



“Fruit Facts” – Wednesday, July 5th, 2023
Mario Miranda Sazo, Janet van Zoeren and Anya Osatuke

Plan to attend last virtual orchard meetup about heat stress next Thursday July 13 @7pm EST.

The virtual meetups are titled ‘Managing the Uncontrollable’: Over the past decade growers have been forced to confront wildly vacillating winter temperatures, uneven and often excessively heavy precipitation events, and extreme temperatures coupled with extended droughts.

When: Next week on Thursday July 13

Time: 7:00-8:30pm EST

Invited speakers:

- Dr. Lee Kalcsits (Washington State University)

Invited grower panelists representing different fruit production regions in North America:

- Steve Brown - Happy Valley Orchards, British Columbia, Canada
- Kyle Rasch - Tom Rasch & Son Orchards, Michigan, USA
- Tom Ferri - T&K Ferri Orchards, Ontario, Canada
- Randy Hart - Hart Apple Farms, New York, USA
- Garret Henry - Douglas Fruit, Washington, USA
- Steve Frecon – Frecon Farms, Pennsylvania, USA

How to attend: Last meeting is via Zoom, preregistration is not required to attend. Simply go to <https://bit.ly/2023-virtual-meetup> to join a few minutes prior to the start of the last orchard meetup this summer.

Best estimates to collect Honeycrisp fruitlets to target an average fruit weight of 55-60 gr/fruit:

So far, the best estimates for the fruitlet collection by growers in WNY are (1) **July 8-11** for Geneva and inland sites, (2) **July 12-14** for lake sites.

CCE LOF will conduct last fruit weight evaluations today and will update industry with additional FW data from Niagara, Orleans, and Wayne tomorrow Thursday July 6 via an email-blast. Stay tuned!

Other important dates to remember for the statewide Honeycrisp project funded by ARDP:

- Peel sap analysis will be conducted at a lab in Ithaca the week of July 17.
- Samples (frozen peels) submitted after July 17 won't be processed.

Last fruit weight measurements: On Monday July 3 we evaluated 50 fruitlets of Firestorm Honeycrisp on G.41 at Cornell AgriTech and average fruit weight was **36.24gr/fruit**. Fruit weight evaluations conducted on **June 29 and 30** by Liz Tee and Craig Kahlke showed that the fruitlet weights in inland and lake sites ranged from **32.06 to 43.13 gr/fruit** (Table 1, prepared by Liz Tee).

Fruit weight (grs/fruit)								
Thursday June 29 2023			Friday June 30 2023					
Oakes Row	Lamont Ba	Pettit Hom	Zingler 27	Kast L26	Orchard D	Lamont	Nesbitt N	Kalir Utica
36.25	38.23	28.34	24.82	41.36	59.04	37.64	43.24	51.59
30.12	32.72	40.74	45.97	40.94	41.46	50.15	57.22	48.33
31.57	28.32	40.82	42.6	50.41	25.02	41.62	45.04	40.47
30.26	57.92	27.38	36.81	30.7	32.43	45.41	32.48	35.77
43.5	42.95	28.83	46.28	27.71	40.18	35.38	27.88	43.17
24.15	49.82	32.59	41.78	53.73	35.01	42.47	25.03	48.17
40.44	42.18	24.97	35.07	49.43	62.72	29.71	51.64	46.75
37.63	45.05	37.19	28.33	74.4	46.65	41.72	50.62	37.83
31.17	45.97	24.21	29.04	41.56	36.21	38.32	53.78	47.68
39.5	21.52	45.46	37.26	27.13	61.42	31.17	35	41.99
27.96	36.44	29.5	35.19	45.03	30.38	37.04	30.85	27.28
27.65	26.95	37.42	43.33	45.91	49.23	28.29	34.67	35.62
33.48	38.53	32.83	40.8	43.52	48.54	40.77	48.54	44.01
30.74	35.91	42.33	39.25	35.82	32.41	42.48	29.59	32.11
24.96	32.92	38.37	56.63	40.54	51.35	30.17	28.15	34.61
32.63	38.36	34.07	21.8	37.12	33.18	32.55	45.4	53.44
Average FW of 15 fruits/site			49.6	40.91	35.34	54.16	44.08	41.26
			28.85	56.82	47.1	36.19	22.7	43.19
			51.95	39.26	42.29	21.65	28.36	40.37
			38.91	40.27	34.33	34	48.93	38.81
Average FW of 20 fruits/site			38.71	43.13	42.21	37.54	39.16	41.62

Honeycrisp Peel Sap Sampling Starts in Early July

by Mike Basedow, CCE-ENYCH; Mario Miranda Sazo, Craig Kahlke, Elizabeth Tee, CCE-LOFP, Lailiang Cheng, and Terence Robinson, Cornell University

Through the NY ARDP program, we will once again be offering peel sap analysis statewide. We encourage growers storing Honeycrisp to submit Honeycrisp samples this season.

