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Fruit Notes

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Cornell Cooperative Extension
Lake Ontario Fruit Program

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Cornell Fruit Field Day July 30 at Cornell AgriTech in Geneva

REGISTRATION NOW OPEN!

REGISTER HERE: https://lof.cce.cornell.edu/event.php?id=2208

Join Cornell researchers, scientists, and faculty at Cornell Fruit Field Day, returning to Geneva after a 10-year hiatus as a premier orchard field day in the Northeast. This event is structured for attendees to load buses in one central location and choose one of three tracks: tree fruit, berries, or grapes. This year's event features Dr. Terence Robinson, who has dedicated over four decades to tree fruit research and extension at Cornell University, beginning his career at the New York State Agricultural Experiment Station in Geneva in 1984. Participants will have the opportunity to learn from Terence as he shares his expertise and insights, reflecting on decades of contributions to orchard systems research and grower outreach.

Held at the research farms at Cornell AgriTech in Geneva, the event will feature new and existing products, chemistries, practices, technologies, and equipment shaping today's orchard industry. Participants will tour research plots alongside Cornell experts, reviewing results relevant to commercial operations, discussing ongoing studies, and exploring anticipated future recommendations.

CLICK HERE FOR CURRENT TREE FRUIT TRACK AGENDA (subject to change) :

Draft Itinerary Tree Fruit.pdf

NOTE: This field day (this year only) is in place of the Western NY Fruit Growers Tour.

Hosted by Cornell Cooperative Extension, Lake Ontario Ag Consulting, Cornell AgriTech, and Cornell University

Questions? Contact Craig Kahlke, cjk37@cornell.edu, 585-735-5448

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Reducing Herbicide Contact to Trunks in the Orchard

Mike Basedow, Lynn Sosnoskie, Maria Gannett, Thierry Besancon, and Janet van Zoeren

Use of pre-emergence (soil applied) and post-emergence (burndown) herbicides are standard practice for maintaining early season weed control in most apple orchards in the Northeastern United States. There is good evidence to show that maintaining a weed free strip from May through July improves both tree growth and yield (Breth, 2014). Standard herbicide applications are typically made to achieve full coverage of the weeded strip, which can result in herbicide contacting the tree trunk. While single-season studies have shown no significant impact of glyphosate or other post-emergence herbicide use over the course of a single season (as Breth & Tee, 2013), others have reported long term effects on tree health from repeated use of glyphosate, glufosinate, or paraquat (the most commonly used post-emergent materials). For example, glufosinate injury has been implicated in the death of the cambium layer in the year following the application (Majek, 2014). Similarly, glyphosate use has been correlated with decreased winter hardiness and increased Botryosphaeria canker infections (Rosenberger et al 2013), and in some instances with decreased trunk diameter (Chandran, 2015).

There are a number of practices a grower can use to reduce herbicide contact to the tree trunks within the orchard.

One way to prevent tree damage is to **carefully follow herbicide label directions**, including all warnings and mitigation practices intended to reduce the risk of crop injury. Herbicide labels frequently specify minimum tree age requirements and caution against contact with green plant tissue, including immature bark and root suckers. Systemic herbicides such as glyphosate or 2,4-D should also not be applied immediately after cutting suckers, as the freshly cut stems can readily absorb the product.

Pre-emergence herbicide applications made during tree dormancy can reduce trunk injury risk in the long term, by suppressing weed emergence and thereby decreasing the need for post-emergence applications. Pre-emergence herbicides should be selected based on the weed species present within the field you are planning to treat. It is often helpful to tank mix pre-emergence herbicides to extend the range of species controlled. To help choose your herbicides, review our herbicide efficacy table at the following link: https://enych.cce.cornell.edu/submission.php?id=984&crumb=crops|crops|apples|crop*38

We cannot overstate the importance of **good sprayer calibration.** The risk for trunk injury increases as herbicide concentrations increase. The risk of tree injury can therefore be reduced by ensuring the sprayer is properly calibrated with even spray distribution.

The **use of a shielded boom** can also minimize herbicide contact with the trunk. Shielded sprayers will also minimize bounce-back from bare soil that sometimes allows a haze of small droplets to drift upward into the canopy. When making herbicide applications with any boom sprayer, keep the pressure as low as possible (no more than 30 psi) to minimize small droplets generation. If that is not feasible, use air-induction nozzles.

