



“Fruit Facts” – Friday, June 24 2022

North American Strawberry Growers Association Summer Tour

August 16 & 17, 2022; Ontario, Canada

This year’s tour will feature 8 very different farms all with great stories to tell and fantastic operations to see and learn from. Most of the featured farms have been active NASGA members and are very progressive innovative growers. There is so much to see in a short time we will be challenged to stay on schedule. We hope you will join us in Ontario for this memorable tour.

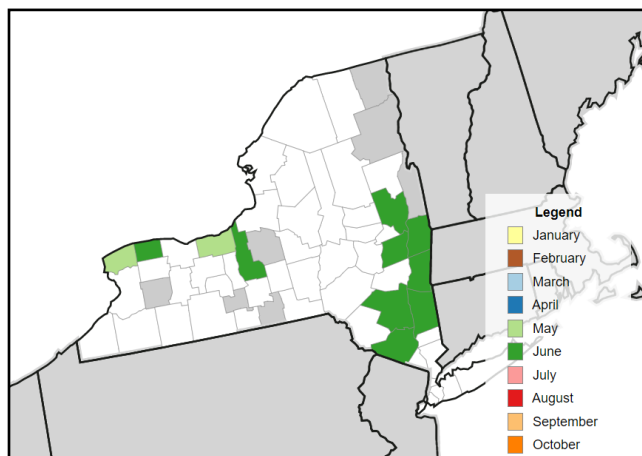
For more information and to register: <https://nasga.org/n-american-strawberry-growers-summer-tour.htm>

IPM Notes...Janet van Zoeren

Spotted wing drosophila has now been caught, at low numbers, in traps across the Lake Ontario region (see map at right). Although we are not yet at “sustained trap catch” (i.e., we have not yet trapped swd in any location two weeks in a row), I highly recommend **anyone with any susceptible fruit begin controlling for spotted wing now**. Fruits of susceptible crops can be attacked as soon as they begin to blush or soften. Susceptible crops include raspberries, blackberries, cherries, blueberries, peaches, and thin-skinned grapes.

Spotted wing can be managed using a combination of cultural and chemical practices. You will need to be diligent.

- **Excellent sanitation will reduce SWD populations.** Fruit should be harvested frequently and completely to prevent the buildup of ripe and over-ripe fruit. Unmarketable fruit should be removed from the field and either frozen, “baked” in clear plastic bags placed in the sun, or disposed of in bags off-site. This will kill larvae, remove them from your crop, and prevent them from emerging as adults.
- **Cool berries immediately.** Chilling berries immediately after harvest to 32° – 34° F will slow or stop the development of larvae and eggs in the fruit. U-Pick customers should be encouraged to refrigerate fruit immediately to maintain fruit quality at home.
- **An open canopy and dripline irrigation will make the environment less favorable.** Prune to maintain an open canopy, increase sunlight and reduce humidity. This will make plantings less attractive to SWD and will improve spray coverage. Repair leaking drip lines and avoid overhead irrigation when possible. Allow the ground and mulch surface to dry before irrigating.
- **Insecticide sprays will kill SWD adults and thereby reduce egg laying.** Insecticide treatments should begin at first SWD trap catch when highly susceptible fruit crops, such as raspberries and blackberries, begin ripening. Insecticides should be re-applied at least every seven days and more often in the event of rain. Choose the most effective insecticides with pre-harvest intervals that work for your picking schedule. Rotate insecticides according to their modes of action. Quick reference guides can be found on our [LOF webpage](#):
 - [Tree Fruit and Grapes Guide](http://www.hort.cornell.edu/fruit/pdfs/swd/treefruit-grape-insecticides.pdf) <http://www.hort.cornell.edu/fruit/pdfs/swd/treefruit-grape-insecticides.pdf>
 - [Berries Guide](https://rvpadmin.cce.cornell.edu/uploads/doc_981.pdf) https://rvpadmin.cce.cornell.edu/uploads/doc_981.pdf.



You can also learn more about regional monitoring efforts for spotted wing, as well as tips for management of this pest, on the NYS IPM SWD webpage (<https://blogs.cornell.edu/swd1/>).

Internal Leps:

Oriental Fruit Moth first generation flight has tapered off, and second generation flight will begin in a week or two. **Codling moth** flight is still in the first generation 'b peak'. No application is necessary at this time.

Oblique banded leafroller DDs are now at ~100-150 of the 350DD we should accumulate prior to insecticide application. Expect to time an insecticide for OBLR mid-week next week, if you have high populations of this pest.

Woolly Apple Aphids are showing up. The fuzzy colonies are usually found in the angle of a branch or twig crotch, or at pruning cuts. Some of the products that will help manage WAA include Assail, Beleaf, Senstar, Sivanto Prime, and Diazinon (if your market allows). **If you do find a WAA colony, please contact me – the Apple Rootstock Breeding Program in Geneva, NY is collecting individuals for genetic mapping of this pest.**

Mites. Consider scouting the underside of leaves for European red mite. 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, or Banter. If you already applied for ERM, be sure to rotate to a new IRAC code.

Fire Blight continues to show up in orchards across the region, especially the further you go from the lake. Even if you timed all your sprays perfectly and used all the recommend products, the combination of high inoculum from last years outbreaks, along with ideal weather conditions for *E. amylovora*, AND on top rattail bloom ... means no one is guaranteed to be in the clear this year. 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.

