



## **“Fruit Facts” – Saturday, May 7 2022**

### **New LOF YouTube video about Bloom Thinning guided by the PTGM – new release!**

Check the recently posted YouTube video titled ‘Pollen Tube Growth Model & Thinning Guide for Precision Crop Load Management’. A new video describing bloom thinning, why, how and when to accomplish it.

<https://youtu.be/zMVkyzbKhgk>

### **IPM Notes...Janet van Zoeren**

**Apple scab:** The forecast predicts little rainfall in the coming week, and correspondingly low scab infection risk.

**Fire blight:** Pears and the earliest apples blossoms are in bloom; however, forecasted weather conditions are not favorable for fire blight infection. To be on the extra safe side, a biopesticide could be applied, such as double nickel, lifeguard or actigard.

Many cultivars are currently at full pink. Consider an application of **prohexadione-calcium (Apogee/Kudos) at 6 oz/100 gal at pink.**

**Powdery mildew** thrives in high humidity and temperatures in the 50s and 60s... Check the recommends for a full list of products that are effective against scab, PM, cedar apple rust and summer rots, depending what diseases you have a history with.

**Bees in the orchards!** At several of the orchards I visited this week the bees have already arrived, and elsewhere they will soon. Keep your bees safe, and stay informed of which pesticides are most safe during bloom. The [Pesticide Decision-making Guide to Protect Pollinators in Tree Fruit Orchards](#) provides very comprehensive information, and a shorter, more concise guide is available on the LOF website at [https://rvpadmin.cce.cornell.edu/uploads/doc\\_870.pdf](https://rvpadmin.cce.cornell.edu/uploads/doc_870.pdf).

Stone fruit **brown Rot** management should take place 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).

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

### **Horticultural Notes...Mario Miranda Sazo**

**Bloom in apples is almost here and not far away...It is the time to start thinking about bloom thinning guided by the Pollen Tube Growth Model (PTGM):**

In 2022, bloom thinning will be essential for:

- Honeycrisp to achieve good return bloom
- Fuji to achieve good return bloom
- Gala to achieve good fruit size

**WNY growers should implement the use of the PTGM to time their blossom thinning sprays.**

**Measurement of style length is critical:** If style measurement is too long then chemical application is delayed and too little thinning is achieved.

**Bloom thinning will be CRITICAL for Honeycrisp this year:**

- Seeds produce gibberellins which inhibit flower formation for the 2023 season
- The earlier that fruit number can be reduced to the target fruit number the greater the likelihood of having flower initiation (it can occur as early as 20-30 days after full bloom)
- Plan ahead your blossom thinning sprays and be ready!

**In NY, we use ATS sprayed at 60% on PTGM:**

- 2.5-3.0%
- Burns stigma of pistil
- Causes mild leaf phytotoxicity but no effect on fruit finish
- Requires 2-3 applications
- When used with the PTGM can achieve a substantial portion of thinning job
- Has a neutral effect on fruit size
- Not registered as a thinner in NY but can be legally used as a bloom time foliar fertilizer
- Improves return bloom of Honeycrisp

| <b>When to use ATS versus Hormone Thinners at Bloom</b>  |   |
|--|---|
| <b>Use ATS for varieties that are strongly biennial</b>  | <b>Use a hormone type thinner for small fruited varieties</b> |
| Honeycrisp<br>Fuji<br>Evercrisp<br>Delicious   | Gala<br>NY-1<br>Empire<br>Macoun<br>Pink Lady                 |
| <b>Notes:</b> <ul style="list-style-type: none"><li>• Do not spray caustic thinners under slow drying and wet conditions or if there is frost</li><li>• Frost causes damage to fruit skin and caustic thinners then cause russetting</li></ul> |   |

**Friendly reminder about Malusim:** As we get closer to the early part of bloom this weekend, I would like to encourage you to review and get familiar with the carb model (Malusim) on the NEWA website. The data table have a column of DD base 4°C and have color highlighting when we will be in the **sweet spot for thinning (200-250DD from bloom)**. **The user will be required to input % of spurs that are floral.** The new version will also give a Thinning Index composed of the average carb balance of 2 days before, the day of thinning and the next 4 days= 7 day running average. The thinning recommendations will be based on a new 3 dimensional lookup table taking into account, DD from bloom, % of spurs that are flowering and carb balance over 7 days. The thinning recommendation cells in the table will also be color coded to indicate red=high risk of over-thinning, yellow=mild thinning efficacy and green=good thinning efficacy.

