



“Fruit Facts” – Wednesday, July 19th, 2023
Mario Miranda Sazo, Janet van Zoeren and Anya Osatuke

Tree Fruit and Small Fruit Twilight Meeting:

7pm on July 27th at Burnap’s Farm Market and Garden Café, 7277 Maple Ave ext., Sodus, NY.

Join specialists Anya Osatuke, Anna Wallis and Janet van Zoeren for a conversation about fruit and berry phenology and pest management.

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.

Time: 7:00-8:30pm EST

1st Annual Western New York Fruit grower Tour: ‘Growing Better Together’.

When: July 28th

See agenda and further information in the Fruit Notes publication, or contact any of us for details.

To Do Today

- **Quick update on where we are on ‘Honeycrisp’ peel sap analysis this week:** Our lab team finished squeezing about 250+ samples on Tuesday around 2:30pm, and we will start peel sap N analysis on Thursday. ICP analysis on all these 250+ samples and N analysis on sap samples collected from grower blocks will be completed early next week. We plan to summarize results and get started on sending recommendations out to growers after the WNY fruit tour next week on July 28!
- **Irrigation reminders for blocks with low soil moisture conditions/light soils with low water holding capacity:**
 - Water stress at any time of the season reduces fruit growth rate with permanent loss in fruit size, which is difficult to recover later.
 - Also, very dry soil conditions can reduce the availability of nitrogen, phosphorous, potassium, calcium, and boron to tree roots.
 - Don’t be afraid to turn on the irrigation in young blocks and mature plantings if rainfall doesn’t occur at your site the next few days, or if very hot conditions continue in WNY.
 - 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 ‘green trees’ orchards) 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!).**
 - Honeycrisp, Gala, and NY-1 fruit producers should not be afraid to turn on trickle irrigation in young blocks and mature plantings with the hot/haze weather experienced in the last 2-3 days in our region.
- **Sunburn: Apples Become Susceptible to Sunburn at about 38 – 40 mm fruitlet diameter – or Roughly Golf Ball Size:** Sunburn can be caused by either heat or light, or both. When caused by heat, ambient air temperature is not as important as fruit surface temperature. Each variety has its own fruit surface temperature threshold for sunburn to occur. Some varieties, like Cripps Pink, require a very high FST – something like 120° F. Other varieties have a much lower threshold. For example, sunburn occurs on Cameo when the FST reaches 115° F. Many of the newer managed varieties appear to have an even lower FST threshold, Minneiska appears to be one of those as does Smitten.

Types of sunburn: Sunburn caused by light can be from UV-A, UV-B, or both. There is also another type of sunburn called photo-oxidative sunburn that is caused by sudden exposure to light, as occurs after hand thinning, mechanical pruning, summer pruning, or re-positioning limbs by tying.

Best methods for preventing sunburn:

- The use of shade cloth. This reduces both heat and light exposure.
- Overhead evaporative cooling in combination with Raynox. The cooling prevents / reduces sunburn caused by heat, and the Raynox prevents / reduces sunburn caused by both heat and light.
- Best is overhead evaporative cooling by itself, but this is only effective for sunburn caused by heat.

Sprayable protectant materials:

These basically come in two categories – **particle films like Surround (Kaolin clay)**, and the **calcium carbonates like PurShade**. There are others as well, but these all work by creating a whitish film on the apple that reflects both heat and light. These will typically reduce sunburn incidence by up to 50%. The problem with these is that they do leave a heavy white film on the apple that can be very difficult to remove from the fruit on the packing line, especially from the stem bowl and calyx where brushes can’t reach. Also, bi-colored apples do not color well under these coatings. Under heavy splotches and droplets, the fruit develops a mottled appearance.

The other sprayable protectants are the Raynox brands: These are a carnauba-based waxy matrix that filter light and reduce FST. These also typically reduce sunburn incidence by about 50%. These do not leave the heavy white film residue, so fruit colors normally underneath, and there are no issues on the packing line. There are a couple of different formulations of Raynox – Raynox; Raynox Plus; and Raynox Organic. Regular Raynox requires the addition of a water conditioner, and it contains two emulsifiers – one of which is morpholine. Morpholine has a low or no MRL tolerance in many export markets, so a grower should check with his/her packer before using it. Raynox Plus needs no water conditioner, and uses a nonionic emulsifier so there is no morpholine to worry about. Same with Raynox Organic.

