



## ***“Fruit Facts” – Friday, April 26<sup>h</sup>, 2024***

**Mario Miranda Sazo and Janet van Zoeren**

### **Scout Training Webinar recording now available**

In case you missed it, the recording of our scouting webinar that we held on Monday April 15th is now available online here: <https://www.youtube.com/watch?v=OtyOWCL1Q2A&t=3359s>.

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### **Pink Meeting recording now available**

During this meeting we discussed updated temperature forecasts by a Cornell Climatologist. Some of the forecast graphics are shown below. Click to access recording: <https://youtu.be/JGI7n69-JA0?si=nXTtGikVaSqLfgyk>.

00:00:00 - Intros – Mike Basedow & Janet van Zoeren, CCE

00:00:51 - Climate Update – Jessica Spaccio, NRCC

00:06:45 - Tree Decline Survey – Kenneth Buck, Cornell AgriTech

00:09:42 - Managing Crop Load for Optimum Results in 2024 – Dr. Terence Robinson, Cornell AgriTech

00:40:00 - Apple Insect Management in Pink – Dr. Monique J Rivera, Cornell AgriTech

01:01:59 - WNNY Pink Disease Update – Dr. Kerik Cox, Cornell AgriTech

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### **Cornell Statewide Frost Protection Webinar recordings**

The recordings of the Cornell Statewide Frost Protection Webinar held last Friday are available here: <https://youtu.be/TIBepfb98ws>

## ***Weather Forecast***

See below the graphic that was updated late last night by Cornell climatologist Jessica Spaccio from NOAA, Northeast Regional Climate Center at Cornell University.

NOAA’s Climate Prediction Center (CPC) 8-14 day outlook for May 3-9 slightly favors above-normal temperatures for central to western New York, shown in orange on the map. The rest of the state, shaded in grey, is favored to have near-normal temperatures (review graphic).

