



“Fruit Facts” – Friday, May 5th, 2023
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Coming Soon: LOF WNY Petal Fall meeting planned to be conducted virtually on Friday May 12 or Monday May 15 – Stay tuned!

Current forecast shows no fire blight risk and minimal apple scab risk

Continued cooler temperatures mean there is **negligible risk of fire blight** infection, and minimal apple scab infection potential this week. As always we will continue to keep a careful eye on weather forecasts and the NEWA model.

To Do Today

- **Waiting for better/ideal weather conditions:** This week’s weather of rain and cold temperature conditions made fruit growers nervous about orchard management tasks in general, both for the early planting of new orchards and for the successful and timely use of PGRs (Apogee, Promalin, MaxCel). It is my hope that more ideal/warmer temperature conditions (air and soil) will improve during the weekend.
- **We still have time to impose/finish the last touches of precision pruning on Honeycrisp at the pink stage today/this weekend with better weather.**
 - English - Pruning Guide for Precision Crop Load Management**
A video describing precision pruning, why, how, and when to accomplish it.
<https://www.youtube.com/watch?v=29cF8yOKup0>
 - Spanish - Guía de Poda para Manejar con Precisión la Carga Frutal (con subtítulos en Español)**
Un video, subtulado en el idioma español, que describe la poda de precisión, el por qué, cómo, y cuando realizarla.
<https://www.youtube.com/watch?v=8kZYT-7etL4>
- **The first step in managing crop load is to establish a target of final fruit number for Honeycrisp and Gala**
 - Honeycrisp example:**
 - $1,200 \text{ bu/acre} * 80 \text{ count} / 1,320 \text{ trees/acre} = 73 \text{ fruits/tree}$
 - Gala example:**
 - $1,500 \text{ bu/acre} * 100 \text{ count} / 1,320 \text{ trees/acre} = 114 \text{ fruits/tree}$
- **The second step (important this week at early pink for Honeycrisp) is adjust bud load through precision pruning.**
 - Honeycrisp example:**
 - Target = $73 \text{ fruits/tree} * 2 = 146 \text{ buds per tree}$
 - Don’t leave more than 200 flower clusters on Honeycrisp!
 - Gala example:**
 - Target = $114 \text{ fruits/tree} * 1.5 = 171 \text{ buds per tree}$
 - Don’t leave more than 250 flower clusters on Gala!

- Consider fungicide choices carefully once **bee hives** are in the orchard. For a reminder of which fungicides 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.

On The Horizon

Plan to attend coming CCE LOF virtual petal fall meeting, probably to be announced for Friday May 12 or Monday May 15. More details early next week!

Why is blossom thinning critical for Honeycrisp in 2023?

- Gibberellins produced by the seed of young fruitlets and shoots tips inhibit flower formation for the next year.
- Excessive number of seeds inhibit flower initiation.
- The earlier the target fruit number can be reduced to the target fruit number the greater the likelihood of having flower initiation this season

Time to start getting ready your frost protection devices: Apple growers should check and test the use of frost protection devices (wind machines) next week. Typically, a wind machine can protect 10 acres or so. We emphasize that the best methods to reduce frost risk and prevent crop loss are through **orchard site selection** and the use of wind machines during frost events.

Good to Know!

Understanding the physiological principles of why apple leaf margins turn reddish in response to cold temperatures in early spring: If you recall, we had 3 consecutive days (April 12, 13, and 14) with record high day temperatures (76.9°F, 82.9°F, and 71.8°F) in the WNY fruit region (registered by one of the NEWA weather stations at Williamson DeMarree, Wayne County). This abnormal heat wave was followed by a sudden drop on day/night temperatures on April 18 (max.



Photos courtesy:
Stefano Paoli

44.2°F/min. 37.8°F), April 19 (max. 41.3°F/min. 36.3°F), and April 20 (max. 49.3°F/min. 35.9°F). During the same time period, Canadian fruit growers (Ontario) experienced more extreme low temps and in some cases frost protection methods were activated as shown in the below pictures taken in the early morning of April 27.

On April 27, I had the opportunity to be part of an email exchange communication between a Canadian tree fruit specialist and one of our Cornell faculties trying to elucidate the reasons of why apple leaf margins were showing a severe red discoloration.

- **Canadian tree fruit specialist:** We are seeing some reddish discoloration on the exterior of the leaves of some apple trees on various varieties. Some are more discolored than others, but it is throughout the tree and has been seen at multiple locations across the province (Ontario, Canada), therefore we don't think it is nutrient related – but any information would be of great help. We are wondering if this could be related to the cool weather – some photos are attached of Gala (first 2 to the left) and Honeycrisp (last one to the right). Is anyone else experiencing this due to the extreme heat we had a few weeks ago and now with cool temps seeing the trees react?



- **Dr. Lailiang Cheng (Cornell U.):**
 - The red leaf color is most likely caused by the cold weather the trees were exposed to right after the very warm spell. The leaves responded to the cold by increasing its anthocyanin synthesis to protect themselves against the cold.
 - In this case, cold is the primary cause for the reddish leaf margins and leaves as they would be yellow under N deficiency without cold stress. With that said, **N deficiency may exacerbate the red color development.** The accumulation of anthocyanins serves two functions here:
 - 1) lowering leaf light absorption to photo-protect the young leaves that have low photosynthesis to begin with and their photosynthesis is further compromised by low temperature, which you can think of as a shading effect.
- 2) accumulation of anthocyanins (water soluble) in the leaf vacuoles increases the total solutes that help the leaves withstand colder temperatures.

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 2023. 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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