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Cooperative Extension

Lake Ontario Fruit Program

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"*Fruit Facts*" – Thursday, August 8th, 2024

Mario Miranda Sazo, Janet van Zoeren, Craig Kahlke and Anya Osatuke

Subscribe Now for Harvest Maturity Reports!

Click on the link here for the form to print and mail in to Natalie: 2024 Harvest Maturity Report Subscription Form.pdf

Look for the first Harvest Maturity Report in ~2 weeks. Testing will begin on Wildfire Gala, Premier Honeycrisp, Ginger Gold, and Zestar! 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 or 585-798-4265, ext. 122.

You can also use this link (https://lof.cce.cornell.edu/enrollment.php) to subscribe for any of our supplemental publications (Fruit Facts & Harvest Maturity Reports) if you are already enrolled in our program.

Registration Is Now Open for our 2nd Annual Western NY Fruit Grower Tour!

Tuesday, August 13th, 2024

Co-Sponsored by the Cornell Cooperative Extension Lake Ontario Fruit Program & Lake Ontario Ag Consulting LLC.

Register Here: https://lof.cce.cornell.edu/event.php?id=1915

Sponsor Opportunities: Please contact Craig Kahlke at cjk37@cornell.edu, 585-735-5448.

The tour will be conducted in Orleans County and will feature the following fruit farms: Toussaint Farms, Zingler Farms, Circle R Fruit Farms, and Orchard Dale Fruit Farm

Stay tuned for more details coming soon!

Announcing the 9th CCE LOF Hispanic Summer Fruit Tour to be Hosted by Dobbins Farms on Saturday August 17 Educational programming: 3-6pm Free dinner celebration with invited grower Jose Iniguez: 6:30-7:30pm

The Hispanic fruit tour will be hosted by Dobbins Farms at the orchard located close to the following home address: 11647 Alps Rd, Lyndonville, NY14098.

The entire **3-hour tour** will be conducted at this orchard location and will include three educational stops in the

Spanish language (see more details for registration 'On the Horizon' section below): (1) Horticulture by Mario, (2) IPM by Janet Van Zoeren and Sandra Lizarraga, (3) and labor efficiency by Mary "Bess' Lewis of Cornell Agricultural Workforce Development.

The tour will start at **3pm and will finish at 6pm.** The tour will finalish with a dinner celebration at the nice Russ Martino pavilion of the Town of Yates from **6pm to 7:30pm**. We have also confirmed the participation of invited grower Jose Iniguez from Lamont Fruit Farm/Fish Creek who will be addressing the tour participants at the pavilion. Mexican food and drinks will be catered by the Mariachi Restaurant of Medina with a generous financial support provided by Farm Credit East.

WNY Bilingual Orchard Soil Health and Beneficial Fungi Meeting
August 22nd, 2024 - 3-6PM

Join members of CCE LOFP, CCE ENYCHP, and Cornell Soil Health Program for a bilingual training on the basics of soil health, the potential benefits of mycorrhizal fungi, and an update on the current project status of our SARE grant on orchard mycorrhizal products.

Location: CCE Orleans County, 12690 Rt 31, Albion, NY 14411

Register by August 20th for this Free Event! Register at: https://lof.cce.cornell.edu/event.php?id=1948

Agenda

3:00 PM - The basics of orchard soil health (Concurrently presented in English with Dr. Deborah Aller and Spanish with Mario Miranda Sazo)

4:00 PM - The basics of soil mycorrhizae in New York apple orchards (Concurrently presented in English with Mike Basedow and Spanish with Mario Miranda Sazo)

5:00 PM - Refreshments and Socializing until 6PM

All programming will be given in both English and Spanish

This meeting is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, through the Northeast Sustainable Agriculture Research and Education program under subaward number LNE23-472R.

To Do Today

2024 Harvest update predictions, the most updated GDDs calculations, and Retain use by Craig Kahlke (more information in the coming issue of the CCE LOF newsletter this week!):

The 2024 growing season in WNY started early with green tip in mid to late March. The cold freezing temps of April 25-26 brought some flower damage, with most apples at or just past tight cluster. Above average rainfall this spring produced a bad year for apple scab. High temperatures during the petal fall and 10mm fruit thinning sprays caused some overthinning especially with Honeycrisp. Above normal temps in June and July (~3 F in both months) have advanced maturity thus far, with most berries, cherries, peaches and other stone fruit picking 7-14 days earlier than normal. Rainfall in the past few months has been highly variable, with our region experiencing "Florida-like" thunderstorms, in which it rains very heavily for a short period of time, and then the sun is out less than an hour later. Some regions have had several inches of rain during these storms while others have had much less. Thus, it still has been necessary for those who have irrigation to irrigate at times.