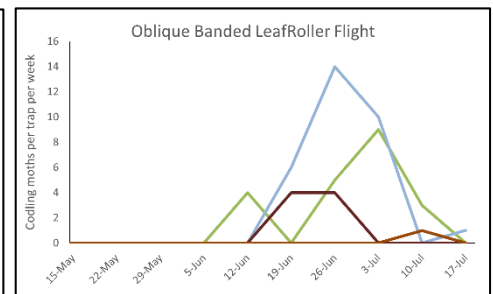
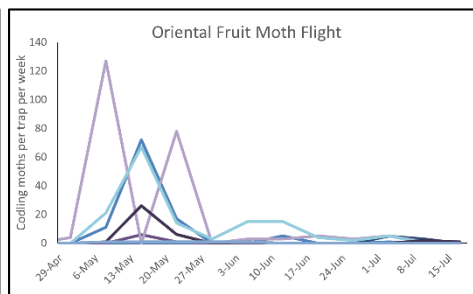
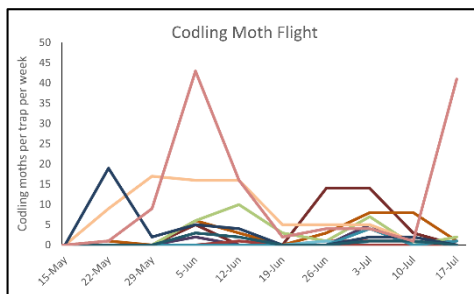
If growers have a hot spell coming up, it would certainly be worthwhile to get ahead of that with one of the sprayable protectants. While not as effective as starting the program earlier (apples become susceptible to sunburn at about 38 – 40 mm fruitlet diameter – or roughly golf ball size), it is better than doing nothing and should still provide enough protection to be worth the cost.

A couple of tricks that can help:

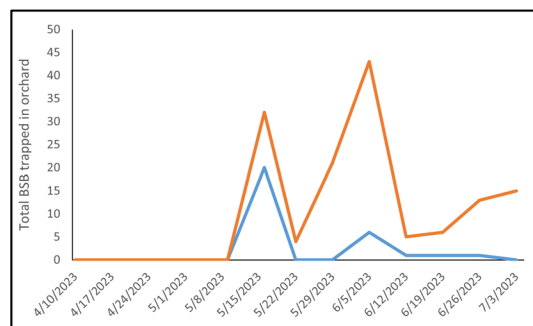
- If you have a tower sprayer that can apply from the top of the canopy down, those are more effective than traditional airblast sprayers because they apply the product where it is most needed.
- Also, if your rows are oriented North – South, you can spray only the west sides of the rows. Most sunburn comes from afternoon sun exposure, not morning.

If you do apply sprayable protectants, they should be applied in the morning before ambient air temperature reaches 85° F. One application should last for a few weeks until the fruit grows through it.

- **Brown marmorated stink bug** is present in WNY orchards. We set out traps last week, and have already trapped a single stink bug per farm at several locations. I have also already seen stink bug feeding damage at several farms. Although on the whole insect numbers (i.e. spotted wing drosophila, internal leps, black stem borer) have been fairly low this year, stink bugs often overwinter in our houses and so do not necessarily respond to the same winter temperature cues as do other insects, so there is no reason to expect a low or late stink bug season. There is no confirmed threshold for stink bugs on the clear sticky panel traps, although a cumulative four per trap has been suggested. If you do reach that threshold, or have reason to suspect stink bug damage in a block, Brigade is labeled for use against the stink bugs.
- **Spotted wing drosophila** has now been trapped across our entire region, and anyone with ripe or ripening susceptible fruits should be managing for SWD. Cherry growers please check out our SWD/ECFF quick guide to help determine best insecticide choices: https://rvpadmin.cce.cornell.edu/uploads/doc_1140.pdf. For more management recommendations, please visit: <https://fruit.cornell.edu/spottedwing/management/>.
- **Continue to watch for fire blight strikes.** Aside from following a hail event, do **not** use Streptomycin during summer fire blight season. If you do find strikes in your orchard, the best course of action is:
 - **Always cut strikes out.**
 - **If you find actively oozing shoots,** consider applying a labeled liquid copper (i.e. Previsto, CS 2005, Cueva, Badge SC) product to dry out the ooze. Remember that fixed coppers may cause fruit finish issues, so should be avoided in blocks not destined for processing.
 - Contact me if you'd like a sample sent in for resistance testing, or if you'd like to discuss fire blight management options for your orchard blocks.
- **Woolly apple aphid** is in full swing. Scout for colonies in the angle of a branch or twig crotch, or at pruning cuts. **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. These products will also be effective against **green apple aphids**, which continue to move into many blocks.
- **Codling moth, Oriental fruit moth, and Oblique banded leafroller flights are between generations.**



