



**“Fruit Facts” – Saturday, August 19<sup>th</sup>, 2023**  
**Mario Miranda Sazo, Janet van Zoeren and Anya Osatuke**

**This is the last regularly-scheduled Fruit Facts of the 2023 season!**

We are transitioning now to the CCE LOF Fruit Maturity report produced by Craig Kahlke. Please don't forget to sign up for the Harvest Maturity Report – see details below for subscription (\$75 for growers from Niagara, Monroe, Orleans, Oswego, and Wayne; or \$100 for satellite growers).

**Have a very successful 2023 harvest season!**

**Tree Fruit and Small Fruit Twilight Meeting:**

**Next Thursday August 31<sup>st</sup> at 7pm at Reality Research, 4729 Preemption Rd, Lyons, NY.**

Join specialists Anya Osatuke, Anna Wallis and Janet van Zoeren for a conversation about fruit and berry phenology and pest management. The August meeting will focus on weed management, including a quackgrass herbicide trial demo plot.

This series of monthly meetings will examine seasonal changes in tree fruit and berry crops, demonstrate scouting techniques, and discuss integrative pest management solutions to maximize the health and productivity of berry and fruit plantings.

Meetings are held from 7:00PM – 8:30PM on the last Thursday of every month, from April through August. Attendees are encouraged to bring pictures or descriptions of pests they are concerned about on their farm.

**1.5 DEC credits** will be offered in categories 1a, 10, and 22. Please arrive at 6:45PM to sign-in for DEC credits.

This event is free to attend, and no pre-registration is required.

**To Do Today**

- **Don't forget to sign up for the CCE LOF Harvest Maturity Report produced by Craig Kahlke this season:** Your \$75 subscription (if in the Lake Ontario Fruit Program partner counties of Niagara, Monroe, Orleans, Oswego and Wayne) gets you critical information on a weekly basis during apple harvest. Fruit samples are collected early in the week from across the region and sampled for internal ethylene concentration, firmness, starch/iodine, and total soluble solids. Results are summarized and recommendations for harvest windows of major apple and pear varieties are either faxed or emailed to subscribers later in the week. Satellite subscribers outside of the four county regions can receive reports as well, for \$100. Not sure if you've subscribed this season? Contact Natalie Mrzywka at [nlm53@cornell.edu](mailto:nlm53@cornell.edu) or 585-798-4265, ext. 122. Need to subscribe? See the attached form or online at: [https://rvpadmin.cce.cornell.edu/uploads/doc\\_1145.pdf](https://rvpadmin.cce.cornell.edu/uploads/doc_1145.pdf)
- **Growers should review the growing degree day updates & use of plant growth regulators near harvest information sent by Craig Kahlke via CCE LOF email blast yesterday. The following are some of his most important remarks:**  
**Harvest date:** The 2023 growing season has been rainier and cooler than normal. Current growing degree day accumulations for various sites in WNY indicate that **we are behind last year's degree day accumulation by an average of 3 ½ days**, using the 14 NEWA stations in our region.

This would indicate harvest dates for early season varieties a few days behind last year for most. However, there are variation in the NEWA stations- see below. In addition, larger changes in weather patterns can push picking dates ahead of further behind than last year. Follow the Harvest Maturity Reports (don't forget to sign up for the harvest maturity report as indicated above) and test your apples to dial in ideal harvest timing.

**Growing Degree Day (base 39°F) Accumulation Comparisons from April 1 - August 17 in 2023 and 2022:**

NEWA Station	April 1- Aug 17, 2023	April 1- Aug 17, 2022	# GDD earlier (-) or later (+) than 2022	~ # of Days earlier (-) or later (+) than 2022
Albion	3255	3325	70	2.8
Appleton (Russell Farms)	3147	3241	94	3.9
N. Appleton	3074	3141	67	2.9
Ashwood	3119	3191	72	3.0
Butler (Tree Crisp)	3239	3300	61	2.5
Fairville (The Apple Shed)	3089	3194	105	4.5
Lyndonville	3193	3173	-20	-0.8
Medina	3117	3273	156	6.6
Ransomville	3282	3406	124	5.0
Sodus – Lake	3168	3240	72	3.0
Sodus (south)	3300	3380	80	3.2
Waterport	3139	3235	96	4.0
Williamson – DeMaree	3147	3246	99	4.2
Williamson – Mason	3034	3162	128	5.6
<b>Average</b>	<b>3165</b>	<b>3251</b>	<b>86</b>	<b>3.6</b>

**Pre-harvest drop:** We had relatively few days this season with temperatures greater than 90°F. In addition, no days in August so far thus we expect only a moderate risk of preharvest drop.

