougarblight Charts](#)
Download Time: 5/20/2019 13:00

Accuracy of the weather data is the responsibility of the owners of the weather station instruments. NEWA is not responsible for accuracy of the weather data collected by instruments in the network. If you notice erroneous or missing weather data, contact NEWA and we will contact the owner of the instrument.

Powered by  
  
Northeast Regional  
Climate Center

Now you have a fireblight infection risk forecast. One final (and super handy) thing you can input is the date of your last Streptomycin application, which will recalculate your risk in the model.



[Weather Data](#)
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[Weather Stations](#)
[Help](#)

Apple Diseases

Fire Blight

State: Massachusetts

Weather station: Belchertown-2

Date of Interest: 5/20/2019

Calculate

map

resources

future info

Fire Blight Risk Predictions for Belchertown-2

Orchard Blight History: Fire blight occurred in your neighborhood last year.

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: 5/7/2019

Click if bloom has not occurred

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 5/19/2019: 490 (0 days missing)

	Past	Past	Current	5-Day Forecast		Forecast Details	
Date	5/18	5/19	5/20	5/21	5/22	5/23	5/24
Cougarblight 4-Day DH	Low	Caution	High	High	High	Low	Caution
Infection Potential EIP value	28	59	107	107	90	23	42

Wetness Events

	0.00	0.00	0.11	0.00	Night 1% Day 7%	Night 30% Day 41%	Night 23% Day 26%	Night 36% Day 18%
Rain Amount	0.00	0.00	0.11	0.00	No	No	No	No
Dew	No	Yes	Yes	No	No	No	No	No
Leaf Wetness (hours)	0	0	13	0	0	0	3	0
Hours >90% RH	0	2	12	0	0	0	0	0
RH max/min	86/28	93/55	98/54	78/38	70/33	82/51	90/61	84/54
Temp avg F	60	64	72	55	58	59	58	63

NA - data not available

View Cougarblight Charts

Download Time: 5/20/2019 13:00

Streptomycin Spray Date: Click to enter 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

Blossom blight.

Disease Management

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. 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

(a) a certain number of heat units must accumulate during bloom for a threshold level of inoculum to be reached;

(b) a wetting event is necessary after this point to wash the bacteria to their infection sites; and

(c) the average temperature is above 60F.

**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 one of these conditions is met during bloom, Cougarblight risk is 'Caution' and it is advisable to watch the forecast closely for continuing warm weather and rain. 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.

NEWA

Accuracy of the weather data is the responsibility of the owners of the weather station instruments. NEWA is not responsible for accuracy of the weather data collected by instruments in the network. If you notice erroneous or missing weather data, contact NEWA and we will contact the owner of the instrument.

ACS

Accuracy of the weather data is the responsibility of the owners of the weather station instruments. NEWA is not responsible for accuracy of the weather data collected by instruments in the network. If you notice erroneous or missing weather data, contact NEWA and we will contact the owner of the instrument.

If you scroll down the page, you will see a brief description of management options as well as a key explaining the significance of the colors in the forecast chart. And there you have it, NEWA in a nutshell! As you can see, Monday the 20th, was estimated by the model to have been an infection period (indicated in red). There are many more details you can look at in the output, including rainfall, leaf wetness and relative humidity.

HORTICULTURE

## Chemical thinning suggestions for the coming week

Duane Greene

After enduring many days of cool, cloudy and wet conditions the weather forecast for the coming week offer a reasonable opportunity to apply chemical thinners with at least the hope that the applications may provide some thinning activity. It is difficult to predict the stage of flower/fruit development since it varies quite a bit this spring. However, I am assuming that most are at some stage between bloom and late petal fall. Because of the poor thinning weather we experienced last week, I think that all should consider applying a petal fall spray. It is an opportunity that you should not miss. I do not consider petal fall to be a specific time but rather a period of time after petals start to fall, and this may last for 5-6 days. Application during this prime period rarely if ever results in over thinning. Being somewhat aggressive at this time seems the prudent thing to do. A safe application would be NAA at 10 to 12 ppm plus carbaryl. I have never over-thinned using this combination. Other petal fall thinning sprays that are worthy of considering are Amid-Thin at 8 oz/100 gal plus carbaryl, NAA at 12 to 15 ppm and Ethrel at

300 to 400 ppm. Result using carbaryl alone probably will be disappointing unless used on very easy to thin cultivars such as Cortland or Pink Lady (Cripps Pink). Watch fruit growth very carefully. When fruit grow to 5 to 6 mm then seek guidance provided on the NEWA carbohydrate thinning model. Negative values offer an opportunity to thin when fruit starts to grow.

