



Cornell University  
Cooperative Extension

## Lake Ontario Fruit Program *Your Trusted Source for Research-Based Knowledge*

**“Fruit Facts” – Tuesday, June 20<sup>th</sup>, 2023**

**Mario Miranda Sazo, Janet van Zoeren and Anya Osatuke**

We want to thank the several growers from both sides of the city that sent more than 50 employees to the Bilingual IPM school in Sodus last Wednesday June 14: The bilingual IPM fruit school in Sodus was a great success and was offered with a substantial amount of funds provided by Dr. Alejandro Calixto, Director of the NYSIPM, Cornell AgriTech, Geneva, NY. Funds for the school were also provided thanks to the continued support from the Cornell Small Farms Program Ag Team. We would like to send a special thank you note to **Farm Credit East** who decided to sponsor the lunch for this event for a second time this year! Many thanks!



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### **Next Thursday June 29<sup>th</sup> Twilight Meeting at Cornell AgriTech, Geneva NY**

Tree Fruit & Small Fruit Twilight Meetings AND lightning talks by grad students!

Where: Jordan Hall at Cornell AgriTech, 630 W North St, Geneva, NY 14456

Schedule:

At 6:30pm, join grad students doing apple research as they present their work in a lightning talk format

At 6:45pm, DEC credit sign in begins

From 7:00-8:30PM, join specialists Janet van Zoeren, Anya Osatuke, and Anna Wallis for a conversation about fruit and berry phenology and pest management

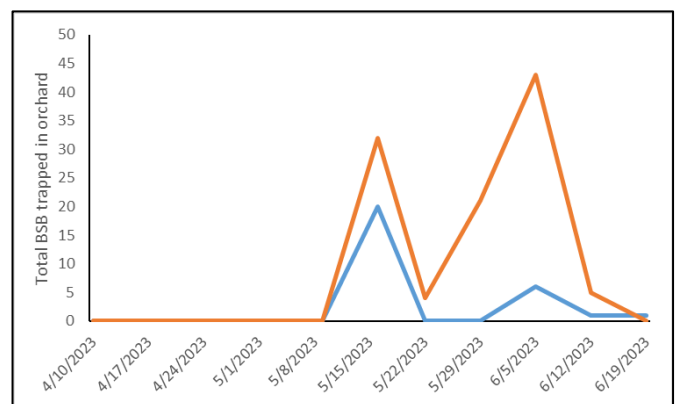
Snacks and light refreshments will be served. **1.5 NYS DEC credits** will be offered.

We hope to see you there!

## To Do Today

- **Earlier timing of return bloom sprays for Honeycrisp and Fuji:** For return bloom sprays to work the number of GA producing seeds on the tree must not be excessive. Because of the earliness of flower initiation of Honeycrisp, the sprays are sometimes too late.
  - For many years we have recommended for summer sprays spaced 10 days apart beginning June 21 (longest day of the year) of either 10ppm NAA or 1pt of Ethrel. This timing is usually when fruits are >25mm in diameter.
  - Earlier timing of return bloom sprays should help ensure return bloom (if seed load is not too high)
    - This week inland sites and lake sites should spray the third and second return bloom sprays for Honeycrisp and Fuji, respectively
    - 4 sprays of Ethrel at 10-day intervals beginning when fruit are 16mm
    - The first 2 spray could cause thinning if rate is high and temperatures are above 85°F
- **Hand thinning is underway:** The earliest inland sites began hand thinning two weeks ago and heavy Galas in lake sites started to be hand thinned early this past week. Ideally, Galas and NY-1s should be hand thinned by now.
  - Most Honeys should finish the hand thinning job by the end of next week.
  - Late lake sites should start the 26.
  - Some honey growers are still very hesitant to touch them due to the multiple /delayed stages of chemical thinning/cluster separation has been tricky.
  - You can still wait a few more days while June drop is still underway.
  - Finish Gala and NY-1 as soon as you can this week.
- **For seeding in late June/early July, there are really only two cover crop choices at this time:** One is sudangrass, or sorghum-sudangrass, and the other is buckwheat. Both grow rapidly in the summer warmth. WNY growers who are planning to plant a new orchard site (or a replant site) next year can consider the use of cover crops before planting an orchard. Their benefits are numerous. When used they can:
  - improve organic matter
  - break up compaction layers in the soil profile
  - suppress weeds
  - control erosion
- **Sudangrass and buckwheat have different properties, so the management goal and field condition will determine which is the right for you:**
  - **Sudangrass** is often chosen for **improving soil organic matter**. It produces a strong root system and lots of biomass. The deep root system helps reduce subsurface hardness. Sudangrass is also a good choice for reducing root-knot nematode pressure.
    - Sudangrass is suitable for short, 8-10 week plantings. Seeding rates are 30 lbs/acre for biomass and nematode control and 50 lbs/acre for weed control.
    - Seeding rates are June through mid-August (for sudangrass)
    - Seeding rates are July through mid-August (for sorghum-sudangrass)
    - This grass grows very fast, so keep an eye on it. Mow the first time when it reaches 3 feet and the second time while the flail mower can still chop it well.
    - If sudangrass gets too big to control, it will be killed by frost and make a nice winter mulch. However, the biofumigant effect will be lost.
    - Sudangrass needs a final flail mowing and immediate incorporation to suppress nematodes.
    - We have seen good results with the additional strip-seeding of radish tillage (by the end of August/early September) in the future in-row spacing of an orchard to be planted the following spring
  - **Buckwheat** is best known for **weed suppression and mellowing the soil**. It covers the ground earlier than sudangrass, especially if seeded in early June, and outcompetes weeds that may establish in sudangrass. Sudangrass requires a higher seeding rate for effective weed suppression.
    - Both cover crops should be mowed after about 40 days. This is the end of the season for buckwheat, but the beginning of major root growth for sudangrass.

