



“Fruit Facts” – Tuesday, June 6th, 2023
Mario Miranda Sazo, Janet van Zoeren and Anya Osatuke

Register Your Spanish- and English-speaking employees for the Bilingual IPM WNY Fruit School

When: Thursday June 14 from 8:30 a.m.- 3:30 PM (attendance is free, lunch included thanks to a generous support provided by Farm Credit East)

Place: Bible Baptist Church of Sodus, Wayne County
6181 Ridge Rd., Sodus, NY 14551

Register your employees by this Friday June 9

Registration: <https://cals.cornell.edu/new-york-state-integrated-pest-management/outreach-education/events/escuela-bilingue-de-mip-en-frutas>

This event in Spanish and English brings the farming community together to learn more about pests and diseases in apple orchards, pesticide safety, soil health, and leadership.

- This is also an opportunity to meet other farm employees, share ideas and experiences, and connect with agricultural service providers!
- Join the NYS Integrated Pest Management, Cornell Small Farms Program, CCE Lake Ontario Fruit Program and New York Soil health program for a Spanish/English IPM Field day!
- If you require more information or special accommodations or if you need to register more than one person please send an email to Diana Obregon in English or Spanish: do265@cornell.edu

Berry Office Hours Have Started: Join us at 8am via Zoom!

Berry office hours are held virtually and hosted by Laura McDermott, Eastern New York Berry Specialist, and Anya Osatuke, Western New York Berry Specialist. Office hours will be held every Thursday morning from 8:00am until 9:00am.

We will discuss phenology and seasonal phenomena; come chat berries with us!

Zoom link: <https://cornell.zoom.us/j/98502767693?pwd=amd4SEhBZDI5VSt1T0ZyQkxVcU5jQT09>

Meeting ID: 985 0276 7693

Passcode: 12345

One tap mobile: +16468769923,,98502767693# US (New York)

Plan to attend the coming 2023 Virtual Orchard Meetup Summer Series 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 Thursday June 15 (first meetup will cover **cold stress**; invited specialists and growers will be announced next Tuesday June 6)

Time: 7:00-8:30pm EST

How to attend: Meeting 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 each meeting.

Next meetups/same 7:00-8:30pm EST: June 29 (water stress) and July 13 (heat stress)

To Do Today

- **Woolly apple aphid** aerial colonies have been spotted in certain low-spray hotspots in western NY. Now is the best time to scout your hotspot locations and to get a jump start on management in blocks where you had high populations in 2022. 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), **Beleaf**, **Senstar**, **Sivanto Prime**, and **Diazinon** (if your market allows) are other recommended products.
- **Apple scab infection may occur on Thursday**, especially in inland sites. However, keep an eye on the weather report and models to see if sufficient rain actually does occur. If you do spray for scab this week, stay away from Captan at this timing. Some products that Kerik Cox recommends for the week include Inspire Super, Merivon and Luna Sensation – those products will also help with powdery mildew and summer rots. Apple scab foliar symptoms began showing up in hotspot blocks this week.
- **Peak codling moth caterpillar emergence will occur ~Saturday across the region (Thursday inland west of Rochester)**. The best timing for an internal lep spray will be the end of the week. If you are monitoring for CM, **spray any block where more than 5 total codling moth have been trapped yet this spring**. Some good options for this first generation CM are the group 28s (Altacor, Exirel, Verdepryn), although there are many other options (i.e. Assail, Delegate, Imidan, Mustang Maxx).
- **Mites** generally tend to like hot dry weather. Although I’ve not yet seen many yet this year, 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.
- **Fire blight** could triggered in any blocks **with continuing open bloom**, when you apply thinners or cover sprays this week. The wetting from the spray is enough for the bacteria to infect open flowers.
- **Watch for powdery mildew**. Some locations have fairly extensive PM infection already this season. Some options for PM control include Flint extra, Inspire Super, Luna Sensation, Merivon, Miravis, Rally, and others.