Many existing herbicide boom sprayers can likely be retrofitted with a shield or hood, but a few companies manufacture shielded sprayers that may be worth considering. Some companies include:

- MiCRON: https://www.micronweedmanagement.com/en/spray-dome
- Eastern Manufacturing: https://easternmfg.ca/herbicide-sprayer/

Weather at the time of application is also an important consideration. Previous studies (Rosenberger, 2014) have cautioned that the risk for trunk damage increases when herbicide applications are made during or just prior to periods of drought stress. Herbicide physical drift and vaporization is more likely to occur on hot, windy days with low humidity, when spray droplets evaporate more quickly and are easily carried by the wind.

Even when best management practices are followed, there is still a risk of herbicides reaching the trees. Growers can use various physical barrier materials to further reduce herbicide contact with trunks, such as painting with latex, Tyvek or milk carton guards, grow tubes, or short pieces of drainage pipe (Mitchem, 2017). From 2021 to 2023, we evaluated the effectiveness of Tyvek sheets used as trunk guards as part of an ARDP-funded project. In an August 2021 trial, half of the trees at each of two field sites (one in Western and one in Eastern New York) were protected by a 10x10 inch sheet of Tyvek stapled around the base of the trunk, while the other half were not (serving as a control). Then, eight strips of water sensitive paper were attached to trunks of ten trees each at each field site. The water sensitive strips were placed vertically from 0-3, 3-6, 6-9, and 9-12 inches above the soil line, on both the east (facing towards the sprayer) and south (facing within the tree row) sides of the trunks. On the trees with Tyvek tree guards, water sensitive strips were attached under the guards. Herbicides were applied with the cooperating growers' standard herbicide boom sprayers. All strips were then collected, fixed to a sheet of paper, and scanned. ImageJ was utilized to assess percent coverage of strips.

Tyvek trunk guards greatly reduced herbicide deposition on tree trunks at both study sites. In eastern NY, deposition decreased from 7.54% on unguarded trunks to 0.06% on guarded trunks, representing a 99% reduction ($P = 0.008$). Similarly, in western NY, deposition decreased from 26.76% on unguarded trunks to 0.56% on guarded trunks, a 98% reduction ($P = 0.0125$).

Herbicide Deposition Reduction by Tyvek Trunk Guards				
Site	**Deposition with Guard**	**Deposition without Guard**	**Reduction in Trunk Spray Deposition Provided by Guard**	**P-value**
Eastern NY	0.06%	7.54%	99%	**0.008**
Western NY	0.56%	26.76%	98%	**0.0125**

Despite the reduction in herbicide deposition, we did not observe differences in tree growth or health from the use of trunk guards during the three-year study. We did observe more woolly apple aphids under the guards in Western NY.

In a follow-up study, we evaluated several methods for protecting trunks in newly planted orchards in eastern and western New York. Treatments included wrapping trunks with Tyvek sheets, painting trunks with white latex paint, or leaving trunks unprotected as a control. The orchards were managed using the host farms' conventional herbicide programs. Tree growth, survival, and canker incidence have been monitored from spring 2022 through fall 2025.

To date, we have not observed differences in tree growth among treatments. However, in the eastern New York site we observed a higher incidence of cankers in the unprotected control trees (43%) compared with trees protected with Tyvek guards (25%) or white latex paint (11%), although these differences were not statistically significant.

Similar studies have been conducted in other regions of the United States. Hill et al. (2013) found latex paint reduced stunting from glufosinate in newly planted hazelnut trees compared to unshielded trees. Painted trees exhibited greater trunk growth and approximately 50% less trunk damage compared to unshielded trees. Trunk guards provided even greater protection but reduced wood density and increased bark sensitivity to sunburn and chemical injury upon removal. These findings suggest that guards should remain in place until trees are well established, or that several weeks should be allowed between guard removal and subsequent herbicide applications to allow the bark to harden.