## Comments on some changes to the NEWA Apple Carbohydrate Thinning v2019

Jon Clements

If you are going to use the NEWA Apple Carbohydrate Thinning model, you should be looking at v2019.

The screenshot shows the Cornell Apple Carbohydrate Thinning Model v2019 web interface. At the top is a navigation bar with links: Weather Data, Pest Forecasts, Station Pages, Crop Management, Weather Stations, and Help. Below this is a dark blue header with the text "Apple Carbohydrate Thinning". A dropdown menu is open, showing a list of tools: Apple Carbohydrate Thinning, Apple CHO Thinning v2019, Apple Pollen Tube Growth, Apple Irrigation, Apple Evapotranspiration, Apple Frost Risk, Growing Degree Days, Degree Day Calculator, Turf Evapotranspiration Map, Soil Temperature Map, Other Crop Tools, and Critical Temperatures. The main content area has a form on the left with fields for "State:" (Massachusetts), "Weather station:" (Northboro), and "Select Date:" (5/21/2019), with a "Continue" button. To the right of the form is a map of New Hampshire and Vermont, showing various locations marked with airplane icons. The map includes labels for "Saratoga Springs", "Green Mountain National Forest", "Concord", "Manchester", "Portsmouth", and "Augusta".

I'd like to point out one feature in particular of this updated version of the Apple Carbohydrate Thinning Model, that is you have to enter bloom date, which is used as a "biofix" for a degree-day model that helps predict the "sweet spot" for applying a chemical thinner.

## Cornell Apple Carbohydrate Thinning Model

State:  
Massachusetts

Weather station:  
Northboro

Select Date:  
5/21/2019

Continue

MapResultsMore info

**Apple Carbohydrate Thinning Model for Northboro**

Green tip and bloom dates below are estimated from growing degree day accumulations. Enter your orchard's dates to fine-tune results. Click "Calculate" to obtain results.

Green tip date	Bloom date	Calculate
4/14/2019	5/10/2019	Calculate

**Note from the model developer (March 22, 2018):**


- The apple carbohydrate model simulates the response to weather of trees that are healthy with normal vigor and bloom, no significant water, nutrient or winter or spring freeze stress, and no significant carry-over stress from a previous year that will change tree responses. We are less confident in the model if temperatures are extremely cold or hot. Each orchard is unique, so use this tool, as any other, in the context of your own experience. For more information click on the "More Info" tab.

This “sweet spot” is based on many years of Terence Robinson’s research showing that most often the best chemical thinning results were observed when thinners were applied 200 to 250 degree days Base 4 degrees Centigrade after bloom. Here is (as of Tuesday morning, 5/21) the result from Northboro.

[Map](#)[Results](#)[More info](#)

## Apple Carbohydrate Thinning Model for Northboro

Change green tip and/or bloom date and click "Calculate" to recalculate results.

Green tip date	Bloom date	Percent Flowering Spurs	Calculate
4/14/2019	5/10/2019	51-75% 	