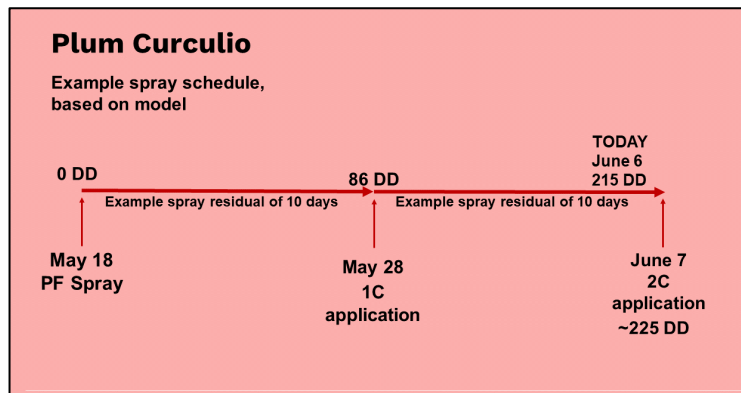
- **Continue to keep Plum Curculio coverage in your blocks!** Most farms will be at approximately second PC cover spray. Because plum curculio continues to oviposit until we reach 308DDs past petal fall, and we are currently at 180-225, all growers will need a second cover spray. Growers up along the lake may need a third cover – stay tuned.

Materials effective against PC include: Exirel, Imidan and Verdepryn (also control OFM), Actara (also controls Rosy apple aphid), Assail and Avaunt.

- **Email Bryan Brown at NYS IPM to learn about your weed seed bank.** We have funding to analyze weed seedbanks of 50 farms in this region. As a participant, you would get:

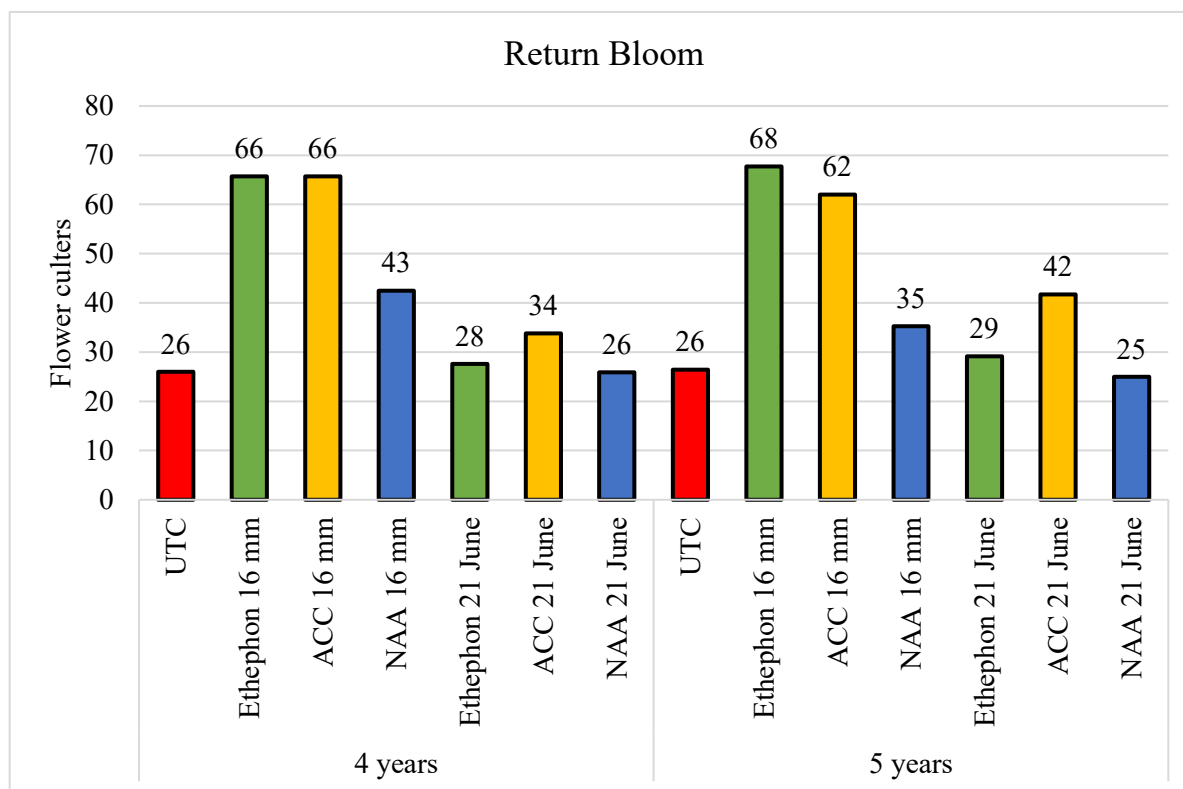
- a weed seedbank density and composition analysis of one field at your farm
- photos of identifying characteristics of each species
- a tailored weed management plan that addresses your seedbank based on your current equipment and crop selection
- a bar graph depicting the seedbank density of your farm compared to the other anonymous participating farms
- soil nutrient test results from the sample we collect
- a one-time participation payment of \$550