Walter and Lightle (2018) compared different lengths of time between removing trunk guards and applying latex paint before spraying. They found that painting green almond trunks immediately after carton guard removal provided little protection against trunk damage from glyphosate and glufosinate applications in California. Painted trees had similar or greater trunk damage and canopy stress than unpainted trees that were allowed to harden off for nine weeks prior to herbicide application. Trees that still had cartons attached had lower stress than unpainted or painted trees. The authors concluded that cartons provide the best protection in young trees, but if removed as trees mature, growers should wait more than nine weeks before any subsequent herbicide application to allow bark to harden properly.

Emerging Technology

More advanced technologies, such as vision-guided spraying systems, may allow growers to reduce the amount of herbicide applied in orchards and further lower the risk of crop injury. An IR-4 project conducted by Lynn Sosnoskie and Thierry Besançon evaluated the WEED-IT spray system, which uses optical sensors to detect chlorophyll (the green pigment found in plants' leaves and young bark) and activate nozzles only where vegetation is present, rather than spraying continuously across the entire field. While this technology has been tested in grapes and blueberries, it could be adapted to orchards. This technology will be most effective when combined with a good dormant pre-emergence herbicide program, as lower weed pressure reduces the frequency of nozzle activation events and, consequently, the cumulative risk of herbicide contact with trunks.

In summary, carefully follow herbicide label directions, including all crop protection warnings. Make good use of pre-emergence herbicides during tree dormancy to reduce your starting weed pressure so as to be less reliant on burndown herbicides later in the season. Ensure your sprayer is properly calibrated and functioning correctly to minimize the risk of tree damage. While labor intensive, applying physical barriers around the trees, like white latex paint, milk cartons, or Tyvek guards, can further reduce herbicide deposition. Shielded or hooded sprayers can reduce herbicide contact with the trunks further, and vision-guided spray systems may allow growers to apply fewer post-emergence herbicides to their orchards. As with any IPM program, combining multiple tactics provides the greatest risk reduction.

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Spotted Wing Drosophila – 2026 Update on Monitoring and Management

Anna Wallis, Cornell IPM, Janet van Zoeren, CCE LOF, Anya Osatuke, CCE Harvest NY, Heather Kase, CCE ENYCHP

Spotted Wing Drosophila (SWD) is a serious pest of berries and cherries; as the primary driver of insecticide applications in those crops, growers of susceptible fruits are all too familiar with this insect. For a review of SWD biology and identification you can visit the Cornell IPM Fact Sheet and the Cornell Fruit Resources (https://fruit.cornell.edu/spottedwing/) websites on SWD, as well as other extension resources such as the University of Minnesota SWD webpage https://extension.umn.edu/yard-and-garden-insects/spotted-wing-drosophila

and the Oregon State SCRI webpage: https://spottedwing.org/

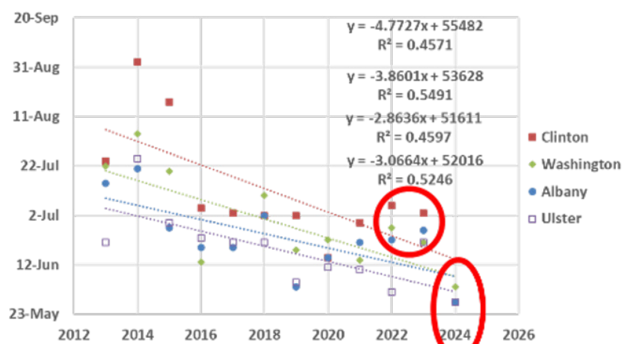
Monitoring

Monitoring and correct identification are critical steps for effective management. Especially for early ripening fruits such as strawberries and early raspberry varieties, the beginning of spotted wing flight may or may not coincide with ripe fruit; **on-farm monitoring traps will let you know when spotted wing drosophila moves into your crop field so that you can initiate management in time to protect your crop, while also minimizing pesticide use**. Potential benefits of using monitoring data to initiate management include reduced spray cost, lowering negative effects on the environment and human health, slowing development of pesticide resistance, and improved fruit quality.

Emergence of SWD varies considerably by year and location, so it is critical to be monitoring at your site. In cooler, drier years, emergence will be delayed and vice versa. This graph shows the first sustained trap captures of SWD in counties in Eastern NY from 2013 to 2024. General trends indicate SWD emergence is earlier each year. The red circles highlight years in which first emergence was much later or earlier than average trends, mostly as a result of the weather.

