



“Fruit Facts” – Monday, May 6th, 2024
Mario Miranda Sazo, Janet van Zoeren and Anya Osatuke

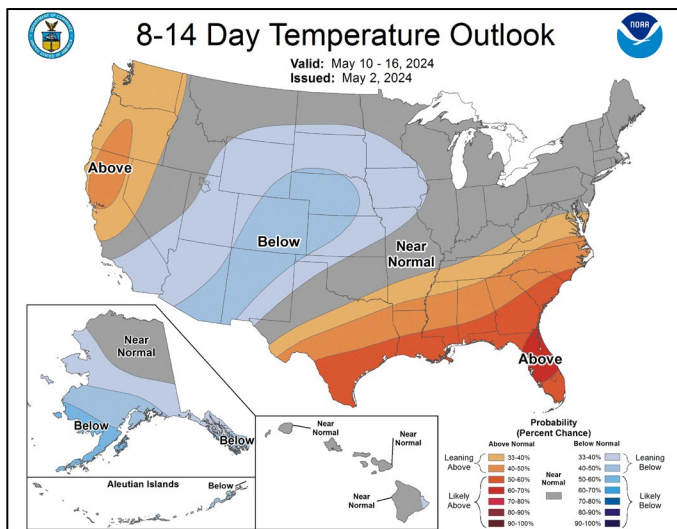
Articles below in today’s issue:

- ‘Last Window Opportunity for Blossom Thinning for Honeycrisp, Gala, and Fuji is Monday and Tuesday’
- ‘New Set of Data to Assess Cold Damage - Niagara County’ by Craig Kahlke, CCE LOF

Weather Forecast

See below the graphic that was provided last night (Thursday May 2) by Cornell climatologist Samantha G. Borisoff from NOAA, Northeast Regional Climate Center at Cornell University.

NOAA’s Climate Prediction Center (CPC) 8-14 day temperature outlook suggests near-normal temperatures are expected for the May 10-16 period. Normal highs for this time of year are generally in the mid to upper 60s, while normal lows are generally in the low to mid 40s.



To Do Today

Last blossom thinning opportunity for Honeycrisp, Gala, Fuji, and most of the high value cultivars, is tomorrow Monday and Tuesday.

Trees have still too many fruits and bloom thinning should remove at **least another 18-20% more**, via bloom thinning with ATS or NAA (see below rates). The conditions may not be too warm later for good chemical thinning results. If you recall, we did not get good thinning results last year and growers spent a significant amount of labor and resources later with hand thinning.

Suggested Chemical Thinning for Honeycrisp:

- **Bloom**
 - **Ammonium Thiosulfate (ATS) (2.5-3.0%), try NAA as well and compare the thinning results for your own learning.**
- Petal Fall (fruits at 5-6mm)
 - NAA 4oz/acre + Sevin (1pt/acre)
- Fruits at 11-13 mm
 - NAA 3oz/acre + Sevin(1pt/acre)
- Fruits at 15-20 mm (if needed)
 - NAA 4oz/acre+ Regulaid (1pt/acre)
 - Accede+Maxcel

Suggested Chemical Thinning for Gala:

- **Early King Bloom**
 - **Promalin 2 pt/acre**
- **Full Bloom**
 - **Ammonium Thiosulfate (ATS) (2.5-3.0%), try NAA as well and compare the thinning results later for your own learning.**
- Petal Fall (fruits at 5-6mm)
 - NAA 4oz/acre + Sevin (1pt/acre)
 - Macel 128oz/acre+Accede 400ppm
- Fruits at 11-13 mm
 - Maxcel 128oz/acre + Sevin(1pt/acre)
- Fruits at 15-20 mm (if needed)
 - Accede+Maxcel

Bloom thinning is also recommended for Fuji.

New set of data to assess cold damage by Craig Kahlke, CCE LOF

Sample: 5 trees form across the whole block.

From each tree sampled 2 clusters each from high, medium, and lower parts of canopy. Thank you, Craig! Great data and very useful we can share all this great information from Niagara tonight.

Bottom line- 'damage for most, but plenty of viable flowers left.'

Please **consider blossom thinning** to reduce the load a bit more and despite the cold damage effect you may have. Do not blossom thin if you have too much damage (very bad spot, bottom, without air drainage, and without a wind machine.).