Bryan would need to collect a half-gallon of your soil in 2023; some info about your crop/weed management; an hour of your time in 2025 to discuss the results; and 5 minutes for a phone evaluation. Indicate your interest in participating as soon as possible by emailing Bryan Brown at bjb342@cornell.edu or leaving a message at 315-787-2432. We’re hoping to select a wide range of farms and locations, so **please tell us a bit about your farm**. We’ll select participants by July 1. There will be a couple forms to fill out, but we’ll try to make it as easy as possible for you.



'Return Bloom Sprays on Honeycrisp' by Luis Gonzalez, Mario Miranda Sazo, and Terence Robinson:

This week is the time (for inland sites) to begin applications of Ethrel or ACC (Accede®) for return bloom for strongly biennial bearing cultivars like Honeycrisp and Fuji. Last year the return bloom studies conducted by Dr. Luis Gonzalez, a Postdoctoral Associate at Cornell AgriTech in Dr. Robinson's program, showed that the best return bloom results in four- and five-year old Premier Honeycrisp trees were achieved by applications of Ethrel or ACC beginning at 16mm fruit size (results shown in the below graphic).



Based on these results, this year we are suggesting **two return bloom strategies** that growers can consider depending on the thinning efficacy they have achieved so far and the compounded effect of any cold damage they may have experienced. To make the decision on which of the two strategies is the best for you, carefully assess your thinning results for each block of Honeycrisp and/or Fuji. Almost all Honeycrisp and Fuji should receive these Ethephon or ACC sprays excluding those with a light crop or where the crop was lost due to frost.

Option 1: If your current level of thinning is still not adequate with many fruits in excess of the target fruit number. See below the summary Table 1 (marked in red color).

- Start the first return bloom spray using ACC+Regulaid when fruits are 16-18mm (approximately 21 DAFB). Estimated best timing could be this week June 5-9 for inland sites and next week June 12-16 for lake sites in WNY.
- Subsequent sprays use 300 ppm Ethephon or 400ppm ACC.
- We are not concerned about overthinning because there is not a large carbohydrate deficit expected with the low temps forecasted for the rest of this week.
- ACC is less temperature dependent than ethephon. Therefore, for growers who still may need some extra thinning we recommend the use of ACC instead of Ethephon for the first spray this week.

Option 2: If your current level of thinning is already close to the target fruit number. See below the summary Table 1 (marked in red color).

- There is no need for extra thinning and thus low rates of Ethephon or ACC are suggested.
- Spray 150ppm of Ethephon or 200ppm of ACC.

Table 1. Two return bloom strategies for Honeycrisp and Fuji that should be started this week (for inland sites) or next week (for lake sites) in the Western NY fruit region.