To participate, you will need to sign up and pay for samples using the following registration page:

lof.cce.cornell.edu/event_preregistration_new.php?id=1792. You will then follow the link in your confirmation email to fill out the Qualtrics form for each sample. There will be a nominal \$5 fee for each sample submitted, with most of the cost being covered by the ARDP grant.

When fruit are between 55-60 grams in size, collect a 30-fruit sample from each block, weigh the fruit in grams, peel the fruits, freeze the sample, and contact Mike to submit the sample. A good, \$10 scale for weighing fruitlets can be [purchased here](#). We estimate this sampling will likely occur in WNY region around July 8-11 in Geneva and inland sites and July 12-15 in lake sites (a more updated fruit weight report will be sent to growers tomorrow Thursday July 6).

We will then analyze the peel sap for nutrient concentrations and send you a report on the ratios and recommendations for mitigation actions and storage recommendations by late July.

Sample collection info can be reviewed at the following link: <https://youtu.be/hYCqEOFWANI>

To Do Today

- **We recommend that you count total fruit per tree on 5-10 representative trees** in each block and reduce fruit number (via hand thinning, ideally with a platform) to the most profitable crop load (your targeted fruit number per tree). Hand thinning will be necessary in blocks where final fruit set (desired number of fruit/tree at harvest) is still relatively high in the tops of the trees.
 - Early hand thinning will help somewhat to mitigate biennial bearing in Honeycrisp, where floral initiation is earlier than the rest of the cultivars. Please review the recommendations for return bloom sent in previous Fruit Facts
 - Early hand thinning will also improve fruit size in small-fruited varieties like **NY-1 and Gala**.
 - Take advantage of your platforms to get hand thinning done quickly and more efficiently this season.
- **Avoid the common mistake of excessive crop loads in years 2 to 4 which leads to too little tree growth** (varieties differ in their biennial bearing tendency and this must be incorporated into the crop loads allowed on young trees).

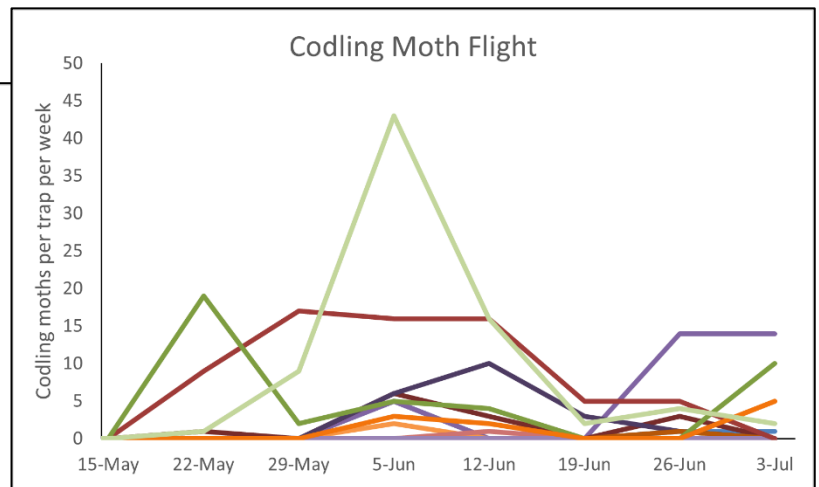
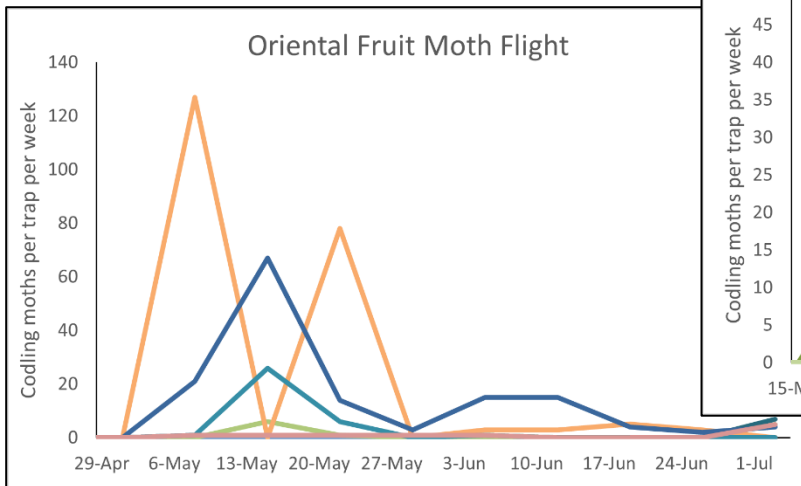
Cultivar ¹	Growth Habit	Biennial bearing tendency	Crop load per tree after hand thinning
Honeycrisp ²	Weak growing cultivar	Biennial	2 nd year: 12-18 apples 3 rd year: 20-35 apples 4 th year: 40-70 apples
Fortune, Fuji, Golden Delicious ² , Jonagold, Mutsu, Spy	Strong growing cultivar	Biennial	2 nd year: 16-20 apples 3 rd year: 25-40 apples 4 th year: 65-80 apples
Gala, Empire, Mac, Rome, Idared	Medium growing cultivar	Annual (more reliable bearer)	2 nd year: 20-25 apples 3 rd year: 30-50 apples 4 th year: 80-100 apples