**Plan to score/girdle with the use of a double-bladed clipper plus Maxcel or Promalin to promote bud-breaks:** In recent years I have emphasized the importance of scoring and girdling for blind wood sections. These techniques temporary interrupt the movement in the phloem (carbohydrate and hormone balance). Better results have been achieved if these techniques are performed with a **double-bladed clipper** (you can still order one, it is less than \$60 dollars/piece), or a small saw (wounds can heal a couple weeks later). These cuts can promote bud-break and enhance vegetative growth. The techniques should be applied in spring (green tip stage) the first year. Better results have been achieved if techniques are applied in the second year after planting when the root system is well established. Scoring/girdling should be followed with a directed spray of a PGR (Promalin, Maxcel). More details about these techniques early next week.

**We are ready to start grafting in the orchard during/after Mother day weekend:** Tree tops should be removed and ready for spring grafting at the latest this weekend. The majority of the top should be removed first so that the large quantity of

brush can be removed. The fresh cut will be made the day of grafting to create a smooth fresh cambial interface.

**Comments about root pruning as we get closer to bloom in WNY:** Growers should be cautious if root pruning is conducted after an Apogee spray at pink or petal fall, especially if a severe and/or sudden/prolonged drought occurs in early spring of 2022. Honeycrisp root/pruned orchards, without trickle, and with a low soil water status in May-early June, may affect/reduce their bloom potential next season. In our region, there has been an important use of root pruning of dwarf and semi-dwarf apple plantings before bloom (mainly for vegetative growth control purposes). An early Apogee spray at pink followed by root pruning can also be beneficial for growers establishing top-worked Fuji plantings (a vigorous cultivar on a big established root system) with two or three axis. This will allow the production of shorter fruiting units for the 20" spacing between leaders. The practice can also be beneficial for beaver-grafted trees.

**You can still control excessive flower bud numbers in 'Honeycrisp' and 'Gala' this weekend:** Excessive flower bud number divides the spring nitrogen, carbohydrates and cytokinin from the root system into each bud.

With excessive number of flower buds each bud receives less than optimum levels resulting in:

- Weak buds that have low set
- Weak bud that produce small fruit especially with 'Gala', 'NY-1'
- Weak buds that are more biennial – 'Honeycrisp', 'Fuji'

**I am still visiting several blocks that should be re-pruned before bloom to adjust flower bud number to right target:** Don't forget to count flower cluster number on representative trees after pruning for quality control. We are getting close to end of the precision pruning window.

- Example 1 – target final fruit number is 73 per tree X 1.8 = 131 flowering spurs
- Don't leave more than 250 flower clusters on 'Honeycrisp'
- Don't leave more than 300 flower clusters on 'Gala'

**The right timing for Apogee and Kudos for bitter pit mitigation in 'Honeycrisp' is full pink, preferably applied when temperatures are 60°F or above:**

- Apogee should be applied to mature bearing tall spindle 'Honeycrisp' at pink stage at a rate of 6 oz./A. for orchards up to 180 gallons TRV. Cover the foliage well. **Apply at full or late pink**, not early pink. **Use a water conditioner**, "hard" water deactivates Apogee and Kudos.
- **Avoid cold temperatures at application** and during the 8-hours post is a **critical factor**. Prohexadione calcium (Apogee, Kudos) are plant growth regulators and require metabolic activity within the plant for uptake and metabolism. Temperatures below 60°F are questionable for an application timed at pink. Delay your application until temperatures are warm enough for up to eight hours post.