Forecasts form the National Weather Service Climate Prediction Center for the month of August (https://www.cpc.ncep.noaa.gov/products/predictions/30day/) is trending slightly below normal for the first half of August and slightly above normal for temperatures for the last half of August and early September with slightly higher than normal precipitation.

Predicted Harvest dates:

Our GDD (base 39°F) accumulations are running well ahead of those from 2023. At this time last year, we were running about three to four days behind 2022. Fruit size is above average in most varieties in WNY. The table below indicates we are running well ahead of last year, and ahead of the 3 year average "normal".

Table 1. GDD Comparisons of 2024, 2023 and 2022. (Base 39 F, April 1-August 7)

				3 yr	~ days	~ days
NEWA Station	**2024**	**2023**	**2022**	**AVG**	**ahead 2023**	**ahead 3 yr AVG ('normal')**
Appleton (Russell Farms)	3162	2838	2941	2980	14.0	7.9
N. Appleton	3037	2761	2852	2883	12.3	6.9
Ashwood	3086	2810	2895	2930	12.2	6.9
Butler	3202	2938	2999	3046	11.2	6.6
Fairville	3116	2793	2901	2937	14.2	7.9
Fulton (airport)	3120	2843	2893	2952	12.1	7.3
Knowlesville	3202	NA	NA			
Lockport	3329	NA	NA			
Medina	3147	2815	2976	2979	14.4	7.3
Ransomville	3328	2968	3099	3132	14.8	8.1
Rochester (airport)	3317	2900	3037	3085	17.4	9.7
Sodus - Cherry Lawn	3106	2808	2905	2940	13.1	7.3
Sodus (south)	3255	2986	3067	3103	11.2	6.3
Waterport (Orchard Dale)	3108	2827	2929	2955	12.3	6.7
Will. - DeMaree Home	3174	2833	2941	2983	14.7	8.3
Will. - DeM. Bear Swamp	3029	2779	2860	2889	11.2	6.2
Williamson - Mason	3038	2738	2875	2884	13.4	6.9
AVERAGE				**2978**	**13.2**	**7.3**

Conversations with other extension educators, growers, researchers, and crop consultants indicate we are probably more likely **running about 10 days ahead of last season and about 7 days ahead of a "normal" year**. If the weather patterns for the rest of the summer are as predicted (cooler, for the first half of August but slightly warmer than normal for the second half of August) we will likely be **6-7 days ahead of a "normal" year by the time we get to harvest.** To help growers time the applications of ReTain we give the following predictions.

- Gala normal harvest begins about Sept. 7 but this year we expect Gala harvest to begin Sept. 1
- Honeycrisp normal harvest begins about Sept. 12 but this year we expect Honeycrisp harvest to begin Sept. 5.
- McIntosh normal harvest begins about Sept. 10 but this year we expect McIntosh harvest to begin Sept. 3

As we get closer to harvest follow the **Harvest Maturity Reports** and test your apples to dial in ideal harvest timing.

Predictions for Harvest 2024

- 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 but the projected forecast for the remainder of the month is slightly warmer than normal which will delay early color
- Fruit size: Fruit size is very large due to good heat units so far and great water supply.
- 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 except where frost or overthinning reduced crop load where we expect significant bitter pit.
- Chilling injury: The predicted warmer than average temperatures in the second half of August indicate a lower risk of chilling injury than last year. Thus, storage temperatures for chilling sensitive varieties should be 38°F.

Suggested timings and rates of ReTain for pre-harvest drop control, harvest management and control of greasiness. Cracking, internal flesh pigmentation and stem end flesh browning.