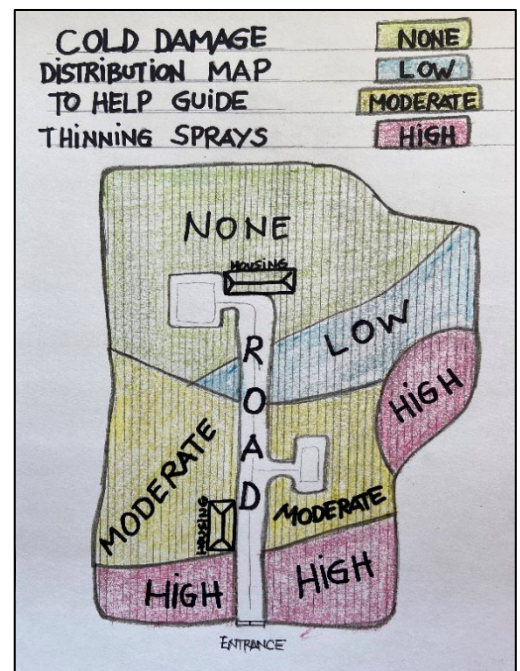
Variety	# Buds Cut	% Viable	% Kings	%	Location (all in Niagara county)
		Alive	Alive	Laterals Alive	
Gala	48	97.9	100.0	97.4	Inland
Gala	158	88.6	77.4	91.3	Inland
Gala	136	67.6	46.7	73.6	Intermediate
Gala	144	87.5	90.3	86.7	Lake
Gala	155	65.2	60.6	66.4	Lake
NY2	152	78.9	70.0	81.1	Inland
NY2	151	60.3	41.4	65.8	Inland
NY2	147	61.2	50.0	64.6	Lake
NY1	163	84	56.3	90.8	Inland
NY1	124	71	50.0	76.0	Inland
NY1	192	52.1	28.9	57.8	Intermediate
Honeycrisp	120	39.2	13.8	47.3	Lake
Honeycrisp	135	78.5	62.1	83.0	Inland
Fuji	145	76.6	58.6	81.0	Inland
Zestar	151	70.2	51.6	75.5	Inland
Golden Del.	134	77.6	50.0	85.6	Inland
Ginger Gold	42	45.2	40.0	46.9	Inland
Ginger Gold	125	88.8	93.1	87.5	Inland
Ginger Gold	121	66.1	40.0	74.7	Intermediate
McIntosh	60	86.7	100.0	83.3	Inland
Empire	58	98.3	100.0	97.8	Inland
Idared	54	44.2	36.4	46.5	Inland
P.L-Lady in Red	22	63.6	80.0	58.8	Inland
AVG			60.7	74.8	
Range			13.8-100	46.5-97.8	
# Buds Cut	2737				

Testing the use of trickle irrigation (under the tree) the night before a cold event to mitigate cold damage in the LOF region:

This year a very interesting mitigation strategy that was trialed by a few LOF growers at a large scale (at both sides of the city) was the use of trickle irrigation prior to the cold event on Fuji blocks that were more advanced by Friday or for other high value cultivars located at lower elevation sites without the protection of wind machines. At these sites, irrigation was started at approximately the same time as the wind machines and the total amount of water applied averaged around one to one and a quarter inches/acre. There is anecdotal information at one of these sites where an entire set of tree rows did not receive trickle irrigation and more bud damage was observed in these unirrigated rows when compared to the trees that received one irrigation cycle the night before the cold events. To understand some of the science of this practice, I made a few phone calls to WA fruit growers, consultants, and fruit extension specialists this week and learned that that the trickle irrigation practice (under the tree) is commonly used by WA growers for additional frost protection. Growers mentioned that for every gallon of water that freezes it releases around 144 BTU per lb. but growers need to keep watering to keep releasing that heat during the cold event. Under tree microsprinklers are much more effective than trickle irrigation. Western growers indicated that watering the ground also improves soil conductivity and thermal mass. However, in WNY State the soil was quite wet from April rains thus we would expect much less benefit from trickle irrigation thus the anecdotal benefit this year is a surprise. Western growers emphasized that while under tree irrigation can be effective, overhead irrigation is more effective if there is enough water available for freeze protection during the entire length of the freeze event. Western growers lobby very heavily to have early and enough water rights when temperature weather forecasts predict early frost events in the Pacific Northwest.