- To avoid volunteer buckwheat seed, kill the crop before there are filled green seeds on the plant. This takes about 40 days from a July planting or 50 days from a June planting.
- Buckwheat seed is available from some local farm seed retailers and is relatively cheap. The variety does not matter, and many suppliers don't identify any variety. A bag is enough to seed an acre.
- **You can also improve soil water holding capacity and nutrient availability by improving your soil organic matter content for more sustainable apple production.** Organic matter tends to act like a **sponge**, holding water and nutrients in the soil and releasing 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 the beginning of this 2022 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
  - **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 ( $\text{Ca}^{2+}$ ), 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).
- **Woolly apple aphid** management begins as soon as you start seeing aerial colonies. **Sefina** is a new product labeled in NYS for "suppression" of WAA. **Assail** (plus Regulaid), **Movento** (plus Regulaid), **Beleaf**, **Sivanto Prime**, **Senstar** (contains Movento), and **Diazinon** (if your market allows) are other recommended products.
- **Mites are present** in many orchards. Scout the underside of leaves to catch population increases now. If you find high populations, there are a bunch of highly effective products you can use: Agri-Mek, Apollo, Onager, Savey, Zeal, Kanemite, Nexter, Portal, Acramite, Envidor, Nealta, Banter, etc.
- **Continue powdery mildew coverage.** This is shaping up to be a bad year for PM. Some control options include Flint extra, Inspire Super, Luna Sensation, Merivon, Miravis, Rally, and others.
- **Oblique banded leafroller** is currently mid-flight. According to the degree day model, caterpillars will begin to hatch around the end of the month. However, in most orchards I am scouting this year, populations have not reached the ~15 per trap per week threshold for OBLR management.
- **Codling moth and OFM flights tapering off.** Make sure the second CM cover spray has gone on.
- **Black Stem borer** first generation flight ended last week. Despite starting earlier than usual, numbers were not particularly high in the orchards this year (see graph at right). The takeaway here is that beetles are not currently creating new galleries, but to continue to keep an eye on problem blocks where you know trees are stressed, to watch for entry holes and tree decline.



## **Pear**

- **Pear psylla** has been prevalent this year. For summer monitoring, examine ~ 10 recently expanded shoot leaves per tree on ~5 trees per block. The action threshold during the summer is an average of 1.5 nymphs per leaf. We recommend you **remove water sprouts** from your pear trees in late June in blocks susceptible or at threshold for psylla. If an insecticide is necessary, be sure to rotate products frequently – pear psylla can develop resistance quickly and we need to keep all our options available for as long as possible.
- **Fabraea leaf spot**. If you have had Fabraea in your peach block previously (note Bosc is especially susceptible), you will want to keep trees covered now through July 4<sup>th</sup>. Options include Topsin M, Ziram, Manzate and Syllit.

## **Stone Fruit**

- **Sweet cherry** early varieties are starting to color up. Fruit can be fed on by spotted wing drosophila as soon as it begins to color/soften. **SWD was trapped in Yates county**, but has not yet been caught in the Lake Ontario region. SWD trap catch will be reported immediately here as well as on the SWD blog (<https://blogs.cornell.edu/swd1/>).
- **Peach Diseases (rusty spot, bacterial spot, brown rot)**. Captan, Miravis, Inspire Super, and Merivon will control brown rot and peach scab. Be sure to rotate active ingredients to delay resistance. The addition of a copper (i.e. Cueva) will help blocks with a history of bacterial spot.