SWD First Trap Captures – Eastern NY

Year	Clinton	Albany	Washington	Ulster
2013	24-Jul	15-Jul	22-Jul	21-Jun
2014	2-Sep	21-Jul	4-Aug	25-Jul
2015	17-Aug	27-Jun	20-Jul	29-Jun
2016	5-Jul	19-Jun	13-Jun	23-Jun
2017	3-Jul	19-Jun	19-Jun	21-Jun
2018	2-Jul	2-Jul	10-Jul	21-Jun
2019	2-Jul	3-Jun	18-Jun	5-Jun
2020	15-Jun	15-Jun	22-Jun	11-Jun
2021	29-Jun	21-Jun	14-Jun	10-Jun
2022	6-Jul	22-Jun	27-Jun	1-Jun
2023	3-Jul	26-Jun	21-Jun	21-Jun
2024	.	28-May	3-Jun	28-May



Trending earlier each year
Actual first capture varies by year and location

Monitoring Network

This year we are continuing the new Berry Pest Monitoring Network and blog for monitoring SWD along with other berry insect pests across the state. This blog includes a dynamic map of pest occurrence in geographic regions, rather than counties.

To subscribe, visit the Berry Pest Monitoring Blog https://blogs.cornell.edu/berrypests/ and click 'Subscribe' on the right hand column. You will need to **verify your email** afterward. This is a continuation of the SWD monitoring efforts at Cornell IPM. The most accurate, up-to-date information will be hosted on the new blog!

Methods for monitoring

Both **red jar (drowning) traps and red sticky cards** baited with a scented lure can be used to monitor. Our research comparing SWD trap types: https://blogs.cornell.edu/swd1/2024/01/09/red-sticky-cards-for-swd-monitoring-results-from-two-years-of-testing/ on commercial farms over three years has demonstrated that both of these trap types are comparable for detecting first and sustained trap capture of SWD. Complete protocols for using these traps:

https://fruit.cornell.edu/spottedwing/monitoring/ are on the Cornell Fruit Resources website.

The **salt floatation technique** can also be used to detect fruit infestation. A sample of berries is submerged in a salt water solution for a brief period of time. The process is simple and requires few materials, but detecting the tiny maggots can be challenging. A video on the protocol for the salt flotation technique: https://swdmanagement.org/research-protocols/ is available on the SWD Management Website.

Management

Below are a few reminders of management tactics that should be used to successfully manage SWD this season:

Research Protocols - Sustainable Spotted Wing Drosophila Management: https://swdmanagement.org/research-protocols/ https://swdmanagement.org/research-protocols/ Semi-field Bioassays (PDF) : This document provides details of a laboratory bioassay method as described in Van Timmeren, S. and Isaacs, R. (2013). Control of swdmanagement.org

- **Sanitation –** Harvest fruit frequently to prevent populations from building up. If possible, do not leave berries on the ground. Remove infested fruit and freeze, seal in bag and place in the sun or dispose off-site.
- **Canopy management –** Excellent pruning and weed management reduce humidity, creating an environment less conducive to SWD.
- **Monitoring –** Begin to spray as soon as fruits begin to ripen, once SWD has been trapped in your orchard/region.
- **Rotate active ingredients** (IRAC groups) through to harvest for resistance management. **Resistance has been documented in other states, rotating is essential for preventing this in our region!**
- Avoid the temptation to stretch spray intervals! 7-day interval should be the maximum.
- Plan out the order of insecticides you will use wisely, so that you save products with a lower PHI for use close to harvest.
- Focus on complete coverage, especially in the middle of the canopy where high humidity creates an ideal SWD habitat, and be sure to reach to the top of the tree.
- If it rains, reapply (according to label instructions).
- When choosing insecticides for European Cherry Fruit Fly and native Tephritid fruit fly control, prioritize those that have activity against SWD (more information about ECFF to come in an upcoming Fruit Notes issue).
- **Exclusion** – Polyethylene netting (80 gram or 1.0 x 0.6mm) requires a high upfront installation cost and must be very thoroughly maintained to provide no possible entry to the flies, but if done well can be an extremely effective method of preventing infestation. Exclusion netting must be installed before SWD arrival and must be well maintained.