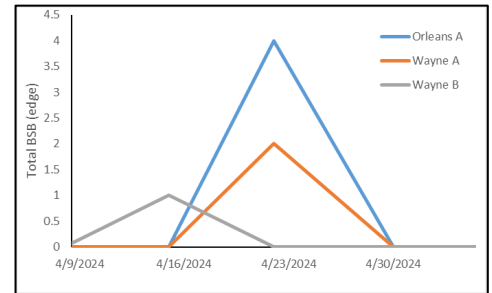
You can still develop and use practical 'Cold Damage Distribution Maps' to guide your coming thinning spray decisions (see below sketched cold damage map):

- By now growers should have a better idea of the extend of cold damage at their farms. This information can be hand-drawn and colored by cold damage levels as shown in the drawing.
- Hopefully, several growers will carefully assess their blocks (bottoms and tops with the use of ladders) and won't find too much damage and the crop will need to be thinned with full/normal rates.
- For those growers with a **whole range of damage levels** (none, low, moderate, high) with some blocks showing no damage and others showing massive damage, we suggest the use of **cold damage distribution maps** to guide your future thinning sprays.



- **Ongoing apple scab infection event!** Most of the spores were released yesterday (Sunday), with another smaller infection predicted to take place mid to late this week. Whenever you get a chance today or tomorrow, apply a protectant product to keep you clean through the rest of the week. If you didn't put a cover spray on over the weekend, you may want to apply a product with kickback combined with a protectant (remember to rotate FRAC group S1 and SDHI fungicides to avoid resistance).

- **Fire blight.** Despite temperatures over 60 during the day, remember that a cold nighttime temp can kill an *Erwinia amylovora* infection potential (i.e. fire blight risk) to almost nothing.
 - **Inland sites – you may want to cover up with a biological (i.e. blossom protect for example) prior to the possible infection on Wednesday,** in blocks with high risk of infection AND with open apple blossoms.
 - Lakeside sites – fire blight infection risk is currently low
- Black stem borer flight began – so far numbers are very low. I expect flight to pick up when temperatures increase. Note that bsb is always naturally present in our native woodlands, and trap catch on the edge of a block only translates to damage within the block when trees receive a stress, such as drought, flooding, fire blight, winter freeze damage, or another insect or disease stressor.
- Consider pesticide choices carefully now that **bee hives** are in the orchard. For a reminder of which products are most bee-safe, and what products are worse when used together, view our “Bloom Pesticides – Relative Toxicity to Pollinators” cheat sheet at https://rvpadmin.cce.cornell.edu/uploads/doc_870.pdf.



Stone Fruits:

- The **brown Rot** management period in stone fruit continues. If you have a history of blossom blight keep stone fruit trees covered from pre-bloom through petal fall. Don't forget to rotate fungicides - there are many labeled products available (see Recommends), including Rovral 4 flowable (which may provide 24hr “kickback” activity). Remember to rotate products to delay resistance – save Rovral for when you really need that kickback activity. Avoid chlorothalonil/Bravo when bees are foraging.
- Do you have monitoring traps out for **oriental fruit moth**? We have caught 3 OFM at a single location in a peach block so far this spring. The insecticide management window will occur when these moths have mated, laid eggs, and to target the newly hatched caterpillars. With the cool weather this spring, we may see a delayed OFM spray window.
- **Plum curculio** is active when temperatures are above 60F. As stone fruits reach shuck fall AND once the bees have been removed from the orchard block (and nearby apple blocks as well), consider applying Assail or Avaunt (or see the Recommends for other options).

Good to Know

Do you have a local NEWA weather station to pull data from?

The Network for Environmental Weather Applications (NEWA) decision support platform uses hourly weather data to inform crop and pest risk management forecasting models. Models are available on the NEWA website (<https://newa.cornell.edu/>) for apples and berries (as well as grapes, vegetables and field crops). For apples, you can view data to help predict diseases (i.e. apple scab and fire blight) and insects (i.e. codling moth and plum curculio) management windows, as well as to make management decisions regarding irrigation and thinning. In 2007 and 2018 surveys, NEWA platform users self-reported average annual cost savings of \$4,329 from reduced pesticides and \$33,048 in avoided crop losses by using NEWA pest forecast models (Olmstead & Carroll 2018, Carroll 2007). Please contact someone on our team to learn more about getting a NEWA weather station on your farm, or to help determine if an already existing weather station will provide similar enough data for you to use.

