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Cooperative Extension

Lake Ontario Fruit Program
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"*Fruit Facts*" – Tuesday, June 2tth, 2025

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Join us Thursday June 26th at Cornell Orchards in Ithaca
for our third and final Twilight Meeting of 2025

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.

Our third **Twilight meeting** will be held **7-8:30pm** on **Thursday June 26th**. Please **arrive at 6:45pm** for pizza and soda. Thank you to Valent for providing refreshments!

Location: Cornell Orchards, 709 Dryden Rd. Ithaca, NY.

1.5 DEC credits will be offered in categories 1a, 10, and 22. Feel free to bring pictures or descriptions of pests you are concerned about on your farm. No pre-registration required; **event is free to attend**.

To Do Today

- **Irrigation call this week! - for those sites with access to trickle irrigation (Figure 1):** Don't be afraid to turn on the irrigation in young blocks and mature plantings with the current heat wave of this week in WNY.
- Focus irrigation on small fruited varieties like Gala, Empire, Macoun, 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 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!).**

Figure 1. Honeycrisp, Gala, and NY-1 fruit producers should not be afraid to turn on trickle irrigation in young blocks and mature plantings with the current heat wave being experienced in our region. Please notice the good irrigation practices being conducted in a Honeycrisp block this past week.

- **Know the Water Holding Capacity of your soils if you receive good rains at your site, hopefully!:** Under hot weather conditions, mature trees can use until one inch of water a week or even more. It depends also on soil type and rooting depth. Clay and loamy soils will hold more water than sandy soils (see table on following page).

Soil Type	Inches of Water per Foot of Soil Depth
Clay	2 - 2.5
Loam	1.5 – 2
Sand	1 – 1.5

- **Increased water holding capacity is an important characteristic for high yields of high quality fruit in Western NY:** It is even more crucial in blocks without trickle irrigation.
  - At the beginning of this 2025 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.

- **Final comments about irrigation in the Northeast:** I suggest when irrigating new fruit trees that you err toward too dry, versus too wet. The consequences of the latter are harder to deal with than the consequences of the former. When a newly planted tree is over watered within its first two months, it will shut down and wait for its environment to change. A newly planted tree needs a certain soil temperature, oxygen, and water. The ideal soil temperature is 45 to 65˚F for a tree to start growing in the spring. Every time you water when it is not needed you suppress soil temperature and delay tree growth.

  Lastly, if you are a grower who has not yet implemented the use of devices for measuring soil water potential, I would recommend you invest in a good soil auger. An auger is needed to determine soil moisture at root depth. You can't make proper irrigation decisions by watching the soil on the surface. When determining when to irrigate, one must check soil moisture, 8-12inches down and in at least, three sample areas throughout the orchard.

For blocks with a light cropload due to low return bloom or poor fruit set this year:

1) **Reduce nitrogen application or even don't apply any nitrogen at all** to mitigate vigorous shoot growth if you have trees with a low cropload;
2) **Reduce or even eliminate potassium application** because much less potassium is required for supporting a light crop; and,
3) **Adequate fruit Ca and its balance with potassium is critical for minimizing bitter pit development for Honeycrisp and other bitter pit-susceptible varieties**. Dr. Cheng's work in 2015 clearly showed that Honeycrisp fruit had a much lower level (only about 50%) of Ca than Gala in the flesh, but significantly higher concentration of potassium in the peel, which makes Honeycrisp more susceptible to bitter pit development. Under low cropload conditions, fruit gets bigger, diluting the fruit Ca concentration. Even for fruit of the same size, fruit on light cropping trees have lower Ca level. This is closely related to higher K concentrations. So, controlling potassium supply under low cropload conditions is critical for mitigating bitter pit. Of course, increasing Ca supply is equally important. 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 bitter pit susceptible cultivars such as Honeycrisp. We have been recommending 3 to 4 cover sprays of 1 to 2 lbs of calcium chloride (78% $CaCl_2$) 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.

Too much nitrogen can be counterproductive if looking for increased Gala fruit size: Applying more than 80 pounds per acre of N is luxury and does not contribute to increased fruit size; instead it will decrease quality. In addition, there are several disadvantages of using too much N: (1) increased shoot growth can result in an increase in fire blight susceptibility. Gala trees are already sensitive enough without help from extra N. And high N applied early would only increase shoot growth, and (2) Gala fruit quality can be reduced through "Stem End Cracking" and "Ring Bowl Cracking". These disorders may also be related to high N and vegetative growth.

Manage your nursery trees with intensive fertilization (both ground and foliar) and excellent weed control to produce the largest final tree size. Also **maintain optimum soil moisture** to produce large nursery trees. Frequent light irrigations throughout the growing season will keep moisture at adequate levels in the nursery. As a rule of thumb we need about 1 acre inch of water per week in the hot part of the summer (June, July, and August) provided by a combination of rainfall and irrigation.