Quick Guides for choosing insecticides.

Tables summarizing insecticides registered in NY for SWD management in berries are available on the Cornell IPM SWD Fact Sheet: https://cals.cornell.edu/integrated-pest-management/outreach-education/whats-bugging-you/spotted-wing-drosophila under 'Related Links' at the bottom of the page.

- SWD Insecticide Quick Guide for Berries: https://cornell.app.box.com/v/Quick-Guide-SWD (Updated for 2026)
- SWD and CFF Insecticide Quick Guide for Cherries: https://cornell.app.box.com/v/Quick-Guide-CFF (Updated for 2026)

Practical Applications of Variable Rate Spraying of Chemical Thinners in Apples

Mario Miranda Sazo, Yu Jiang, Mariela Curreti, Luis Gonzalez and Terence Robinson

Early this year one of our presentations delivered on the Precision Crop Management of Apples project funded by USDA through the SCRI program, focused on variable rate spraying technology. We explained how the system uses camera mapping and geo-referenced data to categorize trees by blossom density into high, medium, and low categories, then it applies different chemical doses based on these classifications. The presentation detailed successful testing with drone and ground-based camera systems at Geneva, as well as computer-controlled sprayers from companies like Hol Spraying Systems (HSS, from the Netherlands) and Munckhof (also from the Netherlands). We highlighted that while individual tree spraying presented challenges due to physics and GPS accuracy, the two successful approaches involved mapping individual trees or mapping 30-foot sections and dividing each section into 3-foot segments. In 2025 variable rate spraying research with Golden Delicious at Cornell AgriTech demonstrated that variable rate spraying could significantly impact profitability, potentially adding $6,600 per acre through thinning high blooming trees with a full dose but thinning low blooming trees with a low dose to allow more doubles on spurs.

Variable rate spraying technology aims to apply different chemical treatments and doses to trees based on their flower density. The system uses camera mapping to create a task map, which controls a computerized sprayer 'smart sprayer' to apply varying amounts of chemicals based on blossom load. This new technological approach with the use of smart sprayers can apply chemical thinners VARIABLY across an orchard and allow growers to spray chemical thinners on trees with high crop load DIFFERENTLY than trees with low crop load in the same row or orchard block.

This 2026 growing season we organized 3 research trials on growers farms by collaborating with three Western New York apple growers, each of whom selected a mature Honeycrisp block exhibiting substantial variability in bloom density at the early bloom stage. Two imaging systems were used to scan the orchards and generate prescription or task maps: OUTFIELD, a drone-based imaging platform developed in England scanned the block at Lamont Fruit Farm, and AUREA Imaging, a ground-based vision system developed in the Netherlands scanned the blocks at Orchard Dale and DeMarree Fruit Farms. Two smart sprayer technologies were used to apply thinning treatments: a three-row Munckhof sprayer equipped with ON/OFF nozzle control was used at the DeMarree site and a recently developed smart sprayer with pulse-width modulation (PWM) nozzles provided by Monroe Tractor, was used at the Orchard Dale and Lamont Fruit sites.

At each location, variable-rate thinning prescriptions were developed to deliver different thinning intensities to trees classified as having high, medium, or low bloom density. A comparison conventional thinning program consisted of two blossom thinning sprays (ATS at Lamont and Orchard Dale and Lime Sulfur and oil at DeMarree) timed using the pollen tube growth model (PTGM), followed by a petal fall spray applied when fruitlets were approximately 5-6 mm in diameter, and a fourth thinning spray applied at the 10-13 mm fruitlet stage. The variable-rate spraying treatment for high blooming trees was thinned the same way as the conventional spraying treatment. The variable-rate spraying treatment for medium blooming trees was only one thinning application at the petal fall stage with a reduced dose. The low blooming trees did not receive a thinner application during the thinning season but received 2 sprays of a blossom inhibitor (Arrange = GA7) at 20 and 30 mm fruit size to help prevent a 'snow bloom' return bloom response next year. For the Arrange sprays, a new prescription map was developed from Outfield and AUREA imaging to target only trees with fewer than 10-35 blossom clusters per tree across all trial sites.