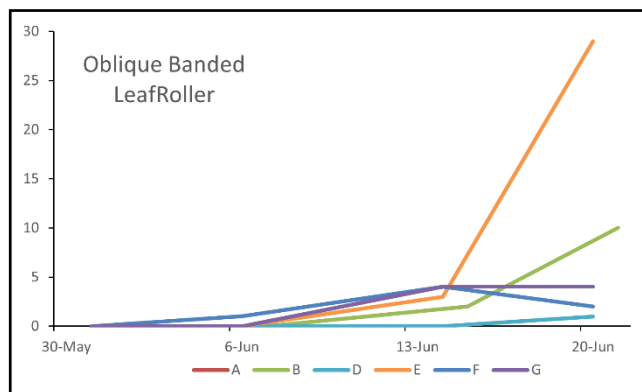
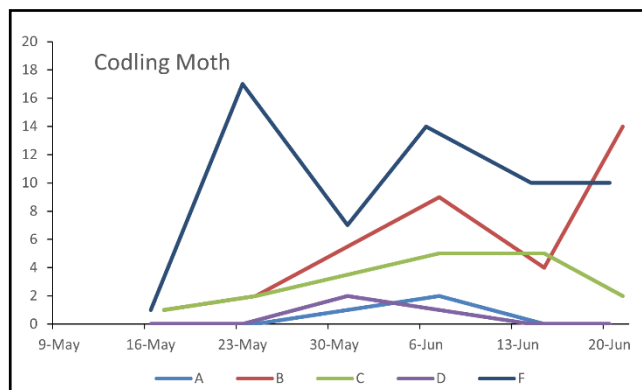
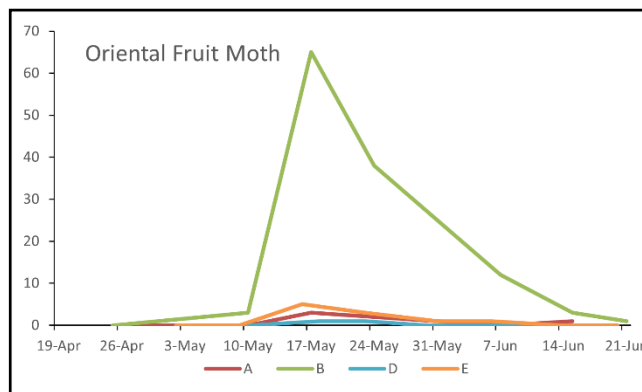
Powdery mildew is quite prevalent in locations where it has been a problem historically. Continue to cover for PM approximately every 14 days until terminal bud set, rotating models of action. Options for PM include **Flint extra, Inspire Super, Luna Sensation, Merivon, Miravis, Rally, Sovran** and others.

Pear.

Pear psylla. If you had any signs of psylla this spring, remove water sprouts from your pears trees in late June in blocks susceptible to or at threshold for psylla. This will remove their best summer food source, keeping populations in check.

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 4th. Options include Topsin M, Ziram, Manzate and Syllit.

Any questions about pest management, please call or email me: jev67@cornell.edu, 585 797 8368.



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 (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).

Carbon:Nitrogen ratio 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	Slower (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	
Ideal Microbial Diet	24:1	Ideal decomposition rate
Rotted barnyard manure	20:1	Faster (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)

Start thinking about Honeycrisp fruitlet collection for peel sap in 2022: In early July we will begin a cooperative effort between Cornell extension, growers, consultants and storage operators to collect Honeycrisp fruitlets statewide to analyze them for mineral nutrient concentrations. This is part of a statewide extension effort funded by ARDP for a second year to evaluate Honeycrisp orchards throughout the state for determination of fruit storage potential and the risk of bitter pit in storage.

Peel sap cost for NY fruit growers will be minimal (\$5/sample): We would like to encourage all Honeycrisp growers to start thinking about which Honeycrisp blocks (or ideally all blocks at your farm) you would like to collect fruit for peel SAP analysis this July 2022. We are specially inviting all packinghouses and their Honeycrisp fruit growers to submit peel samples to CCE this season. There will be a **minimal fee of \$5 for each sample submitted**, but most of the analysis cost will be covered by the

ARDP grant we were awarded. More information about timing for fruit collection, peeling protocol, and sample submission will be available in a coming CCE LOF newsletter article to be sent next Wednesday June 29.

Leaf sampling collection for Honeycrisp starts next week: In the last two 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 next **Wednesday June 29 through Friday July 8 in WNY**. Specific dates for inland and lake sites may change based on crop load, rootstock choice, the onset/severity of zonal leaf chlorosis, etc. There are two reasons for this early leaf sampling: 1) Honeycrisp trees typically stop their shoot growth by the third week in June, earlier than many other apple varieties; and 2) development of zonal leaf chlorosis (Figure 1) affects leaf nutrient concentrations, particularly leaf nitrogen status.



Figure 1. Honeycrisp leaves on the outer part of the canopy began to show the first stages of leaf chlorosis a week ago or earlier in some cases. The discoloration starts on the edges of the leaves and spreads to the rest of the leaves. Development of zonal leaf chlorosis affects leaf nutrient concentrations, particularly leaf nitrogen status. Honeycrisp growers should collect Honeycrisp leaf samples for nutrient analysis at the optimal time frame as suggested today.

Next week 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).

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 2022. 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.