Precision thinning – 2025 Fruit Measurement Study: The results of a fruit measurement study conducted on Honeycrisp/G.11 are analyzed today. The trees had an average of 183 blossom clusters per tree on May 7. Grower provided a fruit target of 120 fruit/tree at harvest. A petal fall spray (6oz NAA standard) was applied on May 16. A 10-13mm thinning spray (6oz NAA/acre plus 1pt carbaryl) was applied on June 3. A rescue spray (4oz NAA plus 1pt carbaryl) was applied on June 11. Four fruit measurements for MaluSim were conducted on May 19, 23, 29, and June 10. In this block where fruit size was measured, chemicals partially reduced Honeycrisp fruit set on mature trees. There was little change in the predicted fruit set over the last several measurements conducted during a long period of cool temperatures. The fruit growth rate model indicated that the trees still have 358 fruits still growing while the target is 120 fruits. This is about 3 times as many fruits as the target. As last Tuesday June 10, substantial thinning on Honeycrisp was still required and a last thinning spray was applied on Wednesday June 11. The thinning efficacy of this last spray was evaluated with a fifth measurement last week on Wednesday June 18. The model indicated that the last spray worked very well and that the number of fruits still growing was 144, only 24 fruits over the target of 120 fruits. That is about perfect thinning. Lastly, about the end of June but before hand thinning, we plan to count the final fruit number on each of the 5 data trees where we did fruit diameter measurements to see how the fruit growth rate model performed. Stay tuned!

Growers should consider the ethrel spray program for return bloom for strongly biennial cultivars like Honeycrisp (the same program can be started for Fuji as its flower initiation/formation starts after Honeycrisp). There is a risk of Ethephon and high temperatures this week. We recommend not to spray if temperatures will be above 85F in the next 2 days. Accede is less sensitive to high temperatures since it requires an enzymatic step to convert to ethylene and NAA is not very sensitive at this timing. As mentioned, you should avoid/skip any heat with temps close or above 85°F for the return bloom sprays with Ethrel this week.

2025 Mechanical Summer Hedging - Timing by Varietal Fruit Size: We encourage growers to target their mechanical summer pruning time based on the fruit-size characteristics of the apple cultivar. For large-fruited varieties such as 'Honeycrisp' – where we intentionally want to control or reduce fruit size at harvest and especially during a rainy summer – we recommend an "early" timing for mechanical summer pruning and a "late" timing for small-fruited varieties such as 'Gala' to avoid a negative effect on fruit size before harvest. Medium-sized varieties should be mechanically summer pruned after 'Honeycrisp' and before 'Gala' to have the same controlling effect on fruit size.
Under New York weather conditions, a mechanical summer pruning program should be started for 'Honeycrisp' as early as June 20–25, and for 'Gala' approximately 4–5 weeks later. In some cases, a 'Gala' block could even be hedged 7–10 days before harvest to facilitate the use of harvest platforms.

With these timings in mind, we recommend waiting until we get through this current heat wave before starting your summer hedging. Wait to hedge your Honeycrisp until we get a dry, relatively cool stretch of weather.

Disease and Pest Outlook:

- **Beware of potential for fireblight infections, triggered by current and upcoming heatwave.**
  - In nurseries and other non-bearing blocks, regular low-MCE liquid copper applications will help prevent new fire blight infections. In bearing blocks, copper may cause russeting, but you may still want a low a.i. formulation.
  - In bearing blocks with 1-multiple strikes per trees, your best option is likely to apply prohexadione-calcium at 6-12 oz/100 gal, allow 5 days for the product to take effect, and then prune out existing and newly developing shoot blight regularly throughout the summer. This week is not the time to be pruning FB out – wait until it's not so hot out.
  - Consider a biological anti-bacterial such as Double Nickel or Howler.

- **Use caution when spraying any pesticide (insecticides, fungicides AND herbicides) during extreme heat.**
  - Many herbicides can vaporize and move far off-target (even in ideal wind conditions) once temperatures reach 80 or 90F. Use extreme caution applying herbicides in the heat!
  - Make sure to read the label to see if there is any warning about applications during hot weather. Some a.i.s or formulations will damage plant tissue as temps increase.
  - Even if there is no warning on the label, consider applying any necessary pesticides in mornings/evenings when temperatures are lower.
  - Pyrethroids are less effective as temperatures increase. Choose other classes of insecticide for periods when temps will be above 80F.

- **Spotted wing drosophila has now been caught on both sides of the city.**
  - For blueberry and cherry plantings, begin sprays as soon as 20% of the green fruit begin to blush.
  - For raspberries and blackberries, begin sprays as soon as any blushed fruit appear.
  - For insecticide options for SWD, view the SWD Insecticide Quick Guide for Berries (updated in 2025) and the 2024 Cherry Fruit Fly Quick Guide (updated in 2024).
  - For updates on SWD and other pests, sign up now for the **NY Berry Pest Monitoring Blog.**

- **Oblique banded leaf roller sprays should go on later this week or over the weekend.** Numbers have been higher than usual in the traps I have been checking, so don't miss the window for OBLR management. There is a plethora of effective materials for OBLR management, including the group 28s (Altacor, Exirel, Verdedryn), and Delegate, Entrust, and Intrepid.