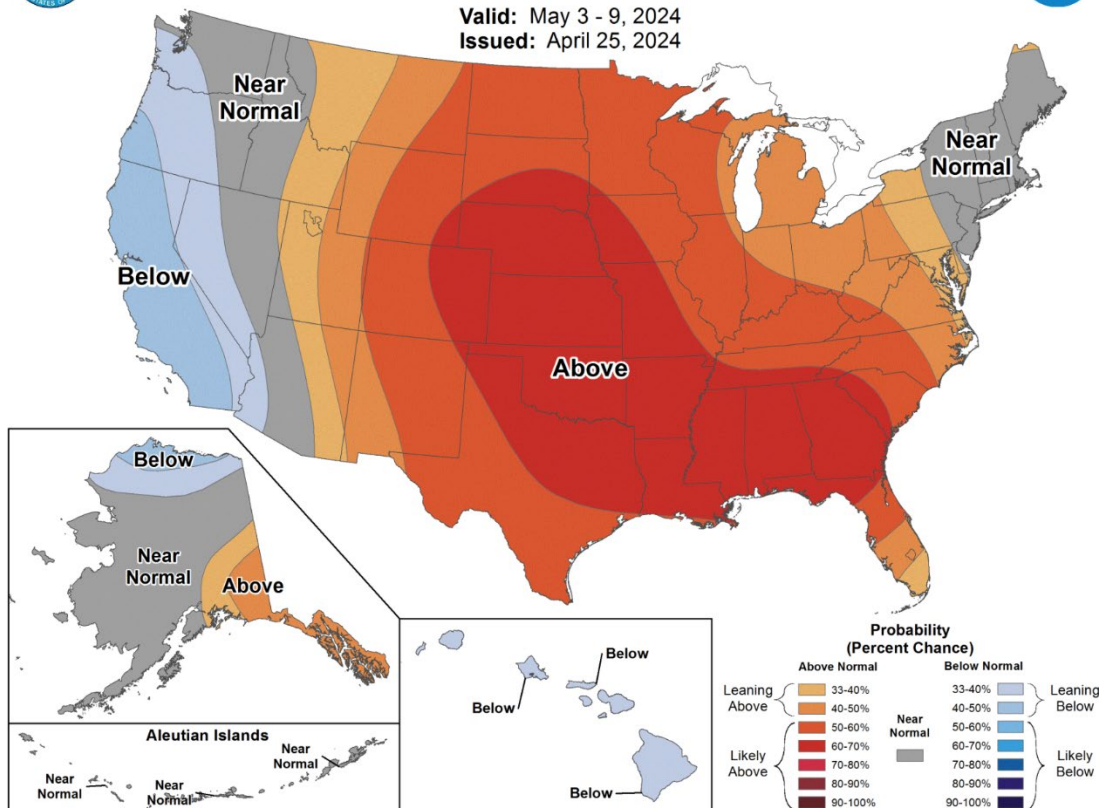


# 8-14 Day Temperature Outlook



Valid: May 3 - 9, 2024

Issued: April 25, 2024



## To Do Today

- Please review the below information provided by Jim Wargo (Valent USA) late last night. We have had two consecutive nights with low temperatures and some damage was already observed in the afternoon yesterday. Please be strategic and use a little more patience if using Promalin as a frost rescue treatment at the early pink stage. Don't run out today and spray Promalin as if the trees were in full bloom. Please wait, assess your damage, and review the below guidance on Promalin use when damaging frost occurs before the bloom stage.

### Promalin: What to do when freeze events occur from tight cluster to pink.

Apples at tight cluster to early pink are more tolerant to cold temperatures than fully open flowers. Nonetheless, if the temperatures do get cold enough (27/28F), injury to flower reproductive parts can occur. I often get asked this time of year "will Promalin help set fruit after a damaging frost event at tight cluster to pink". The short answer is yes, but there is a caveat. Don't run out the next day and spray Promalin as if the trees were in full bloom. Be patient and follow the series of steps below.

### Guidance on Promalin use when damaging frost occurs before the bloom stage:

- Do not apply Promalin the next day after a frost event during tight cluster and early pink growth stages:** You will be overwhelmed by the results if you do. If trees are at full pink (all five unfurled flowers fully extended) then wait until the first few king flowers open
- Assess flower buds for cold injury at tight cluster to pink:** Do this by dissecting flowers that have not yet fully opened to see if the reproductive flower parts are still alive. If you see brown discoloration inside the developing flower, then it means the female part of the flower (pistol) is dead and no pollination or fertilization will occur. The tree will subsequently shed those flowers. In many cases the flowers will open and look fine (no injury to the petals), but that can be deceiving. Make sure to inspect the flower reproductive parts closely as previously

mentioned. **Note:** if the freeze event is hard enough that the vegetative receptacle tissue at the base of the flower gets damaged or frozen, then it's game over. Promalin will do no good. Its utility is limited to cases where the flowers reproductive organs are no longer functional but the receptacle remains unharmed.

- **Determine the injury threshold:** It's up to you to determine if there are enough damaged flowers on the trees that may result in reduced fruit set and crop loss. Remember, you don't need every flower to set. In most cases, the goal is for only one of the five flowers on a spur to develop in to a fruit. It's also important to have an adequate number of non-fruiting spurs for next year's crop. Don't panic if there is modest flower injury. Consider it your first thinning application...
- **Decide:** If your damage assessment suggests that crop loss is likely then you can make the choice to spray Promalin on the trees to increase fruit set. Apply one **pint of Promalin/Acre**, timing the application to first flower/early bloom stage. Applications made later than early flowering have been shown to be ineffective in situations where flower injury occurred from freeze events at tight cluster through pink. Use sufficient water volume ~100 gal/Acre to ensure good coverage and apply under slow drying conditions if at all possible.

It's important to understand how Promalin works and what its limitations are. While I will not go in to all the details in this article, I want to underscore a few key points