Options	16 mm	16mm + 7days	16mm + 14 days	16mm + 21 days
Option 1-Need more thinning	400 ppm ACC + Regulaid	300 ppm Ethephon or 400 ppm Accede	300 ppm Ethephon or 400 ppm Accede	300 ppm Ethephon or 400 ppm Accede
Option 2- Do not need more thinning	200 ppm ACC or 150 ppm Ethrel	300 ppm Ethephon or 400 ppm ACC	300 ppm Ethephon or 400 ppm ACC	300 ppm Ethephon or 400 ppm ACC

- **Other important reminders to keep in mind as we start the return bloom spray programs in WNY this or next week:**
 - Do not spray ethephon if temperature will be over 80's on the day of spray or the next 2 days.
 - It is OK to mix with CaCl₂ sprays for bitter pit, insecticides, or fungicides.
 - After the first spray at 7–10-day intervals apply 3 more Ethephon or ACC sprays but with a higher dose of 300ppm for ethephon or 400ppm for ACC.
 - Make sure the last Ethephon or ACC spray goes on by July 4.
 - After July 4, we suggest adding some NAA (4oz/acre) to each spray put on in July.
- **Multitask, wait, and assess crop load before making final rescue thinning decisions:** Growers should conduct quick fruit count assessments per tree before making final rescue thinning decisions.
- **Assess your crop load for each block and be ready to make final thinning decisions:**
 - If your crop load is **more than 2 times the target final fruit number** then you will need to spray a rescue spray
 - If your crop load is **between 1.5 and 2 times the target final fruit number** then you will need to use your own judgement whether to spray or not spray
 - If your crop load is **less than 1.5 times the target final fruit number** you won't need to spray a rescue spray
- **A few things to do as you wait and get closer to the 15-18mm fruitlet stage for final rescue sprays:**
 - Continue taking care of new trees and carefully look for fire blight
 - Install/finish trellis, deer fence
 - Start/finish grafting (train leaders/rub suckers from grafting projects you started last year)
 - Check for fire blight and be diligent
 - Start/finish weed sprays and nitrogen applications for on-farm nurseries and commercial blocks
 - Prepare/flush irrigation lines, to mention a few things this am!
- **Berming new stone fruit orchards:** Please remember that we recommend that all stone fruit species be planted on 12-18 inch high berms. Stone fruit trees are not very water tolerant and the additional height give more depth to the water table especially perched water tables that occur in the spring and fall. In addition, root growth is thought to be improved by providing additional oxygen provided by berming.
- **We will need another good period of warmer weather for Maxcel to stimulate branching of whips** in the orchard (also applicable to trees that were top- or side-worked last year). Please refer to past *Fruit Facts* for additional chemical branching information with the use of PGRs.
- **Calcium (Ca) accumulation occurs during the entire fruit growth period from petal fall to fruit harvest:** In addition to having proper soil pH and maintaining “calm” trees, a foliar Ca spray program is essential for bitterpit susceptible cultivars such as Honeycrisp. We have been recommending 3 to 4 cover sprays of 1 to 2 lbs of calcium chloride (78% CaCl₂) or its equivalent per 100 gallons (dilute basis) at 14-day intervals, beginning 7 to 10 days after petal fall, followed by 2 additional sprays of 3 to 4 lbs of calcium chloride per 100 gallons at four and two weeks prior to harvest. It is important to keep in mind that complete coverage of fruit is essential and more frequent spray is more important than exact timing of spray. Calcium chloride cannot be mixed with oil.