We monitored the thinning efficacy of the high blooming trees in real time between the petal fall and the 13mm sprays with the use of the Fruit Growth Rate Model (FGRM). Five high-blooming data trees were selected at each site for repeated fruitlet measurements. A total of three fruit size measurements were conducted during the thinning season. In addition, a final measurement was completed at all three sites on Monday June 15 to evaluate fruit set after all thinning sprays had their effects.

Partial Results and Lessons Learned

The implementation of variable-rate spraying technology was highly successful during the 2026 growing season. With the FGRM we found that at 2 of the three sites we had thinned the high blooming trees to almost exactly the target fruit number while at the third site the final fruit set was slightly above the target but quite close. In addition, evaluations of number of fruits per spur showed that on the medium blooming trees which were thinned with the variable spraying treatment had more doubles per spur than where we thinned with the conventional program. Having more doubles on the medium and low blooming trees is desirable since they did not have enough flower clusters to achieve the target fruit number with only singles per spur.

A tremendous amount of technical cooperation and support was provided by both European vision- system companies, (AUREA Imaging and Outfield). Blossom scanning data was processed rapidly, with turnaround times of only 2-3 hours, and prescription maps were delivered to growers on the same day as requested by each of the growers.

In one instance, a grower requested a customized prescription map for a small buffer zone established adjacent to the experimental plots in order to evaluate the accuracy of the smart sprayer on a few individual trees before applying the research treatment. This last-minute validation test was successfully implemented at the DeMarree site, and the results were excellent. The trial provided additional confidence in the accuracy, precision, and reliability of the variable-rate spraying system under commercial orchard operations.

A particularly important outcome of this project was the close collaboration that developed between local fruit growers and Monroe Tractor, where MT implemented innovative agricultural technology was on a sprayer. During the winter of 2026, Monroe Tractor worked closely with Orchard Dale Fruit Farms and Lamont Fruit Farms to develop a versatile ‘smart sprayer’ prototype. The system combined a conventional airblast sprayer with pulse-width modulation (PWM) nozzles and the computing capability necessary to read and execute prescription maps generated by both OUTFIELD and AUREA Imaging. To our knowledge, this represents a unique strategic partnership in which a local company collaborated directly with commercial fruit growers to develop and adapt cutting-edge precision spraying technology specifically for New York orchards. This effort has the potential to make variable-rate chemical applications more practical and affordable for fruit growers, thereby accelerating the adoption of precision crop load management technologies throughout the New York apple industry.

With technical support from Dr. Yu Jiang of Cornell AgriTech and his research technician, Ryan Weber, we implemented GPS-RTK mapping of the four corners of each variable-rate and conventional spraying plots at all trial locations. This significantly improved the spatial accuracy of treatment applications by ensuring precise alignment between the prescription maps and the smart sprayers. The successful integration of GPS-RTK technology demonstrated that variable-rate spraying can be effectively implemented across a range of high-density orchard systems and training architectures. Furthermore, the technology showed strong potential for helping growers achieve more uniform orchard blocks by managing crop load variability and targeting specific yield objectives tailored to individual cultivar-rootstock combinations. This level of precision could ultimately improve fruit size consistency, return bloom potential, and overall orchard profitability.

Growers participating in these variable-rate spraying trials were required to pay much closer attention to the number and distribution of blossom clusters per tree than they typically would under conventional thinning programs. Throughout the duration of the experiment, cooperating growers carefully evaluated crop load variability within the experimental plot and monitored fruit set distribution in the upper, middle, and lower portions of the canopy. This resulted in adjustments in real time of thinning strategies. Initially, growers requested and utilized the same prescription maps for both the blossom thinning and petal fall spray applications. However, as the season progressed and thinning efficacy became more apparent, it became necessary to refine the thinning management strategy. All cooperating growers ultimately requested a second set of prescriptions maps for the 13mm spray to specifically target trees with the highest bloom densities and crop load potential.

An important lesson learned from these trials was that prescription maps should be viewed as dynamic management tools rather than static recommendations. As orchard conditions and crop load estimates changed throughout the thinning season, growers benefited from updating prescription maps to reflect the evolving needs of the blocks. This adaptive approach improved crop load management and helped achieve more uniform thinning responses across highly variable orchard sites.