- **Woolly apple aphid** is beginning to build up in many blocks. Scout now and manage WAA problem blocks before they have time to build up large colonies that can protect the center aphids from any contact with a spray. WAA can be controlled by Beleaf, Sefina, or Sivanto Prime at this timing. Those will also manage the **rosy apple and green/spirea aphids, which have been present in high numbers** (and likely to build up populations quickly in the heat).

- **Use caution with glyphosate yet this year.** Mid to late summer applications of glyphosate may damage the trees, as apples will begin to translocate energy back into their roots as we move past the summer solstice. As a rule of thumb, the final recommended date for glyphosate applications in an orchard is sometime around June 21st, or maybe you can get away with as late as July 4th or later if you are very careful to shield the trunk from any spray contact, and to apply during perfect weather conditions to avoid drift and foliar contact.

- **Continue to manage powdery mildew** until we reach terminal bud set. Many blocks have very high PM pressure this year, and it is likely to get worse this week. Some options for PM control include Flint extra (14day PHI), Luna Sensation (14day PHI), Merivon (0day PHI), Rally (14day PHI), and others.

Pear

- **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.
- **Pear psylla.** June is a great timing to remove water sprouts from your pear trees. This will remove their best summer food source, keeping populations in check. 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. 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.

Stone Fruit

- **Begin cherry fruit fly management as soon as fruits begin to blush.**
    - For insecticide options for cherry fruit flies (and SWD), view the 2024 Cherry Fruit Fly Quick Guide (updated in 2024).
    - The quarantine zone for European Cherry Fruit Fly continues to expand. **Please see LOF Announcements article which I will be sending this morning for an update on the quarantine regulations for ECFF for 2025!**
- **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.

Good to Know

The weather forecast for early this week will be hot, sunny, and muggy. Please keep in mind that conditions will be right for the development of heat illnesses, especially for those exposed to hot and humid conditions in the orchards.

Please take a few moments to remind employees of the serious nature of heat illnesses and the importance of heat illness prevention.

Heat illnesses kill approximately 300 people annually in the United States. Lesser - but still costly - impacts include lost work time, and doctor and hospital visits. Importantly, heat stress can cause safety problems - you are more accident-prone while working in the heat! Heat stress affects coordination, concentration, strength, and alertness.

Prevention of heat illnesses is much preferable to treatment! Some prevention tips include:

Drink plenty of water, before, during and after work. Drink at least 4 oz of water every 15-20 minutes throughout the day, even if you aren't thirsty.

Avoid alcohol and caffeinated beverages that can contribute to dehydration.

Use salt normally but check with your physician about salt intake if you have any heart or circulatory condition, such as hypertension.

Plan ahead, do the most strenuous work during the cooler parts of the day, and pace yourself throughout the day.

Eat cool, light, nutritious meals.

Rest often, in the shade or in a well-ventilated room. Short, frequent breaks are more effective than long, infrequent ones.

Wear the right clothes, made of light, breathable materials, and include wide-brimmed hats, sunglasses, sweatbands, and proper footgear.

Take advantage of fans, ventilation systems and shade whenever possible. Cooling vests and gel headbands and wristbands can provide additional relief.

Acclimatize by allowing your body to adjust to the heat naturally and gradually. Gradually increase the time you spend in the heat until you reach the total amount of time desired. Most people acclimatize to warmer temperatures in 4-7 days.

Be physically fit, one of the best protections against heat illness.

Workers should be alert to the **signs and symptoms of heat illness** in themselves and their co-workers. Heat exhaustion can be indicated by sweating; dizziness; fatigue; nausea; vomiting; headache; fainting; rapid pulse; cool, moist skin; pale or flushed complexion; dilated pupils; and near normal body temperature. A victim of heat exhaustion should be moved to a cooler environment, kept at rest on the back with feet elevated, fanned & sponged with cool water, and given 1/2 cup of water every 15 minutes. The victim should follow-up with a physician.

Heat stroke is a much more serious and immediately life-threatening condition that is indicated by no sweating (or sweating profusely); hot, dry, red skin; high & rising internal temperature; constricted pupils; mental confusion, loss

of consciousness, convulsions, or coma. Heat stroke can be FATAL IF TREATMENT IS DELAYED! CALL FOR MEDICAL HELP IMMEDIATELY! While waiting for help to arrive, move the victim to a cooler environment; keep at rest on the back with feet elevated; and cool by any means possible - hosing, immersion, rubbing ice on the skin, or pouring any liquid over the skin; give nothing by mouth.

No one should ignore the early warning signs of heat illness. If you feel weak, nauseous, dizzy, or otherwise ill while working in the heat - TREAT IT SERIOUSLY! Get yourself to a cool place, rest on your back with your feet elevated, and drink plenty of fluid. Most importantly - tell someone that you are sick! Do not go off by yourself!

You can view more information on heat stress at https://cals.cornell.edu/occupational-environmental-health-program/health-safety/heat-stress.

Information provided by:
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