¹ For **NY1 trees** which had moderate or poor growth in the first year or were planted on a weak rootstock, these trees should be de-fruited because fruits will outcompete with overall tree and shoot leader growth for carbohydrates and water.

² Please remember that hand thinning in Honeycrisp should start not later than @ 38-42mm. It is critical and should be done for good return bloom next year.

- **For the sudangrass, or sorghum-sudangrass, seeding recommendations we published in the last issue of the LOF newsletter, we would also like to suggest (as recommended by Dr. Deborah Aller) that there is an opportunity to mix the sorghum sudangrass with cowpea or sunnhemp to get some nitrogen into the soil and maximize the sudangrass biomass this season.**
 - If you have any doubt about this new recommendation and/or how to get the best use of cover crops during pre-site preparations this summer, don't hesitate to contact Dr. Aller to da352@cornell.edu and/or call 631-902-1582 (cell phone)
- **Leaf sampling collection for Honeycrisp is this week in WNY:** In the last three years we have recommended that growers collect Honeycrisp leaf samples for nutrient analysis about one month earlier than traditionally suggested dates for other apple varieties in early to mid-August. This season the optimal timing for leaf sampling collection starts **this week** in WNY. There are two reasons for this early leaf sampling:
 - Honeycrisp trees typically stop their shoot growth by the third week in June, earlier than many other apple varieties.
 - Development of zonal leaf chlorosis affects leaf nutrient concentrations, particularly leaf nitrogen status.

- **Recent precipitation events:** We got some good rains in WNY, and in some locations like Geneva and Ithaca, very heavy rains from June 29 to July 3. Accumulated rains were 0.22 to 1.15 inches in seven NEWA weather stations located in WNY for this time period. The accumulated rains in Geneva and Ithaca, were higher and measured 1.82 and 2.62 inches, respectively.
- **Increased water holding capacity is an important characteristic for high yields of high quality fruit in Western NY:** It is even more crucial in blocks without trickle irrigation.
 - At the beginning of this 2023 summer, a mature spindle tree needs around 4-5 gallons of water per day to keep up with tree evapotranspiration needs.
 - Water stress can lead to small-sized fruit and calcium disorders, like bitter pit in Honeycrisp.
 - Young trees need only small @ 2-3 gallons/tree/day, 2-3 times per week, but frequent doses of water for additional tree growth this year.
 - Focus irrigation on small-fruited varieties like Gala and continue “babysitting” NY1 with frequent but small amounts of water applied at least 2-3 times per week, providing 2-3 gallons per tree as minimum.
 - New Honeycrisp plantings (and those local ‘ellepot trees’ produced by Jacob Wafler and soon to be planted this summer) without trickle should be watered with tanks and a hose, 2-3 times per week (same amount of water/tree as previously suggested).
 - Please remember that any lack of rainfall coupled with a heat can affect growth of a weak tree and fruit growth rate at this stage.
 - **Remember, if irrigation fails, fails nutrition (including the needed soil calcium uptake for Honeycrisp!).**
- **Codling moth cover spray late this week.** Codling moth second generation flight began June 26th. Using that biofix, larval insecticide sprays should go on late this week or over the weekend. Remember to use a different active ingredient for the second generation that what was used for the first generation.