### Note from the model developer (March 22, 2018):

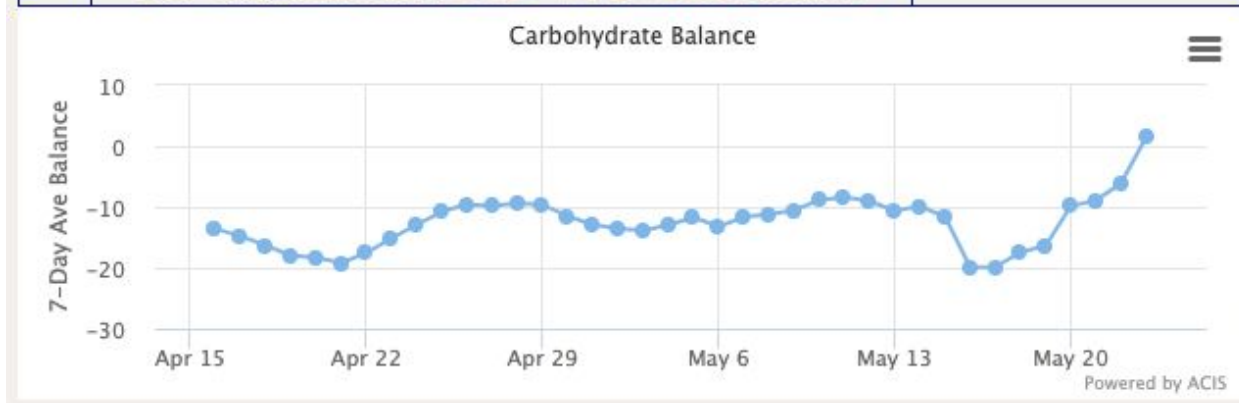
• The apple carbohydrate model simulates the response to weather of trees that are healthy with normal vigor and bloom, no significant water, nutrient or winter or spring freeze stress, and no significant carry-over stress from a previous year that will change tree responses. We are less confident in the model if temperatures are extremely cold or hot. Each orchard is unique, so use this tool, as any other, in the context of your own experience. For more information click on the "More Info" tab.

## Apple Carbohydrate Thinning Model Results

Date	Max Temp (°F)	Min Temp (°F)	Solar Rad (MJ/m2)	Tree Carbohydrate Balance (g/day)		Accum 4°C Degree Days (since bloom)	Thinning Recommendation
				Daily	7-Day Ave		Red=Danger of overthinning; Yellow=Caution; Green=Low Risk of overthinning)
4/14	70	54	12.0	-13.81	-	0.0	-
4/15	63	39	7.8	-9.78	-	0.0	-
4/16	54	36	19.9	-7.39	-13.59	0.0	-
4/17	58	35	20.0	-8.59	-14.81	0.0	-



5/19	76	47	14.4	-25.64	-16.35	78.1	Increase Chemical Thinning Rate by 30%
5/20	81	65	15.9	-63.2	-9.82	96.8	Increase Chemical Thinning Rate by 30%
5/21	65	51	19.9	-0.97	-8.91	107.3	Increase Chemical Thinning Rate by 30%
5/22	68	48	25.6	13.84	-6.07	117.7	Increase Chemical Thinning Rate by 30%
5/23	68	51	19.7	0.26	1.53	129.0	Increase Chemical Thinning Rate by 30%
5/24	66	45	16.7	11.26	-	138.1	-
5/25	69	50	18.0	2.12	-	149.3	-
5/26	75	55	22.6	-5.83	-	163.7	-
5/27	74	57	21.1	-9.96	-	178.3	-
Text color represents expected thinning efficacy: Blue=Mild; Green=Good; Orange=Very good; Red=Excessive							



Note that on 5/27, next Monday, based on the current forecast -- which could change of course! -- accumulated DD's (Base 4 degrees C.) will be approaching 200. I would watch this daily to see how it changes. But it sure is looking to me like early next week will be the "sweet spot" to get a good chemical thinning spray on depending on how you are feeling about fruit set at that time. I got to tell you, the more I think about it, I could sit right here in my office in Belchertown and run the whole show for you guys without having to go anywhere! :-)



## SMALL FRUIT UPDATE

Sonia Schloemann

**2019-2020 New England Small Fruit Management Guide:** available online at - <http://ag.umass.edu/fruit/ne-small-fruit-management-guide>. Print copies are also available \$16



plus shipping by ordering from your state's Extension Office or by going to <https://www.umasextensionbookstore.com/products/108>.