- **Gala.** Almost all Gala blocks that are destined for long-term storage should receive Retain before harvest to control stem end flesh browning. We recommend the application of only ½ pouch/acre of ReTain at the 3 week before harvest timing about August 11. Later timings will also control drop, greasiness and cracking and can control stem end flesh browning. (Note from Chris Watkins: we find that the later applications can be just as good as earlier ones for FB control if fruit are stored in low oxygen and 38F, but firmness is compromised if fruit have not been treated with PGRs.) If a further delay of harvest is desired a second application of ½ pouch per acre of Retain should be made 1 week before harvest (about August 25). The two applications of 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 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.
- **Honeycrisp** is very sensitive to ReTain and in most cases is not needed; however, in some years there can be significant pre-harvest drop and ReTain can control the drop; however, it must be applied before drop begins. Other farms with large acreages of Honeycrisp can use ReTain to spread out the harvest. We recommend a very low rate of 1/3 pouch per acre of ReTain applied 2 weeks before expected harvest (about August 22) in blocks which have had a drop problem in the past or where harvest delay is needed. A note of caution: ReTain on Honeycrisp can have negative consequences during storage of this variety. If the risk of bitter pit is high (high K/Ca ratio or low crop load), then ReTain will increase the bitter pit incidence during storage. The decision on whether to use ReTain on Honeycrisp should be made only after an assessment of the risk of bitter pit risk.
- **McIntosh** We recommend a combined application of ReTain (1 pouch) + NAA (10ppm) 3 weeks before expected first harvest in years where there are not periods of 90+°F in the month of August. For 2024 which is not predicted to have any days above 90°F we suggest ReTain+NAA be applied about August 13. If a further delay of drop and harvest is needed, then apply a second application of the same tank mix should be applied about August 27.
- **For late September and October varieties** the negative effect of ReTain on fruit color development is much less than for early September varieties, thus we suggest the use of the full pouch/acre of ReTain to provide a consistent reduction of fruit drop and greasiness. For October varieties which are harvested under cooler conditions, application timing should be 3 weeks before normal harvest date (9-15 of September). Treating **Empire, Delicious and Jonagold** provides some flexibility in harvest date since those three varieties need to be harvested at about the same time. **Cortland and Jonagold** both suffer from greasiness problems as the fruit mature and ReTain applied 3 weeks before normal harvest can be a very effective control strategy. **Idared and Rome** both suffer from internal flesh pigmentation (bleeding), which can result in rejection of the fruit at the processing plant. Our research indicates this problem can be controlled effectively with ½ pouch/acre of ReTain applied in mid-September.
- **Reminder:** It is critical to include an organosilicone surfactant with ReTain. The organosilicone surfactant improves the uptake of ReTain better than other surfactants thus ensuring that sufficient ReTain is absorbed by the leaf to suppress ethylene production.

- **Early August is still a good time to summer prune sweet cherries:** Pruning should be done during dry periods which allow cuts to dry out or heal before rain. The key to pruning is to leave a 6-12 inches heading stub (no flush cuts!) to reduce the movement of bacteria into the trunk or main limbs and to leave vegetative buds for regrowth of a new branch. Cherry trees generally are so vigorous that removal of some wood does not affect carbohydrate accumulation for the winter and following season. Judicious summer pruning can improve the light environment within the tree strengthening fruit buds and possibly improving next year's bloom and fruit set. Research done in the west has shown that summer pruning reduced the overall vigor of the tree but did not affect subsequent yield or fruit size. This means that summer pruning is especially beneficial for overly vigorous trees. At this time it is easy to see bacterial canker infections that can be easily removed potentially reducing the potential for infections next spring. Immediately post–harvest is also the very best time to reduce tree height. Large cuts made in the tree top result in very little regrowth and any resulting winter injury has very little impact on the health of the tree. According to Steve, a single large cut at the desired tree height can contain tree height for up to 3 years.

  The style of summer pruning used depends on sweet cherry tree architecture: Dormant cuts made into 1 year old wood generally result in the production of 3 new shoots. Usually 2 are laterally placed (flat) while the third is upright. Simply removing the upright will sufficiently open the tree and allow much improved light penetration to the interior fruiting wood. Allowing a small stub to remain can increase the number of cherries since fruit buds generally form at the base of one year old wood. Leaving stubs might be an excellent practice for shy bearing varieties such as Regina, Ulster, and Attika. Shoots should be completely removed on cherries that bear excessively such as Whitegold, Rainier, and Sweetheart. Another reason to leave stubs is to limit the potential spread of bacterial canker on extremely susceptible varieties.