## ***On The Horizon***

**Next week (after the longest day of the year ‘summer solstice’ tomorrow Wednesday June 21) we should start thinking about mechanical summer pruning of 2-D Tall Spindle Premier Honeycrisp trees:** We encourage growers to target their mechanical summer pruning time based on the fruit size characteristics of the apple cultivar instead of the exact number of leaves per shoot at a particular time during the growing season. This timing approach to mechanical summer pruning has become a more practical method. Therefore, for large fruited varieties like **Honeycrisp** (where we intentionally want to control or reduce an excessive fruit size at harvest) we recommend an “early” timing for mechanical summer pruning. Under current WNY weather conditions, a mechanical summer pruning program should be started for Premier Honeycrisp next week (after the summer solstice this past Tuesday).

- A “late” timing should be used for small fruited varieties like **NY-1** and **Gala** to avoid a negative effect on crop size reduction before harvest. Varieties like Gala, Ambrosia, NY-1, and NY-2 should be done approximately 2 to 3 weeks before harvest to facilitate the use of harvest platforms and/or equipment for harvest.
- Medium fruited varieties should be mechanically summer pruned after Honeycrisp and before Gala to have the same controlling effect on fruit size (from about July 15 until early August).

**Also, start thinking about Honeycrisp fruitlet collection for peel sap in 2023 and early leaf sampling collection only for Honeycrisp. More reminders later!**

**Bitter rot** management will begin in late June. We will discuss bitter rot biology and management more in the next issue.

The next week or so will be the critical period to watch for **Fire Blight strikes**. If you find oozing shoots, apply a labeled liquid copper (i.e. Previsto, CS 2005, Cueva, Badge SC) product to dry out the ooze. If you have a lot of FB in a block, you may want to consider applying prohexadione-calcium (i.e. Apogee, Kudos) at the highest rate for the planting (6-12 oz/100 gal, or 3-6 oz/100 gal for young orchards). This will shut down shoot growth, but may save the tree. Allow 5 days for the product to take effect, then prune out any shoot blight strikes. Contact me if you’d like a sample sent in for resistance testing.

## Good to Know!

**Carbon: Nitrogen effects on nutrient cycling (the importance of C:N ratios):** Cover crop management choices must strike a balance between crop residues covering the soil and nutrient cycling. An awareness of crop C:N ratios is necessary to select crop types and keep a cropping sequence on the right path toward sustainability, that of the ultimate **C:N ratio of 24:1** that supports soil microorganisms (review Table 1).

- Understanding carbon to nitrogen ratios of crop residues and other material applied to the soil is important to manage soil cover and crop nutrient cycling.
  - Providing quality habitat for **soil microorganisms should be the goal of NY fruit growers interested in improving soil health.**
  - Soil is a biological system that functions only as well as the organisms that inhabit it.
- Managing residues so they cover the soil when a growing crop is not providing soil protection requires some planning and experimentation to achieve a proper balance.
  - If crops with high C:N ratios are always grown as cover crops before establishing an apple orchard, residues will accumulate on the soil surface, and nitrogen for tree growth may be scarce unless supplemented with other sources of nitrogen.
  - This may result in poor crop performance during times when soil microorganisms tie up nitrogen while working to decompose high C:N ratio crop residues.

Table 1. Carbon to nitrogen ratios of crop residues and other organic materials

Material	C:N ratio	Relative Decomposition Rate
Rye straw	82:1	<b>Slower</b> ( being rye straw the slowest)
Wheat straw	80:1	
Oat straw	70:1	
Corn stover	57:1	
Rye cover crop (anthesis)	37:1	
Pea straw	29:1	
Rye cover crop (vegetative)	26:1	
Mature alfalfa hay	25:1	
<b>Ideal Microbial Diet</b>	<b>24:1</b>	<b>Ideal decomposition rate</b>
Rotted barnyard manure	20:1	<b>Faster</b> (being soil microbes the fastest)
Legume hay	17:1	
Beef manure	17:1	
Young alfalfa hay	13:1	
Hairy vetch cover crop	11:1	
Soil microbes (average)	8:1	

Source: USDA Natural Resources Conservation Service ([www.soils.usda.gov/sqi](http://www.soils.usda.gov/sqi))

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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