**CROP CONDITIONS: Strawberries:** June-bearing cultivars are in bloom to early fruit set. This is a key time for both insect pest and disease control. [Tarnished Plant Bug](#), [Strawberry Clipper](#), [Botrytis Gray Mold](#) are all active now. Scout fields for TPB and Clipper using recommended techniques and thresholds (see links in this message or go to [IPM Berry Blast # 8](#) for more info). Botrytis gray mold must be managed proactively by knowing the field history (abundance of overwintered inoculum) and by monitoring weather conditions (wetting periods). Again, see link above or IPM Berry Blast #8 for more info. The potential still exists for the spread of [Bacterial Angular Leaf-Spot](#). The damage to leaves is less worrisome than the damage to the fruit calyx, which can render the fruit unmarketable. Well time copper applications can help protect fruit calyx tissue, but over application can lead to phytotoxicity. Copper hydroxide formulations may be more effective than copper sulfate formulations. Actigard® has also shown some ability to reduce infections by stimulating plant defences. Planting of new fields is being completed as field conditions allow. **Brambles:** Floricane varieties are entering the bloom period. Many areas are still showing significant winter injury with either poor or no shoot growth in the upper sections of the canes. Where this is the case, it may be best to cut canes to the ground and allow the plants to put energy into good primocane growth. As new leaves are unfolding, scout for signs of [Raspberry Fruitworm](#) feeding. Adult RFW can cause both bud and foliar damage but eggs laid in the receptacle area of the fruit will hatch out larvae that will feed on the interior of the berry causing fruit to be unmarketable. No action threshold based on scouting is available for the East Coast, but significant leaf injury at this time of year may indicate the need for action. See the [New England Small Fruit Management Guide](#) for recommended materials and rates. **Blueberries:** Many varieties are now in bloom, some in early fruit set. Pollinators are active, especially on (rare) days without rain. We still have a ways to go to complete pollination and weather conditions look favorable. An indication of good pollinations is an abundance of white flower corollas on the ground beneath the bushes. Fields where poor pollination is suspected Gibberellic Acid applications can be used to enhance the crop. Gibberelin is a plant hormone that is produced by seeds of pollinated fruit and helps promote normal fruit development. Applying a synthetic GA product can augment low levels of natural GA in poor pollination years. See link to MSU article on this practice here: <https://www.canr.msu.edu/news/gibberellin-use-for-fruit-set-on-blueberries>. B.t treatments for gypsy moth caterpillars may still be needed in some areas. Scout for these tiny critters to see if they are present in your planting. Where Mummy berry shoot strikes are still present take protective action to protect blossom tissue from infection.