**Don't plant graft union too close to the soil line because of the cultivar's low vigor:** A deeper planting depth may be a good strategy, but be careful not to go too far this year. For weaker cultivars as Honeycrisp or NY1, **leave at least 4"** of rootstock exposed to prevent scion rooting. For the rest of the cultivars, graft union should be the **standard 5-6"** above the ground level once the soil has settled.

**Be very consistent with the selected graft union height** for all trees after planting. Measure, use a tape, double check as you plant the tree rows!

**Retain on Regina cherry to improve fruit set:** Retain is effective for this goal and should be applied EARLY at popcorn stage to shy bearing varieties. Regina trees have some bloom open @ 8-10% today (inland sites). Best results can be achieved with 2 pouches at the very early bloom stage when 95% of the flowers are still at popcorn stage. It has showed that a single application of 2 pouches per acre when the very first blossoms were open and when 95% of the flowers were at popcorn stage gave the best improvement in fruit set. A split application with one pouch at the early bloom timing and a second pouch at the 80% bloom timing also worked but not as well as the two pouches early. Regina tends to have a long spread out bloom with some flowers opening up early and the great majority spread out over a week after that. Nevertheless the best effect of Retain is to get it on early. **An important note:** Do not add Silwet to this application of Retain even though we use Silwet with Retain when used for stop drop control of apple. The addition of Silwet will burn the foliage and bloom of cherries. Use +/- 100 gallons/acre.

It is early May. Most strawberry beds have the mulch taken off of the plants, and new leaves are starting to grow.

Now is a good time of year to scout for several pests and diseases in strawberry fields.

Two spotted spider mites (*Tetranychus urticae*) are pests of strawberries, raspberries, blackberries, and many other crops, including vegetables. Two spotted spider mites overwinter as eggs. At this time of year, some mites are beginning to emerge from the eggs. Especially if you have had issues with mites in the past, now is a good time to grab a magnifying lens and scout for mites and eggs.

Mites and eggs can be found on leaf undersides. Use a 10X – 15X magnifying lens to look for them; look for greenish-yellow, tick-like nymphs, and spherical white eggs. The scouting threshold for applying a miticide is 5 eggs and adults per strawberry leaflet. Predatory mites such as *Phytoseiulus persimilis*, *Neoseiulus californicus*, are a biological alternative to miticides.

The wet weather last summer has increased the risk of fungal diseases. Fungal crown rots such as *Phytophthora*, or red stele, and Verticillium wilt, can cause leaf dieback and eventual death of the planting. To identify crown diseases, uproot a strawberry plant from the ground and slice the crown in half with a sharp knife. Scrape the skin away from the roots. Healthy crowns and roots will be a uniform creamy beige color, with a pale white band of vascular tissue.

Winter injured crowns will have ombre brown discoloration within, but the band of white vascular tissue will remain intact. Fungal diseases will cause discolorations inside of the crown and vascular tissue: verticillium wilt has a blue-green tint, phytophthora will cause a dull reddish brown, and anthracnose crown rot will cause a bright red-brown marbling.

Once a disease has been identified, for more information on treatment options, consult an extension specialist or the [Cornell Pest Management Guidelines](#) for treatment recommendations.

Spider mite Description, Damage and Management | UC ANR: <https://www2.ipm.ucanr.edu/agriculture/strawberry/spider-mites/>

Cornell Pest Management Guidelines 2022 | Cornell University: <https://www.cornellstore.com/books/cornell-cooperative-ext-pmep-guidelines>

Survey of Strawberry Root Problems in New York State | New York Fruit Quarterly: <https://nyshs.org/wp-content/uploads/2019/03/McDermott-Pages-19-22-from-NYFQ-BOOK-Fall-2018-8-29-18-3.pdf>

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.

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