**Color development:** Temperature so far in August have been cooler than normal and the projected forecast for the remainder cooler than normal which has resulted in good early color. Thus, we expect a good coloring year.

**Fruit size:** There should be reduced fruit size due to cooler and cloudier weather than normal. This will be offset by the ample rainfall we have received. Thus, on average we expect normal fruit size.

**Bitter pit:** Our early peel sap results show a fairly good Ca level and a good K/Ca and N/Ca ratios; Thus, we expect a low risk of bitter pit overall. It seems to be fairly consistent across all blocks in WNY.

**Chilling injury:** The cooler than average temperatures in August indicate significant risk of chilling injury. Thus, storage temperatures for chilling sensitive varieties should be 38°F.

- **Main PGRs recommends for important apple cultivars (again, the entire set of recommendations were sent by Craig via CCE LOF email blast yesterday, check your email!):**
  - **Gala:** We recommend the application of only ½ pouch/acre of ReTain. Apply 2 weeks (or even 1 week) before expected first harvest. In 2023 we estimate Gala harvest will begin on Sept 8 thus the suggested date to apply ReTain at the 2-week timing is August 25. ReTain will permit Gala fruit to remain on the tree an additional 14-21 days resulting in improved fruit size (1 box size with a 21-day delay). Although color development will be delayed if harvest is also delayed then good color will develop. ReTain delays maturity but results in a more even maturity on the tree. Multiple picks on Gala can be reduced to 2 or even 1 picking in some cases. ReTain also reduces fruit stem end cracking and greasiness that are problems as Gala fruits mature in the second and third picks. ReTain also has reduced Stem End Flesh Browning during storage and thus ReTain (or Harvista) is a suggested strategy for fruit destined for long term storage where Stem End Flesh Browning can be a severe problem.
  - **Honeycrisp:** It is a variable ethylene producing variety that has very uneven ripening but can have significant pre-harvest drop in some years. We recommend a very low rate of 1/3 pouch per acre of ReTain applied 1-2 weeks before expected harvest in blocks which have had a drop problem in the past. In 2023 we estimate Honeycrisp harvest to begin on Sept. 15 and our suggested application date for the 2-week timing is August 31. A note of caution: ReTain (or Harvista) on Honeycrisp can have negative consequences during storage of this variety. If the risk of bitter pit is high, then these two PGRs will increase the bitter pit incidence during storage. The decision on whether to use ReTain or Harvista on Honeycrisp should be made only after an assessment of the risk of bitter pit risk.
- **Harvest already started for some early cultivars like Rave® (MN55), Wildfire® early Gala, and is getting close for other important cultivars like Premier Honeycrisp:** By now growers should have finished mechanical pruning and should be getting ready to deploy reflective fabrics as soon as they have the time/labor available.
- **Time to review the CCE LOF YouTube video titled “Using reflective materials for improved fruit color”.** The video describes how/when to deploy reflective fabrics and the economics on return on investment (ROI) showing the financial gains or benefits by adopting this technology. Here is the link: [Using Reflective Materials for Improved Fruit Color - YouTube](#)
- **Last week reminders! Act NOW!**
  - **Last opportunity to take leaf samples for foliar nutrition for all cultivars, except Honeycrisp** (Honeycrisp leaves without zonal chlorosis should have been sampled by the end of June/early July as recommended earlier this season). Start/finish sampling today. Please use paper bags, not plastic. Take the mid-shoot leaf from this year’s growth at the height of the majority of the canopy. Pick leaves that are exposed to the sun (not shaded interior leaves). Collect 80-100 leaves from the same variety in the orchard, taking a 1-2 leaves from each of several shoots (not spur leaves) from several trees. Remove leaves by pulling down on the leaf so the petiole remains attached on the leaf. If there is heavy residue, the leaves should be washed and rinsed with distilled water before drying. After leaves are dried, send them to the lab for analysis.
  - **What about if you did not sample Honeycrisp leaves earlier and you still want to submit samples TODAY:** Collect only 1-2 leaves from the tip of the one-year-old shoots. Don’t collect leaves with zonal chlorosis.
  - **Last window opportunity to seed tillage radishes as a late-summer cover crop to improve soil physical properties and reduce weed pressure in new plantings:** The large taproots of forage radishes can help alleviate soil compaction by penetrating through dense soil layers. In addition, when seeded in early to mid-August, radishes quickly provide a thick canopy that can reduce erosion and shade out many winter annual weeds. Grower Ted Furber of Cherry Lawn Farm recently indicated at the WNY summer tour that radishes seeded in the in-row spacing have significantly reduced weed pressure in his new plantings. Do not delay the seeding of radishes and get this done as soon as you can the next few days.
- **Fire blight** season is picking back up in some blocks. Don’t forget to watch for shepherd’s crooking leaders and branches, and continue to remove those as they show up! This time of year, blocks with high incidence of fire blight can still be sprayed with a Cueva + Double Nickel mix to prevent spread; be sure to also make notes of blocks with high FB pressure now to be extra diligent in pruning out cankers this winter and to apply Apogee to at pink next spring.