- 1) **Promalin IS NOT an anti-freeze type product.** It will not lower the freezing point of the plant tissue if applied ahead of a frost event.
  - 2) **Promalin WILL NOT revive, resuscitate or repair plant/flower tissue that is damaged by freezing temperatures.**
  - 3) **Promalin is basically equivalent to hormone replacement therapy in humans.** In the normal pollination process, fertilized ovules begin to develop in to seeds that produce hormones including cytokinins and gibberellins. These hormonal signals tell the tree there is viable seed in the apple. The seed is essentially the offspring, and the tree will continue to nourish the developing seed with carbohydrates and nutrients. However, if fertilization does not happen due to reproductive flower injury or poor pollination weather, then no viable seed will develop. In that scenario, the tree is much more likely to shed the fruit and put it's energy in to those apples that have the potential to produce progeny. That's where Promalin comes in. Promalin applied to sterile flowers provides the hormonal signal that would normally come from the developing seed. That's why it's important to synchronize the application of Promalin with the trees natural phenology - slightly ahead of or during the early pollination window. Trees don't receive hormonal signals from developing seeds from tight cluster through pink, so why apply Promalin then? The cytokinin and gibberellins will be long gone by the time bloom comes around. Coincide the application to the same stage the tree is expecting to receive those signals instead. The fruit that develops after Promalin application will have low seed count or no seeds at all, but it will develop to normal size as research studies have shown.
- **This is the week to impose/finish the last touches of precision pruning on Honeycrisp at the early pink stage.**
    - **The first step in managing crop load is to establish a target of final fruit number for Honeycrisp and Gala**
      - **Honeycrisp example:**  $1,200 \text{ bu/acre} \times 80 \text{ count} / 1,320 \text{ trees/acre} = 73 \text{ fruits/tree}$
      - **Gala example:**  $1,500 \text{ bu/acre} \times 100 \text{ count} / 1,320 \text{ trees/acre} = 114 \text{ fruits/tree}$
    - **The second step (important this week at early pink for Honeycrisp) is adjust bud load through precision pruning. And also ask your Jamaican and Spanish pruning crews to watch the CCE LOF YouTube videos in English and Spanish)**
    - **Honeycrisp example:**
      - Target =  $73 \text{ fruits/tree} \times 2 = 146 \text{ buds per tree}$
      - Don't leave more than 200 flower clusters on Honeycrisp!
    - **Gala example:**
      - Target =  $114 \text{ fruits/tree} \times 1.5 = 171 \text{ buds per tree}$
      - Don't leave more than 250 flower clusters on Gala!

- **Possible apple scab infection event**, either over the weekend and/or on Tuesday, depending on your location and microclimate. You may be able to cover now to get you through the next 4 days, or you could find a window on Monday to apply a product with kickback.
- **Tight pink is your first opportunity to get a head start on fire blight management.** In any blocks with previous history of damage (and where the tree is already filling the space so you don't mind slowing growth), I would recommend following Kerik Cox's suggestion to apply either:
  - or apply prohexadione-calcium (**Kudos, Apogee, @ 3-6 oz/100 gal**) alone
  - or apply prohexadione-calcium (**Kudos, Apogee, @ 2 oz/100 gal**) with Acibenzolar-S-methyl (**Actigard @ 1 oz/100 gal**)
- **Keep scouting your blocks for those spring pests and diseases:**
  - Black rot and other diseased mummied fruits that were not removed during winter pruning. If you see any, remove them out of the orchard now to avoid problems later this season!
  - Tarnished plant bug - scout for these by examining ~100 terminal clusters per block, and looking for TPB feeding holes. TPB feeding holes often drip a little bit of sap which can be an easier way to spot them.
  - Oblique banded leafroller – scout for these by examining ~100 terminal clusters per block, and looking for chewing damage on developing fruitlets or rolled up terminal leaves.
  - Dogwood borer larvae feed in trunks of trees (generally the hole will be located where there are burr knot roots, and you may notice an area of damage as trees begin to look weak and decline). Dogwood borer is usually localized to specific blocks, and is best managed using mating disruption. If you see larvae now, you could look into finding disruptors to hang in mid May to prevent future generations.
  - Woolly apple aphid is not supposed to be a “spring” pest, but has already been seen at several locations in WNY with aerial colonies on pruning cut wounds in the interior of the canopy. At this time of year they are more difficult to stop, because they are only just beginning to build up the “woolly” exterior coating, so the white fluff is not so pronounced as in the mid-summer. Scout for WAA by looking at areas where you know there was a hotspot last year, and looking for small amounts of white fluff or aggregating dark bodies in the interior of the tree.

### Pears:

- Some pear varieties are in bloom. Any pome fruits (apple, pear, quince) with **open blooms** could be at risk of fire blight with the weekend rains, if the **average temperature gets above 60F** (keep an eye on the weather for the weekend!).

