Cornell University
Cooperative Extension

Lake Ontario Fruit Program
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"*Fruit Facts*" – Friday, May 12th, 2023

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Coming LOF WNY Petal Fall meeting to be held TODAY May 12 at 3pm – Zoom invite sent yesterday!

Join Dr. Terence Robinson as he gives his recommendations for thinning at the 5-6 mm timing.

There is no registration required, simply click the link below to join today.

Join Zoom Meeting: https://cornell.zoom.us/j/94248810964?pwd=VVJrOHVLeFQ3cThaS2hHdmpYdVRCZz09

Time: May 12, 2023 03:00 PM Eastern Time (US and Canada)

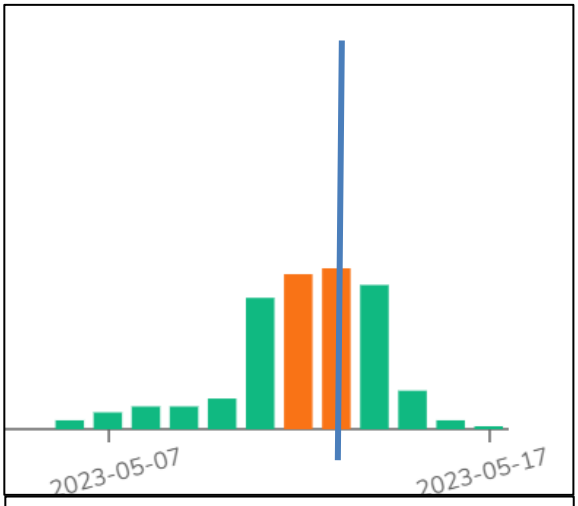
Meeting ID: 942 4881 0964; Passcode: 385805
One tap mobile
+16465189805,,94248810964# US (New York)
+16468769923,,94248810964# US (New York)

Dial by your location
+1 646 518 9805 US (New York)

To Do Today

- A **fire blight infection** could be triggered by the wetness inherent in any thinner or fungicide spray application you make today or over the weekend. Be sure to include an antibacterial product (Strep, Kasumin, Blossom Protect, etc) with any thinner applications or if you suspect dew or other wetting events to take place over the weekend. You may want to include Regulaid with your initial Strep application. Do not tank mix a thinner with Regulaid!

  If you have reason to suspect **Strep resistance** on your farm, do not use Strep as it will be a waste of your money. Kasumin and the biologicals will be your best options. Note that Kasumin does not have good kickback activity, so it is especially critical to time sprays before predicted rain events.



Fire blight infection risk for Waterport, Orleans Co. This graph is typical of current risk across the region. Blue line indicates today. Image and data courtesy of NEWA.Cornell.edu.

- **Watch for spongy moth** (formerly known as gypsy moth) larvae flying in on threads into your plantings! I saw some today in Rochester NY. They are currently at ~1st instar stage; they are very tiny, and often use a silk thread to get picked up by the wind and disperse over great distances (for example into your orchard). Most "Lep" cover sprays for codling moth or oriental fruit moth will help control spongy moths, but for orchards with a high spongy moth infestation, those using mating disruption instead of Lep cover sprays, or other minimal input plantings, you will want to scout for these caterpillars and spray DiPel (BtK) in the next couple weeks to target them while they are still susceptible to this softer material.

Spongy moth 1st instar caterpillar. Photo courtesy of: Jon Yuschock, Bugwood.org.

- **You can still conduct blossom thinning sprays today, tomorrow Saturday, and probably on Sunday:** Several growers from inland sites began their blossom thinning sprays from South to North on Tuesday, Wednesday, and yesterday. There is a lot more to be done with blossom thinning today and early tomorrow Saturday.
- **The implementation of the pollen tube growth model is very straight forward and easy for almost any grower who is patient, knows how to count kings, and can measure style lengths with a caliper (it is easy!):** This year we had the perfect weather conditions to carefully monitor the number of open kings/tree on Monday, Tuesday, and Wednesday. Things moved very quickly on Wednesday with the hot temps in the afternoon (and blossom phenology moved even faster yesterday!). Only those growers who were paying close attention to their tree phenology were able to set up the clock at the right time of the day for the first ATS sprays. Congratulations to all the growers who implemented blossom thinning sprays guided by the pollen tube growth model this week. Growers who were not able to precisely time their ATS sprays can still get the benefits of blossom thinning with NAA.