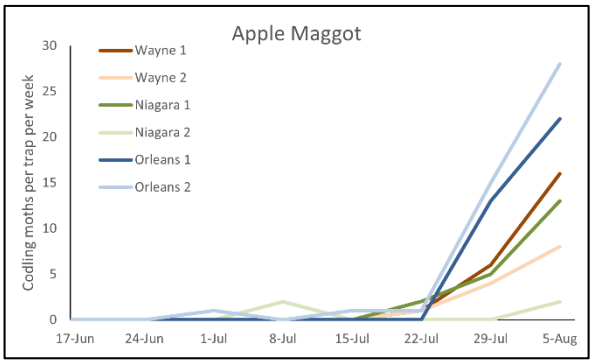
- **Hand thinning:** As almost never done before, a few growers finished hand thinning late last week and another group of growers finished it by Wednesday or yesterday. Growers who conducted a more intense or successful chemical thinning program were able to conduct a touch up hand thinning and finished earlier than previous seasons.
- **Budding in the on-farm nursery:** It should have been already started last week or should be started by now if you have the supplies, time, and the required trained labor. Finished trees that will be dug this fall for storage or early next spring should have a tree height of 55 to 65 inches above the ground or higher by now. If you did not cut back one-year old shoots earlier or in the last 2-3 weeks, you can still accomplish this by the end of this week or during the weekend. Do this as soon as you have time to get some flower buds induced close to the trunk.
- **Mechanical pruning for mature Gala and NY-1 blocks:** These small-fruited cultivars should be mechanically pruned at the end and very close to harvest to minimize any fruit size reduction. In some situations, some Gala blocks will be mechanically pruned and pneumatically defoliated by the end of next week.
- **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 has indicated 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.
- **Summer pruning:** This practice should have been started by now with this early season and for early cultivars. In some cases and to avoid sunburned fruit, summer pruning should be conducted only in the east side of the row and until 6-7 ft height.
- **The war on bitter pit!:**
  - This very special Ag-type of war against bitter pit on 'Honeycrisp' or targeted/customized management to reduce the incidence of bitter pit should have been started way earlier this year. You can not expect to win this war by only applying foliar calcium sprays late in the season if you did not do the most important things earlier in the season to increase fruit calcium levels before 30mm.
  - If you are not fully aware, more and more growers this season (both sides of the city!) made sure that EARLY nutrient uptake of available soil Calcium (or applied early through irrigation) was optimum with adequate soil moisture levels during cell division the first 6 weeks after bloom with enough irrigation early in the season.
  - Do not forget that early foliar calcium sprays before or at petal fall and until 30mm are valuable but not essential.
  - The most important period for foliar calcium sprays is from 30mm until harvest because xylem disfunction during

this period limits the movement of calcium to the lower half of the fruit.

- As we have mentioned in previous seasons, instead of a single managing approach against bitter pit, we have been suggesting for a multipronged approach to managing this calcium deficiency disorder on 'Honeycrisp'.
- The 2024 peel sap results were already sent to growers in the last two weeks. In general, the overall Ca level is lower than last year, but it's not bad at all.
- We expect to see a bit more incidence of bitter than the almost zero incidence of bitter pit we predicted at this same time last year.
- As we approach the use of plant growth regulators for drop control on 'Honeycrisp' orchards and if you got a **high K/Ca ratio of 27 or higher** as determined by the peel sap analysis, we recommend that growers:
    - **Do not apply Retain or Harvista** to avoid exacerbation of bitter pit development this year.
    - Don't precondition at 50°F for one week when risk is high and store immediately at 38°F for one month before packing.

- **Deficit irrigation for Honeycrisp orchards (if irrigated):** We recommend that irrigation of Honeycrisp orchards be suspended on August 1 (yesterday!). This imposed water stress can reduce bitter pit by limiting vigor and fruit size as both vigorous trees and large fruit size contribute to bitter pit development. However, even with the suspension of irrigation, we can not control rainfall and in many years large storm systems can bring large amounts of rain to WNY. We suggest that deficit irrigation in the later part of the season during fruit cell expansion can reduce bitter pit incidence.
- **Summary - Please remember that the important things that you did early in the season will contribute more than the late foliar calcium sprays applied at the end of the season to try to reduce the incidence of bitter pit:** Foliar calcium sprays can increase calcium levels in fruit by a small amount of approximately 10%, which is insufficient to overcome calcium deficiencies in the fruit. However, when proper amounts of calcium are added to the soil and sufficient irrigation is applied, fruit calcium levels are naturally often close to being adequate and then foliar calcium sprays can add enough calcium to significantly reduce bitter pit.