### Stone Fruits:

- The past couple nights have been perfect conditions for **bacterial canker blossom blast**. The *Pseudomonas syringae* bacteria causes ice nucleation (and therefore cell damage in stone fruit flowers) at temperatures around 26F. All stone fruits are susceptible, but sweet cherries are where we usually see bacterial canker. There is not currently any reliable way to prevent blossom blast, but we can be ready to prune out bacterial cankers this summer and to sanitize pruning equipment between cuts. You can learn all about this pathogen watching the recording from our St. Peachtricks Day webinar: <https://youtu.be/BhGuXvW7yN4?si=813rS9O7JdmpBpgg> (skip ahead to time stamp 1hr:12min).
- The **brown Rot** management period in stone fruit has begun. Although the optimal range for pathogen development is above 60F, blossom infection can occur at any temperature above 32F. 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) and chlorothalonil/Bravo (avoid when bees are foraging, if possible).

## On the Horizon

- **Leave checks/controls/untreated panel sections if you will be using frost protection products this season:** If you are going to test products, you need to leave unsprayed controls within each block that you are testing. You should try to avoid using separate complete blocks as contrasts between control and treatment. If you don't leave controls, you cannot determine potential effectiveness. Dr. Jason Londo is happy to coordinate with growers to evaluate product effectiveness this season. Please let us know if you are planning to test the use of frost protection products.
- **Site location matters:** New stone and pome fruit plantings will be more prone to future frost events if located in low-lying areas where cold air settles, and in areas where wind and air movement are blocked by obstructions such as trees, hills, fences, and or buildings.

## Good to Know

**Do you know that the optimal soil pH for the majority of apple cultivars (of course the exception is Honeycrisp!) is around 6.5-7 (acid 1-6, neutral 7, and alkaline 8-14).**

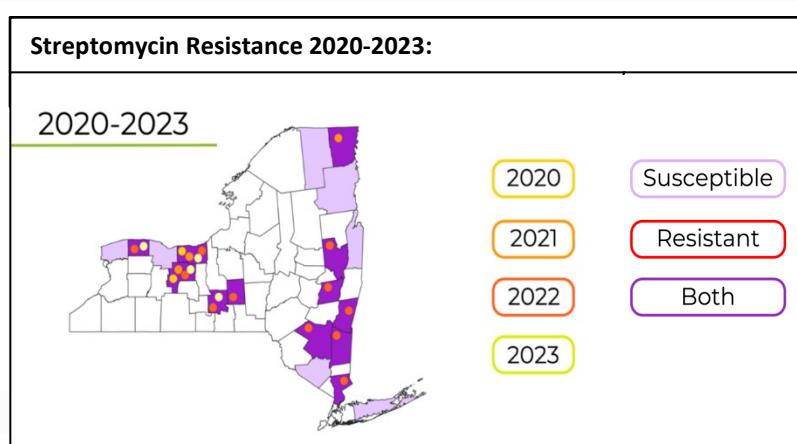
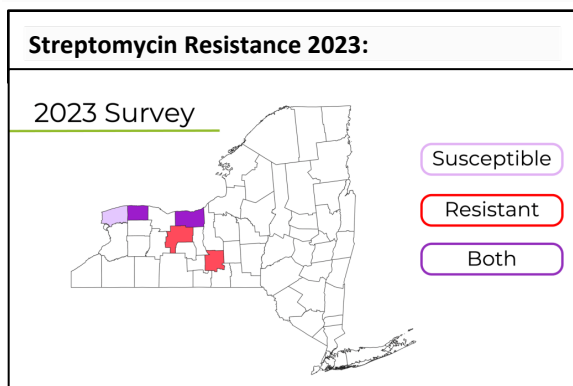
**Please notice that we now suggest the optimum soil pH before planting of 'Honeycrisp' should be 7.2 not 6.5-7.0.**

This new Cornell recommendation may seem high to some consultants or growers but in recent orchard plantings where 7.2 pH is maintained we have seen low amounts of bitter pit and excellent tree growth.

### Streptomycin Resistant Fire Blight in New York (2020-2023)

The below information was taken from a blog post written by Isabella Yannuzzi and Kerik Cox

Counties highlighted in the images below in **dark purple** had both susceptible and resistant strains, those in **light purple** had only susceptible strains found, and those in **red** had only resistant strains found. For 2023, and for 2020-2023 we have two maps available, one that shows resistance by county, and one that shows the number of samples received by each county in the year(s) specified. Counties left white did not send in samples in that given year, or the samples received were found to not be fire blight. These maps are based off the samples our lab collects and receives each year and the results of molecular fire blight confirmation and streptomycin resistance testing.



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.

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