- **Summer diseases** continue to show up. Fungicide covers for the rots should go on every 14-21 days. Products that are effective for bitter rot include, Merivon or Pristine (0 day PHI), and Flint Extra or Luna Sensation (14 day PHI). The same products are effective for black rot and white rot, and sooty blotch and flyspeck, along with Captan+Topsin (1 day PHI).
- **Scab pressure has recently intensified in certain blocks/trees.** In blocks with scab pressure, keep rotating through single-site products such as Merivon (0 day PHI, also effective for rots), Cevya (0 day PHI, also effective for SBFS), Flint Extra or Luna Sensation (14 day PHI, also effective for rots), and Aprovia, Miravis and Sovran (30 day PHI).
- **Brown marmorated stink bug** is present in WNY orchards, although none of the blocks I monitor have yet reached threshold. If you have a history of damage in your blocks and want to plan an application, effective materials include Brigade (30 day PHI), Beseige (21 day), Endigo (35 day), and Leverage 360 (7 day).
- **Apple Maggot** is now showing up across WNY. Consider Assail or Imidan (both 7 day PHI) for AM management. The pyrethroids Baythroid (7 day PHI), or Danitol or Mustang Maxx (14 day PHI) are also effective options.
- **Woolly apple aphid** is in full swing. Scout for colonies in the angle of a branch or twig crotch, or at pruning cuts. Sefina (7 day PHI) is a new product labeled in NYS for “suppression” of WAA, which is performing well in spray trials. Assail or Movento (7 day PHI), Sivanto Prime (14 day PHI) or Beleaf (21 day PHI) are other recommended products. These products will also be effective against **green apple aphids**, which continue to move into many blocks.

## On The Horizon

**Next Week are the Sampling Dates for the Passive Bit Pit Prediction Model in Honeycrisp!** With harvest dates of early-season varieties likely a few days later than on average, we’ve determined the ideal time to collect is **next week, August 21-25**. Earlier sites with advanced maturity should ideally sample their fruit earlier in the week. Later-maturing sites can likely wait until later in the week.

- The procedure – randomly collect **100 fruit from a block**, put them in cardboard boxes or small wooden crates, and place them in a room temperature storage area- your local storage/packer can likely have a room for you to use. A barn or storage area on-farm also works. Label the box with farm/grower name, block #, sampling date, and contact info (email & cell phone #). In addition, emailing Craig ([cjk37@cornell.edu](mailto:cjk37@cornell.edu)) with this information after sampling will be helpful for our logistical timing of evaluations. After 18-21 days, LOF personnel will evaluate the fruit for bitter pit incidence. The data will be turned over to Dr.’s Terence Robinson, Lailiang Cheng, and Chris Watkins to make recommendations. Ideally, the recommendations will be more accurate if you also submitted peel sap samples in July. Hopefully before your first pick, you’ll get an email from the above scientists with your results and storage recommendations.
- **Note – any samples collected after August 25<sup>th</sup> may not get evaluated before your first pick.** Questions? Contact Craig at 585-735-5448, or [cjk37@cornell.edu](mailto:cjk37@cornell.edu).

## Good to Know!

**USDA and NY Agriculture and Markets are still assessing damages and requesting disaster declarations:**

USDA and NY Agriculture and Markets are still assessing damages and requesting disaster declarations - which make farmers eligible for various disaster program assistance - from the May 18 frost event. Growers - even if your damage was minimal- it can help your neighbors and you to report the damage your crops incurred. Reporting needs to be done with the USDA NY FSA office. You can find your local office here:

[New York State Office \(usda.gov\)](#)

If damage within your county, or within a contiguous county, reaches a certain threshold the USDA will issue a disaster declaration which again can be helpful for those who might need some assistance from different disaster relief programs.