- **Apple maggot** trapcatch continues to increase, and has reached threshold on baited traps (cumulative 5 flies per trap) at all farms where we have traps set. Consider rotating **Assail and 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, but likely to cause flair ups in mites and/or woolly apple aphids due to removing natural predators.



- **Apple scab** continues to infect many orchards. Keep your fungicide program going if you see scab symptoms. Rotate between single-site products such as Cevya (0day PHI), Merivon (0day PHI), Tesaris (0day PHI), Rhyme (14day PHI); Flint Extra (14day PHI), Luna Sensation (14day PHI), Aprovia (30day PHI), and Sovran (30day PHI).
- **Summer diseases** such as **sooty blotch and flyspeck**, **black rot, white rot and bitter rot** continue to be a focus through harvest.
    - Products that are effective for SBFS, and black, white, and bitter rots include Flint Extra (14day PHI), Inspire Super (14day PHI), Luna Sensation (14day PHI), Merivon (0day PHI), and Pristine (0day PHI).
    - **In general, fungicide covers for the rots go on every 14 days**, but remember that 1.5" of rainfall would trigger a re-cover (rule of thumb, varies some by product).
- **Brown marmorated stink bug** continues to be present at low numbers. 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 (30day PHI), Beseige (21day PHI), and Leverage 360 (7day PHI).

On the Horizon

In the next weeks we will be sending the **sampling dates and protocol for the passive bitter pit prediction model in Honeycrisp** – stay tuned!

Plan to register your Hispanic employees for the Hispanic summer tour on Saturday August 17

Registration for the tour (including food and beverages to be offered at the end of the tour at the Russ Martino pavilion of Town of Yates) is **FREE** thanks to funds provided by Farm Credit East.

IMPORTANT - Registration process for the 2024 CCE LOF Hispanic summer fruit tour:

Pre-registration will be required for attendance of your Hispanic employees (55 participants is the limit!) for the CCE LOF Hispanic tour this year (the last day for pre-registration will be Wednesday August 14, 2024 by 5pm). It is especially important for food counts/seating, and handouts.

We encourage all growers to register their Hispanic employees EARLY (again, there will be a limit for registration of 55 people!) by **emailing a list of participants** with first name(s) and second last name(s)) plus a phone number from your organization to Mario (mrm67@cornewll.edu) or Janet (jev67@cornell.edu). Please contact Mario or Janet if you need more specifics about the tour or have any doubt.

Good to Know

Did you know that fruit sunburn and color development can be severely impacted by high summer temperatures?

- Fruit with poor color or defects caused by extreme weather events have minimal value to producers. Most often, these fruits are left in the orchard or sent to processing for minimal returns. Fruit production is profitable when high proportions of fruit is sold as premium fruit classes.
- In many apple fruit growing regions, fruit sunburn occurs when high temperature coupled with high light generate photooxidative damage that exceeds the photoprotective capacity. Sunburn symptoms range from white patches to necrotic regions on the fruit.
- Affected fruit can develop lenticel marking, postharvest sunscald, internal browning, and pathogen infections.
- Sun-injury disorders and poor red color development both substantially decrease fruit market value and the proportion of marketable fruit that is sold from an orchard. Climate change has exacerbated these risks for pome fruit growers in the U.S.
- Current prevention measures are largely based on physical means to reduce fruit surface temperature or light level such as the application of Kaolin-based film, evaporative cooling, and shade nets.

A grower and propagator located in Tompkins County, NY has an overstock of currant and gooseberry bushes and is hoping to connect with bulk buyers this summer or fall.

Plants available include white currants (‘Imperial’, ‘Primus’), red currants (‘Perfection’, ‘Pink Champagne’, ‘Red Lake’), black currants (‘Consort’), gooseberries (‘Captivator’) and Jostaberries. If interested, contact Dan via email dan@plantsmen.com or mobile phone 607-339-3118.

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.