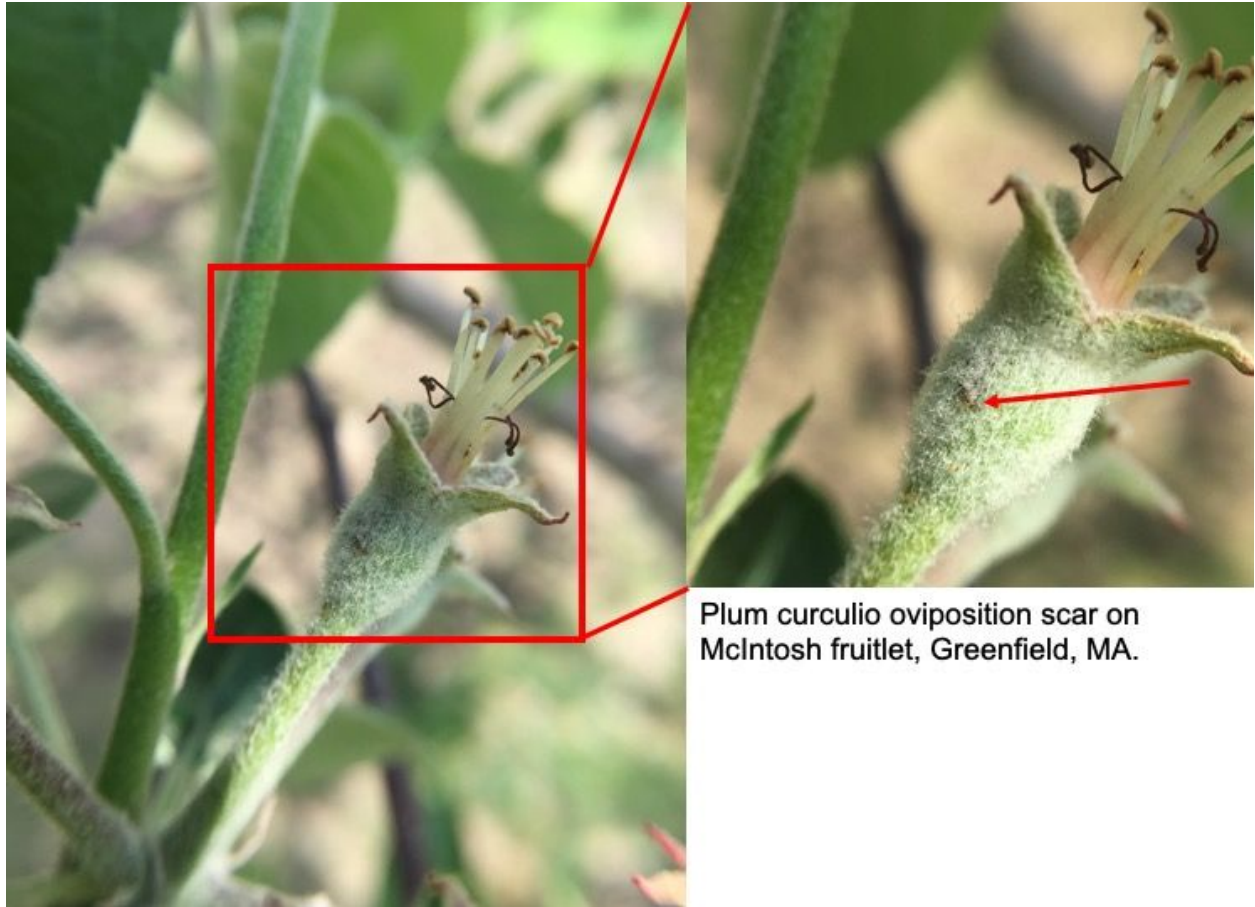
**Berry Growth Stages 5/20/19** - a) strawberry early bloom, b) blossom buds starting to show in summer raspberries, c) summer raspberry shoot growth 6"+, d) late bloom/early fruit set in blueberries, and e) white blueberry carollas on mulch beneath bushes.



## **HAWKEYE'S CORNER (notes from the field)**

### **Liz Garofalo**

I'm not the only one enjoying this warm weather! As nighttime temperatures increase, plum curculio damage risk does as well. The sentinel apple tree in Greenfield is already showing the first damage I have seen this season. The upside to the "urban" location of the tree is that we see things here a little sooner than in cooler locations. So, consider this tree the harbinger of sorrow, plum curculio is on the move.



Plum curculio oviposition scar on McIntosh fruitlet, Greenfield, MA.



## GUEST ARTICLE

No GUEST ARTICLE this week...



