Cornell University
Cooperative Extension

Lake Ontario Fruit Program
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"*Fruit Facts*" – Wednesday, June 7th, 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

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Berry Office Hours Have Started: Join us every Thursday 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=amd4SEhBZDl5VSt1T0ZyQkxVcU5jQT09

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

Strategies to Control Vegetative Growth in Frost Damaged Trees by M. Miranda Sazo and T. L. Robinson:
The May 18 frost event in our region in some cases resulted in insufficient crop loads to control tree growth and allow for good fruit bud initiation for the 2024 season. Both apogee and root pruning are useful tools in this situation. Where crop load is light or non-existent there are three important management strategies to consider:

- **Reduce or eliminate the application of nitrogen:** Growers who have either not applied nitrogen yet or have split their nitrogen application in two parts can reduce or eliminate further nitrogen this year. We suggest waiting another 1 week until a final assessment of crop load can be made and if there is a reasonable crop in a block then apply nitrogen at that time. Otherwise forego any more nitrogen this season (the soil will generate enough through the breakdown of organic matter).
- **Applications of Apogee can still help reduce excessive tree growth when crop load is light:** Although we are well past the best timing to apply apogee for maximum vegetative growth control, you can still apply a high rate of apogee (12-18 oz/acre) and get some suppression of vegetative growth. There are growers in inland sites that did not apply apogee early in the season and have lost more than 75% of their crop. Even though shoot growth is 10-12 inches or more by now they can benefit from an application of apogee. For those growers who already made a first application of apogee with a low rate, a second application of Apogee should be made 3 weeks later and if crop load is 75% or more a third application will be needed in late June. Growers who lost 100% of their crop should continue the Apogee sprays and apply a fourth spray by mid- or late July. One more apogee spray may be needed if we experience a very rainy summer season. We will see.
- **Root pruning at 20-30 days after full bloom can still be very effective in controlling excessive shoot growth:** There are three types of root pruners that can be used in our region: (1) the vertical knife-shank type, (2) the large coulter wheel type, and (3) an angled blade root pruner (built by Munckhof/distributed by Lagasse, Lyons, see pics below) recently introduced to WNY fruit growers this season. In soils without rocks, we recommend the use of a coulter wheel or the Munckhof root pruner over the knife-shank type since they don't cut as deep and minimize the damage of larger and deeper structural roots of more mature or older apple trees. At a recent root pruning demo hosted by DeMarree Fruit Farm (main farm), the Munckhof root pruner was not able to root prune a row of trees at a very rocky site when going up a hill. This root pruner has a strong blade that can make an angled cut 20 inches deep producing a more severe cut than the large coulter wheel type. The timing of root pruning is not as critical as the timing of the Apogee spray. When doing root pruning, try to maintain 8-10 inches of depth and run up both sides of the rows for maximum growth control (for non-cropping situations). The severity of root pruning is determined by the angle of root pruning and how close to the trunk the root pruning is done. For low-crop or non-cropping situations we recommend that the root pruner be positioned approximately 18 inches from the trunk (for high density dwarf apple plantings) and at 2-3 feet (for mature/older semi-dwarf apple plantings). With late blooming varieties where the thinning results and final crop load is not yet clear root pruning can be delayed another 15-20 days, or until the end of June.

Figure 1. A root pruning demo with a modern root pruner was conducted on a mature Wild Twist®/G.41 block at Cherry Lawn Farm in Alton, Wayne County on Monday May 8, 2023.

One of the main negative side effects of root pruning is the reduction of fruit size. If crop load is light and fruit size is excessively large, this may not be a bad side effect; however, the damage to fruit size can be even more detrimental if severe root pruning is followed by a severe drought in orchards without trickle irrigation.

Research we have done in the past has shown that root pruning alone (without the combined use of an Apogee spray program as recommended here) is much less effective in reducing the tree growth of non-cropping apple trees. Without Apogee, non-cropping trees regenerate roots quickly, and if environmental conditions are favorable, resume growth. However, when combined with Apogee a substantial growth reduction can be achieved in trees that have lost their crop due to frost.

Table 1. Vegetative control strategies for apple orchards that have already lost 50% or more of the 2023 apple crop as a result of the May 18 frost event in the Lake Ontario Fruit region.

Orchard Crop Situation	Apogee Use	Root Pruner Use
If 50% of the crop is lost	Apply apogee (12-18oz/acre) as soon as you can this week or during the weekend, followed by a second application 3 weeks later	Probably not needed
If 75% of the crop is lost	Apply apogee (12-18oz/acre) as soon as you can this week or during the weekend, followed by a second application 3 weeks later and a third application in late June	An alternative to the use of Apogee is root pruning which can be done at 18 inches from the trunk (dwarf planting), at 2-3 feet from the trunk (older semi-dwarf plantings), run up in both sides of the row.
If 100% of the crop is lost	Apply apogee (12-18oz/acre) as soon as you can this week or during the weekend, followed by a second application 3 weeks later and a third application in late June. A fourth application may also be needed in mid- or late-July.	In combination with the use of Apogee, root pruning can be done 18 inches from the trunk (dwarf planting), at 2-3 feet from the trunk (older semi-dwarf plantings), run up in both sides of the row.

On The Horizon

A third update about our precision chemical thinning studies will be sent as soon as we can this week: 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.

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.