- **Here are some grower testimonials I got directly via farm visits, phone calls, texts, or Whatsapp when tracking bloom phenology this week:**
  - Growers located just north of 104 had 125-150 open kings of Honeycrisp and set up the clock for the pollen tube growth model on Tuesday May 9 by 5pm or early morning on Wednesday May 10. At these sites first ATS sprays were applied around 3-5pm yesterday.
  - A Honeycrisp site located very close to the lake in Williamson reached 125-150 open kings/tree on Thursday May 11 and first ATS sprays are scheduled for today Friday at 11am.
  - At another Honeycrisp/EMLA site in Williamson the grower counted the number of open kings/tree at 10:30am yesterday and found 73 open kings in tree 1, 152 flowers in tree 2, 132 flowers in tree 3, 141 flowers in tree 4, and 95 flowers in tree 5. At this site, the clock for the PTGM should have started by 2-3pm yesterday.
  - At a Premier Honeycrisp/M.26 site in Kent, Orleans, the clock for the PTGM was started for the south portion of a long row of approx. 650ft on Wednesday May 10 at 10am. Interestingly, the north sections of the same Premier Honeycrisp block were still at pink when the clock was set up for the trees located in the south part.
  - An Orleans fruit grower had zero open kings of Honeycrisp by the end of Tuesday May 9. The following day the grower came back to the same Honeycrisp block and found 50-60 open kings/tree on Wednesday May 10 by 10:45am. This grower was able to set up the clock correctly for the PTGM hours later on Wednesday.
  - Finally, when you are closely monitoring the tree phenology for blossom thinning guided by the PTGM, you can also learn how a rootstock can dramatically affect the bloom phenology. During a farm visit on Monday morning (after finished the root pruning demo I included in the last Fruit Facts on Tuesday), I had the opportunity to compare the effects of two rootstocks (G.41 and B.9) on blossom phenology of Evercrisp and Gala. The two cultivars were planted the same year, in set of four rows for each of the rootstocks, had the same ground (soil fertility/soil moisture), and orchard management practices. Basically, they were the same trees/same ages, except the rootstock choice. The below table shows the results of a side-by-side blossom evaluation I conducted for a row of Evercrisp/G.41 located next to a row of Evercrisp/B.9. I conducted the same side-by-side evaluation for a row of Gala/G.41 located next to a row of Gala/B.9. For both cultivars, G.41 significantly delayed bloom and trees had less open kings/tree when compared to the B.9 trees on Monday, May 8 by 11am.

Side-by-side comparison to evaluate the effect of rootstock choice on bloom phenology	Evercrisp		Gala	
	G.41	B.9	G.41	B.9
Average number of open kings/tree by Monday May 8, 2023	0	30-35	30-35	60-65

- **Blossom thinning sprays of ATS** should be timed so that enough flowers are fertilized before spraying ATS. This is done by noting the time (day/time) when enough flowers have opened to equal the target number of apples the tree should carry (120-150 apples/tree for a 3ft x 11-12ft planting). Once that number of flowers have opened, growers should begin the model's clock which is available on NEWA. The model will track the progress of the pollen tubes as they grow down the pistil and when enough time has elapsed to fertilize enough flowers to give growers the target number of fruit they want at harvest then a spray of ATS at that moment will prevent other flowers from being fertilized. Timing is essential and the spray must be applied within a few hours of the proper time recommended by the PTGM. We encourage WNY growers to use the PTGM and get their feet wet this 2023 season and try it on the problem varieties in a block or two. After the first spray the model's clock starts again and when enough time has elapsed for new pollen tubes to grow down the pistil then a second spray is applied to prevent any more flowers from becoming fertilized. Usually in NY two sprays are sufficient but with some varieties with substantial lateral bloom on one-year wood a third spray would be required.

- **Phenology Update:** This morning we provide fruit size distribution stages of kings and laterals for important cultivars evaluated by Craig Kahlke, CCE LOF in Niagara sites on Monday May 11, 2023.