**FACEBOOK ME**



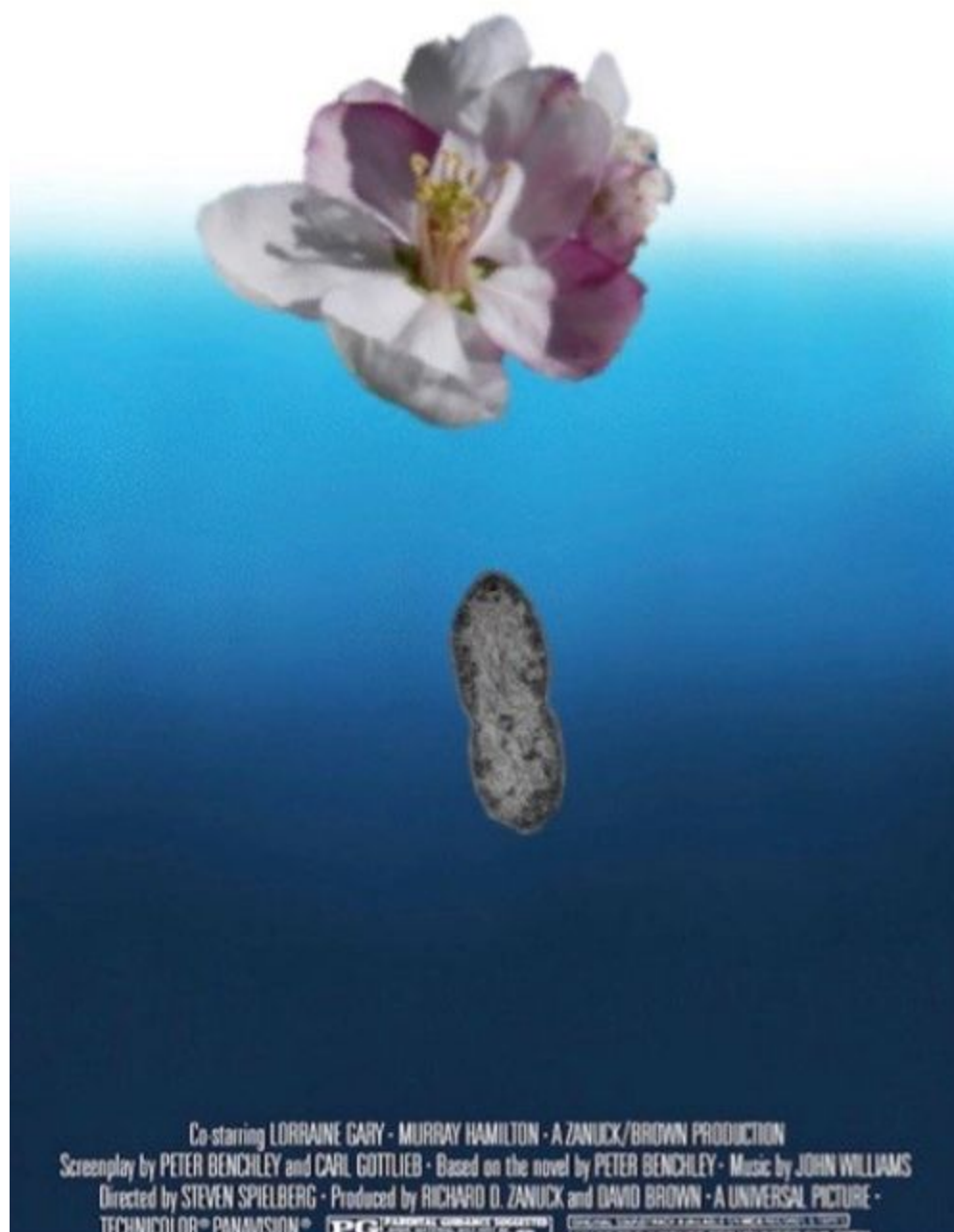


Elizabeth W. Garofalo



2 mins · 🌐

Just when you thought it was safe to go back into the orchard (cue Jaws music)...



Co-starring LORRAINE GARY · MURRAY HAMILTON · A ZANUCK/BROWN PRODUCTION  
Screenplay by PETER BENCHLEY and CARL GOTTlieb · Based on the novel by PETER BENCHLEY · Music by JOHN WILLIAMS  
Directed by STEVEN SPIELBERG · Produced by RICHARD D. ZANUCK and DAVID BROWN · A UNIVERSAL PICTURE ·  
TECHNICOLOR® PANAVISION® [PG] PARENTAL STRONG CAUTION [GIF] [GIF] [GIF] [GIF]

👍 Like

💬 Comment

➦ Share



Write a comment...







## USEFUL LINKS

[27th Annual March Message \(2019\) to Tree Fruit Growers \(Google Doc\)](#)

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>)

[Acimovic Lab at Hudson Valley](#)

[Peter Jentsch's Blog](#)

The next Healthy Fruit will be published on or about May 28, 2019. 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](#)



The Best Berry Plants since 1932

[Nourse Farms](#)



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