- **Target manual blossom removal and de-fruiting:** You should intensively manage and manually remove terminal flowers. Then you can chemically defruit one-year old trees to achieve sufficient leader growth and canopy development this season. For newly planted trees where you desire to totally eliminate the crop try the thinning rates as suggested by Dr. Robinson in the past.
- **Chemical thinning program for young trees:**
 - **For newly planted trees** where you desire to totally eliminate the crop try a high rate of Maxcel (64 ounces) + Sevin (2pts) + Oil (1pt) /100 gallon TRV dilute when fruit size is 8-10mm. Or , as soon as the bees are out, begin repeated heavy doses of carbaryl (2 pints/100 gallons) tank-mixed with Regulaid (1 pint/100 gallons)
 - **For 2nd year trees** where we want a small crop use only hand thinning and the Cornell young tree thinning guide to adjust crop load
 - **For 3rd year trees** use Sevin alone + follow-up hand-thinning
 - **For 4th year trees** use 1/2 of our suggested full rate of NAA + Sevin or Maxcel + Sevin
 - **For 5th year trees** use 75% of a full rate of NAA + Sevin or Maxcel + Sevin
 - **For 6th year trees** use a full rate of NAA + Sevin or Maxcel + Sevin
- **Don't rub the buds below the main shoot after planting:** We are not recommending this anymore. Wait until the 2-3 shoots (below the selected leader) have 4-6 leaves and clip them to two fingers length. This technique should be conducted before June 15 to minimize competition with the leader. By leaving two-three short stubs below the ring you will have renewal surface the following seasons and blind wood situations will be eliminated. It is imperative that you produce short, planar fruiting units (all along the trunk!) as we plant trees closer and closer in the in-row spacing.
- **Don't forget the "3 Ts" of corrective pruning:** After planting remove anything that is *Too* long, or *Too* thick, or *Too* narrow.
- **Maximize VERTICAL leader growth:** Leader growth is maximized when it is always well supported to the trellis by a rubber band or a wire loop. With young weak trees that have still a crop the unsupported terminal portion of the leader above the last wire should be defruited for maximum shoot growth and good lignification during years 2, 3 and 4.
- **Use your labor and time wisely and multitask effectively:** Cornell research has shown that blossom removal and removal of fruitlets (at 18.9mm fruit diameter) allowed the leader to put on 20% more growth the year of planting. This research found that there is not difference between blossom removal and small fruit removal suggesting that the window between blossoming and early fruit set is suitable for removing potential fruit that could interfere with tree growth.
- **Irrigation reminder for the orchard:** Be aware of the warm and dry weather at the end of May/early June, which can cause significant water deficits. We're in the middle of cell division and about to start cell expansion, water shortages at this point can be critic and hard to recover later on the season.

According to the apple irrigation model, a mature orchard in Western NY with about 1,156 trees/acre will have an average DAILY evapotranspiration of 3,500 gal/acre. A rainfall of 0.5 inches is ~ 9,500 gal/acre, so, unless we have some significant rain, we will have a considerable water deficit accumulated over the week. Check the NEWA apple irrigation model to be more accurate for your orchard.

Frequency of irrigation depends on soil type: With sandy soils, water should be added either daily or every 2 days. With silt or clay soils, the daily amount of water needed can be added up for several days.

Remember, if irrigation fails, fails nutrition.

Pear

- **Pear psylla.** If you had any signs of psylla this spring, continue monitoring through the summer. 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. This will remove their best summer food source, keeping populations in check. If a spray is necessary, be aware that most of the products that are effective against psylla will have off-target effects on natural enemies, so be aware of you the costs and benefits.
- **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.

Stone Fruit

- **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

Tomorrow Wednesday June 7 we plan to send a third update about our precision chemical thinning studies: For the first time this season we are presenting the results of precision thinning studies by using the Malusim fruit growth rate model and the Einhorn fruit size distribution model (developed by Michigan State University). We are very excited about these preliminary results.

Good to Know!

More technical information about the use of ACC (Accede®) provided by Dr. Poliana Francescato (Global Technical Development Specialist, Valent Biosciences) yesterday, thank you, Poli!:

ACC (Accede®, Plant Growth Regulator) is a new chemical thinner available for the **late thinning window of apples**. ACC can be applied from bloom to 25 mm king fruit diameter, however it shows best efficacy when applied from 15-20 mm after your regular thinning program.

- Apply ACC at a rate of 200 to 400 ppm during the 15 to 20 mm window. ACC rate will depend on the amount of fruit thinning required.
- For optimal response, use ACC with a non-ionic surfactant (such as Regulaid) at a rate of 0.125% v/v (16 fl.oz. per 100 gallons) in the spray tank.
- ACC can be tank mixed with Carbaryl or MaxCel if more thinning is required. However, limited data is available.
- Different from MaxCel that has limited efficacy below 65°F, or excessive efficacy over 85°F, ACC does work in extreme temperature conditions (low temperatures and high temperatures).

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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