Please note this USDA process is different from surveys being circulated by NYS agriculture and markets, which is assessing damage to fruit crops that are utilized in craft beverages (wine, cider). If applicable to your operation, please do complete that form as well.

### Trying to Elucidate the Reasons of Why ‘Honeycrisp’ Grew like a ‘Pumpkin’ in 2023:

Early this week we exchanged several emails with an apple crop development specialist from the Province of New Brunswick, Canada. Kendra McClure was asking if Honeycrisp ‘pumpkin’ shaped fruit (see pic) was being observed in our WNY this season. The following information provides more specifics about her initial questions and the responses she got from Cornell Professor Emeritus Martin Goffinet and two of our Cornell faculties Dr. Terence Robinson and Dr. Lailiang Cheng.

- **Question:** This year we are seeing many misshapen apple fruitlets, which we are calling “**pumpkin**” shaped. We are seeing this across varieties, and across growing regions in the province. We know that we had a widespread cold snap in early February that killed nearly all floral buds in stone fruit. We thought that apple floral buds made it through relatively unscathed, but beyond cutting open buds, and forcing branches, we were not able to do any microscopic analyses. We had some cooler weather in the lead up to bloom, but there were no widespread frosts reported for any crop in our growing region. The weather at pollination was fair, although we did have some drizzly/overcast weather in some regions. This season we have had unseasonably wet weather, even for the Maritimes, with large amounts of rainfall. **I was wondering whether you have observed this phenomenon before? If so, does it get more or less pronounced in the lead up to harvest?** Our growers are concerned about marketability of misshapen Honeycrisp fruit. The swelling seems to be very uniform, which makes me think it is not necessarily poor pollination, and I have not observed any russetting, which could point to a frost event at bloom? I was wondering if there could have been damage to some but not all ovaries during the cold snap? Or perhaps there was excess water during cell division and expansion? Thanks.
- **Professor Lailiang Cheng:** It appears that either the cold temperature those flower buds experienced in early February or the particular weather conditions during/after bloom led to the uneven cell division/expansion of the 5 carpels and their connection regions. Martin, do you have a better idea on this?
- **Professor Martin Goffinet:** I think Lailiang is on the right track, although it is hard to ascribe the morphology to cold injury. I too think the intercarpellary tissues have compromised, as there is a definite lack of fruit expansion in the five radii that lie between the tiny sepal remnants I see in the photo. I would expect to see some abnormal tissue development (or lack thereof) in those five radii. Cold injury in spring often shows up in apple flowers in the ovules and subtending receptacle tissue, so I am puzzled by this affected intercarpellary tissue, while the carpels seem to be doing OK.
- **Professor Terence Robinson:** I have seen pumpkin shaped fruit about 6 to 10 times over the last 40 years. Primarily in the Hudson Valley on Idared, Empire or Delicious. We always attributed it to mild frost damage in March where some vascular cells were damaged resulting in abnormal growth between the carpels. The fruits never looked normal at harvest and were almost always thinned off by the growers. It was never enough of a problem to do any research work on. I haven’t seen this damage in the last few years likely due to climate warming in the Hudson Valley. The timing of frost damage and its effects on fruits or fruit pedicels is quite interesting. If the frost occurs in Mid-winter, most often flower buds are killed. If it occurs in March, we have shortened pedicels and pumpkin shaped fruits. If the frost occurs later in the season, near bloom then we often have damage on epidermal or subepidermal cells resulting in frost ring or russetting which we are seeing a lot of this year due to our frost in mid-May of 2023.



**8<sup>th</sup> Cornell Hispanic Fruit Tour was a Great Success in Wayne County this past Wednesday August 16:**

Despite the heavy rains on Wednesday morning, we had a very successful outdoor educational session (taught entirely in the Spanish language!) under a nice tent (provided by our grower host Gary Craft) and got relatively good attendance (see pics). We adapted very well to the early/torrential rains (entirely changed the tour logistics with the use of a wagon and instead stayed under the tent all morning), had a very meaningful conversation moment with Gary Craft and his employees at some point (led of course by Mildred Alvarado of Ag Futuro), learned a lot about (1) blueberries with Anya Osatuke, (2) soil science with Debbie Aller, and (3) brown marmorated sting bug with Janet van Zoeren. By midday and with a sunny blue sky, we enjoyed a great Mexican lunch (provided again by Ag Futuro this year). We owe a great amount of gratitude to our grower host who has empowered, supported, trained, and built a nice 'Ag-extended family' with his employees and for so many years. Thanks Gary and Stephanie! And to the WNY growers who sent their employees to the training!



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.

**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.**