- **Spotted wing drosophila numbers continue to be extremely low this summer.** After two females caught in drowning traps a week ago, none were caught this past week. Currently the risk of infestation seems to be quite low, although any ripening fruit of berries and cherries are theoretically susceptible to spotted wing drosophila. If you are interested in monitoring swd on your own farm, in order to possibly skip sprays in a low-swd years like this one, let me know. I will gladly help you learn how to look for swd males on red sticky traps.
- Secondary **scab** season is in full swing now that we finally got a couple decent rainfalls. Foliar symptoms are present in many blocks. In blocks with foliar scab, consider single-site products such as Aprovia, Cevya, Flint, Fontelis, Inspire Super, Luna Tranquility, Luna Sensation, Merivon, Miravis, Rally, Rhyme, etc.

- **Summer diseases** such as **sooty blotch and flyspeck, black rot, white rot and bitter rot** are a main focus as we move into mid-summer.
 - The upcoming rains and humidity will make for ideal infection conditions for sooty blotch and flyspeck. According to the [NEWA model](http://newa.cornell.edu) (newa.cornell.edu), we are now in an infection period. **In general, fungicide covers for the rots go on every 14-21 days, or if we receive 2" of rain.** If you input the date of your last fungicide application that was effective against SBFS you can get more targeted timing recommendations for your farm.
 - Products that are effective for SBFS include **Flint Extra, Inspire Super, Luna Sensation, Merivon, Pristine, and Sovran.**
 - These products will also help manage black, white, and bitter rots.

On The Horizon

Apple maggot flies have not yet been seen in our baited monitoring traps. A suggested action threshold is when 5 or more adults are caught on a baited red sphere trap per week. Planning ahead, apple maggot management options include Altacor, Assail, Avaunt, Delegate, Exirel, Imidan, Verdepryn and the pyrethroids.

Brown marmorated stink bug traps have not yet been set up. However, I have seen damage that I believe was caused by stink bug feeding on apples already this year. If you plan to monitor for stink bugs, set out those traps soon. Looking ahead, **Brigade 2EC and Brigade WSB are both now registered for use on apples against stink bugs (plus several other insect species) in NY.** Keep in mind that you will need to purchase and use only 2022 or 2023 product that has labeling for use on apples and against stink bug for the use to be legal. You cannot use up your old products when applying for stink bug control.

Good to Know!

Organic matter tends to act like a sponge: It holds water and nutrients in the soil and releases them slowly over time. Soil scientists report that for every one percent of organic matter content, the soil can hold 16,500 gallons of tree-available water per acre of soil down to one foot deep.

- **Increased water holding** is an important characteristic in our soils of Western NY. It is even more crucial in blocks without trickle irrigation. At this time of the year, a mature spindle tree needs around 4-5 gallons of water per day to keep up with tree evapotranspiration needs. Water stress can lead to small-sized fruit and calcium disorders, like bitter pit in Honeycrisp. Young trees need only small @ 2-3 gallons/tree/day, 2-3 times per week, but frequent doses of water for additional tree growth this year
- **Soil organic matter acts like a bank for soil nutrients.** Think of each of the negative charges on an organic matter particle like a **parking spot** for a nutrient ion. Cationic nutrients, such as calcium (Ca^{2+}), are parked and ready to be knocked out into the soil solution where tree roots can access them. Root exudates from tree's rootstocks help "knock" nutrients into solution by trading these nutrients (such as calcium) with hydrogen ions. The higher the cation exchange capacity (CEC), the more of these parking spaces for nutrients are present in the soil. More nutrients can then be held instead of being washed away into deep soil layers where trees cannot access them.
- Organic matter not only banks nutrients but also supplies **nitrogen through mineralization.** Organic matter contains about five percent nitrogen, and two to four percent of this is mineralized every year. For example, a soil with three percent organic matter can make available sixty pounds of nitrogen per acre every year (as long as soil organic matter is maintained).

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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