- Black stem borer second generation flight is beginning:



Berries

- Foliar sampling season runs from mid-July through mid-August
 - Now is the time to collect foliar samples for blueberries, strawberries, and raspberries. Labs that analyze foliar samples include Dairy One in Ithaca, NY, and Waters Agricultural Laboratory. Waters has multiple locations, but the closest site to New York is in Warsaw, North Carolina.
 - Foliar sampling can provide in-season guidance for plant nutrient needs. Compared to soil sampling, which is done in the fall and gives information on physical soil conditions and status of most nutrients except for N, foliar sampling can provide information on whether N needs are being met, and whether the soil pH is

adequate for nutrient absorption. Waters offers additional services for a fee: foliar aluminum, chloride, molybdenum, and sodium levels.

- For all berries, collect foliar samples between mid-July and mid-August. Samples are typically 50g, which translates to about 40 leaves. Leaves collected should be the youngest fully matured leaves. Just like a soil sample, growers should sample each planting separately, and sample poorly performing sections separately as well. Sampling from a wide area within each section in a zig-zag pattern will improve the accuracy of the results. Samples are collected in a paper bag to avoid decay in trapped moisture.
- Strawberry foliar samples should be collected after renovation is complete and the strawberry leaves have had time to emerge from the crowns and mature. Dayneutral strawberry growers sometimes prefer SAP analysis—this one is performed only by Waters—as the test results are returned faster. For SAP analysis, only the petiole is sampled and the leaf itself is not sent in.

Good to Know!

Using Surround to reduce Honeycrisp Fruit Size?

A NY grower recently asked if the use of Surround could reduce Honeycrisp fruit size. Below is his/her question and the responses he/she got from two of our Cornell Professors.

Grower 1: I have a full crop of Honeycrisp. Yet, they are sizing too rapidly. My question is, can I use Surround sprays to lessen photosynthesis. My theory being, less photosynthesis, slower apple sizing. However, I am also concerned that spraying the clay-based material could also inhibit calcium absorption. Could I spray calcium and then cover with the Surround? Is it possible that trying this will do more harm than good?

Dr. Lailiang Cheng:

- Glad you have a full crop on your Honeycrisp! Here is my take on the situation. The rapid fruit growth is primarily driven by water from all the rain we have had. Spraying your trees with Surround may increase light reflection of the leaves, but its reduction on photosynthesis would be small and its effect on fruit growth would be even smaller. Unless you traditionally have sunburn pressure, I would not spray Surround solely for the purpose of reducing photosynthesis. Surround spray may have the potential to reduce Ca uptake into the fruit, but I don't have any data on this. I think Surround stays much longer on the fruit surface than Ca. I suggest keeping up with your Ca sprays considering your fruit size is bigger than normal.
- A ProTone (ABA) spray would temporarily induce leaf stomatal closure and reduce photosynthesis for 3 to 5 days and improve Ca uptake into the fruit at the same time. However, it's too expensive for repeated applications (4 to 5 applications) to have a significant effect on bitter pit (and possibly fruit size).
- As it's only mid-July, rapid fruit growth is okay. I hope we'll have some dry weather come August. If it were still this wet in mid-August, I would be worried about oversized fruit and lots of bitter pit at harvest.

Dr. Terence Robinson:

- A number of studies on Surround have shown that it does not reduce fruit size since the shading effect of the clay often reduces the heat load on the leaf and can give greater net photosynthesis. This is especially true in high light climates like WA and CA. We have primarily used surround in our organic research block and don't see a negative effect in fruit size.
- The best approach to reducing fruit size would be to cut the water supply. Tough to do in our climate especially this year but a least don't add any irrigation and hope for a dry August.

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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