County /location	County /location	Average Kings (fruitlet size in mm)	Average Laterals
Inland Niagara	Gala Honeycrisp Ginger Gold Idared NY1 NY2 Zestar!	Full Bloom 60% FB Late PF – 5.0mm Early PF – 5.5 Full Bloom Early PF – 5.5 PF – 5.0	Full Bloom 60% FB Late PF – 5.0 Early PF – 5.0 Full Bloom Early PF – 5.0 PF – 5.0
Intermediate Niagara	Gala NY1 Honeycrisp NY2 Ginger Gold	Range 3 blocks – Kings open – 60 % FB Range 2 blocks – Kings open – 70% FB 40% FB FB PF – Kings 5.0	Laterals 5.0
Lake Niagara	Honeycrisp Ginger Gold NY2 Red Delicious Gala Empire	Kings open Early PF, Kings 5.5 Range 2 blocks – 40% FB – FB Kings 5.0 50% FB Range 2 blocks -20% of Kings open – 40% FB Kings open	Laterals – 5.0 Laterals- 4.0

- **A key part of using the PTGM is correctly measuring the length of the style in the flowers**: Please remember that the current formula for the PTGM is very dependent on having an accurate style length, as it significantly changes the model output. Cornell is beta testing a new PTGM which does not use style length this year. We could potentially have a grower beta test available next season.

- Consider fungicide choices carefully once **bee hives** are in the orchard. For a reminder of which fungicides are most bee-safe, and what products are worse when used together, view our "Bloom Pesticides – Relative Toxicity to Pollinators" cheat sheet at https://rvpadmin.cce.cornell.edu/uploads/doc_870.pdf.

Stone Fruits:

- **Brown Rot** management involves rotating fungicides from pre-bloom through petal fall. There are many labeled products available (see Recommends), including Rovral 4 flowable (which may provide 24hr "kickback" activity) and chlorothalonil/Bravo (avoid when bees are foraging, if possible).
- **Plum curculio** is active when temperatures are above 60F. Beginning Wednesday-Friday, as stone fruits reach shuck fall AND once the bees have been removed from the orchard block, consider applying Assail or Avaunt (or see the Recommends for other options).

On The Horizon

Oriental Fruit Moth flight began this week throughout the Lake Ontario region. We will now begin to tally Degree Day accumulation, to time insecticide applications in blocks that reach threshold. For now, we are at ~60 degree days across the region (out of 350 to time larvicide application), so **no OFM insecticide is recommended for this week**. Note that an insecticide is warranted for OFM if you saw damage last year, and if trap catch numbers exceed 10 per trap per week. Also note that last year we were trapping upwards of 60 per trap per week in some locations, and yet by far the majority of "worms" in the apples at the end of season were codling moth rather than OFM. All that to say, it may be more important, for most farms, to time insecticide applications based on CM phenology. IF you have a suspicion of high OFM worms in apples last year, and would like me to visit this fall to look at some fruit, give me a call.

If using mating disruption for **Dogwood borer or the Peach tree borers**, hang those disruptors soon (or now). Larvae are beginning to pupate, and you will want to hang disruptors before the beginning of the moth flight, or else disruption is a waste of your money.

Good to Know!

Did you know that the Geneva® rootstocks accounted for about 60% of all rootstocks planted in the US. in 2021?: There are four main reasons that can explain the successful adoption of Geneva® rootstocks in recent years.

- One of the most important reasons for the adoption of the Cornell Geneva® rootstock technology has been their *resistance to fireblight*.
- A second important reason why the Geneva® rootstocks have done so well in the U.S is their *general tolerance to apple replant disease*.
- A third reason why the Geneva® rootstocks have been popular is that rootstock trials have generally shown *greater yield than M.9 or M.26 rootstocks*.
- A fourth and last driving factor for recent adoption has been their *relative cold hardiness*.
    - The new Cornell cold hardiness research led by Professor Jason Londo at Cornell AgriTech has shown that the M.9 is vulnerable to cold damage, but also several others like G.11, CG.484, B.9, and G.222.
    - The hardiest are G.41, G.213, G.210, G.890, G.202, G.214, and G.935.
    - As growers look at where to plant these new rootstocks in the more northern parts of Washington, Minnesota, Wisconsin, Michigan, New York, Maine, and Vermont, and those located in the Canadian provinces of British Columbia, Ontario, and Quebec, they should probably focus on the adoption of the hardiest group of Geneva® rootstocks listed above.