Citations

Olmstead, D. and Carroll, J. 2018. The Network for Environment and Weather Applications: 2017 Survey of Impacts and User Insights. NYS IPM Program Project Report. eCommons, Cornell University. 8 pp. <https://hdl.handle.net/1813/60637>

Carroll, J.E. 2007. Impact of NYS IPM Program's Network for Environment and Weather Awareness (NEWA) on agricultural production. NYS IPM Program Project Reports 2007-2008, NYS IPM Pub 506: 261-267. <https://hdl.handle.net/1813/42584>

Update to NEWA Fire Blight Model – Streptomycin applications 5 days in the future

By Anna Wallis, Kerik Cox, and Dan Olmstead

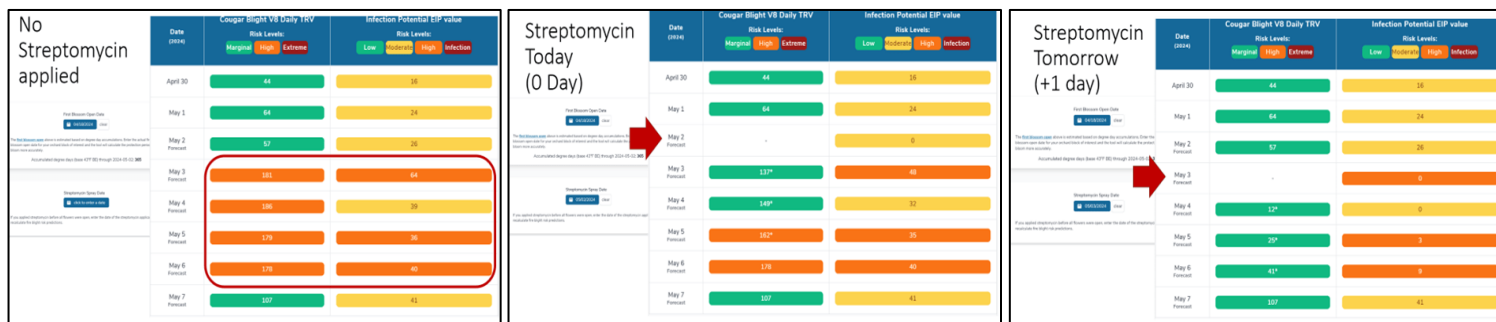
The timing of streptomycin application(s) during bloom is critical for fire blight management. This antibiotic has 24-hour pre and post activity, meaning it will protect open flowers open approximately one day before and after the application is made. It can be difficult to choose the best time and/or make time for multiple applications during fire blight infection events. This is particularly true for multiple consecutive infection events or prolonged high-risk periods. It is also critical to minimize antibiotic use to prevent the development of antibiotic resistance in the pathogen population.

To help guide streptomycin applications, the [NEWA Fire Blight Model](#) has been updated to visualize the effects of streptomycin application up to **5 days in the future**. To determine the optimal timing for an application, take the following steps:

- Navigate to the [NEWA Fire Blight Model](#)
- Select your **Station** or a nearby station
- Set **Orchard Blight History**
- Set the **First Blossom Open Date**. Choose the date that first blossoms were open in your orchard. *If flowers are still open in your orchard and the model is not saying this, you may move this date later in the season to tell the model that flowers are still open.*
- Observe model output for the **predicted infection risk**
- **NEW:** Set your proposed **Streptomycin Spray Date**
- Adjust streptomycin spray date timing and see predicted infection risk change
- Select your preferred application date to minimize infection risk

For more information and recommendations about fire blight management in 2024, you can visit Kerik Cox's Blog: <https://blogs.cornell.edu/coxlab/>.

Figure 1. NEWA Fire Blight Model outputs for Geneva, NY on 5/2/2024. **Streptomycin spray date** has been adjusted for 'No application' (first panel), today (second panel), and tomorrow (third panel). The output indicates that application Wednesday 5/3 would be the optimal timing for most reduced risk.



Every effort has been made to provide correct, complete, and up-to-date pesticide recommendations. Nevertheless, changes in pesticide regulations occur constantly, and human errors are still possible. These recommendations are not a substitute for pesticide labeling. Please read the label before applying any pesticide. Copyright 2024. All rights reserved. No part of this material may be reproduced or redistributed by any means without permission. Cornell Cooperative Extension provides equal program and employment opportunities.
The Lake Ontario Fruit Program is a Cornell Cooperative Extension partnership between Cornell University and the Cornell Cooperative Extension Associations in Monroe, Niagara, Orleans, Oswego and Wayne counties.