Notably, none of the cooperating growers required a rescue thinning spray to achieve their desired crop load targets. This outcome suggests that variable-rate thinning applications, when combined with timely field observations and updated prescription maps, can provide growers with a high degree of precision and confidence in managing crop load variability while reducing the need for corrective thinning interventions later in the season, and much less hand thinning in July.

After this variable-rate thinning experiment, we can clearly see the potential for other variable-rate applications aimed at bud load management during the winter months or early spring. In the near future, growers will be able to provide crew leaders and orchard workers with prescription maps on their smart phones as they move through orchard rows and perform more precise manual pruning tasks. Workers will be able to prune high, medium, or low bud load trees to the optimum target bud number by simply viewing their spatial location on a prescription map, identifying whether they are in a high-, medium-, or low-bud canopy zone, and adjusting their pruning severity accordingly.

In the coming years, we also envision variable-rate bud load management being implemented through fully integrated pruning machines. Growers will scan their orchard and then receive a prescription map that can be uploaded into a computer system capable of controlling the machine's hydraulic functions. The hydraulic system will then automatically adjust the pruning machine according to the prescribed bud load targets. Therefore, future implementation of variable-rate bud load management could be achieved through either human labor or automated machinery, or a hybridization of both approaches, allowing for more precise pruning throughout the orchard.

Next Steps:

The harvest evaluation of variable-rate thinning compared with conventional spraying is perhaps the most important final step for growers interested in adopting this technology. Conducting this type of evaluation can be challenging during a busy harvest season. Although growers may rely on visual observations or their own experience to assess outcomes, it is important to accurately quantify both yield and fruit quality to determine whether the technology successfully improved orchard uniformity. Ultimately, growers should evaluate the economic impact of their crop load management efforts and determine whether variable-rate thinning generated sufficient returns to justify the investment.

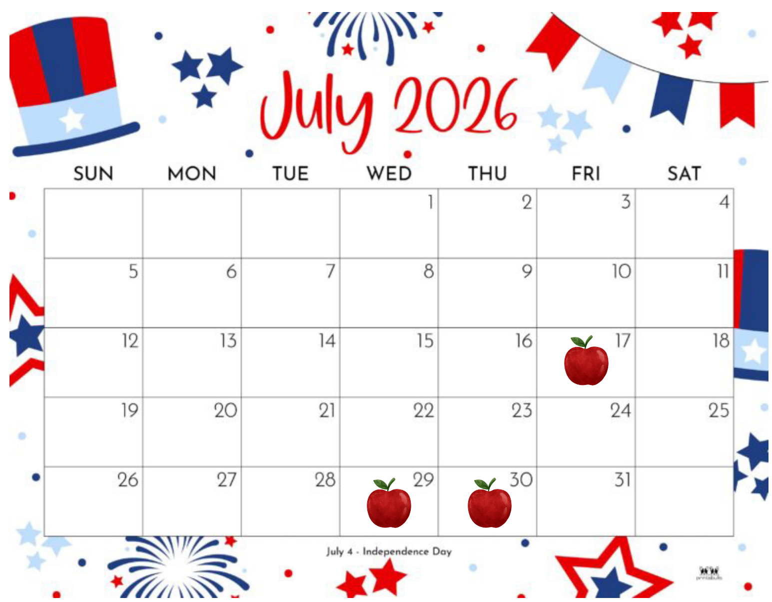
We plan to count the final number of fruits per tree before any hand thinning is performed at the research sites in order to evaluate the predictive power of the Fruit Growth Rate Model (FGRM). In addition, we will measure and compare the hand-thinning time required in the variable-rate and conventional thinning plots at all sites. This data will be incorporated into the economic analysis of the technology.

Finally, we will evaluate the overall impact of variable-rate thinning versus conventional thinning by harvesting the research plots separately and assessing fruit quality and packout performance in commercial packinghouses. Fruit from the Orchard Dale and Lamont research plots will be stored and evaluated separately by Lake Ontario Fruit Company in Orleans, New York. Fruit from the DeMarree research plot will be evaluated by Rice Fruit Company in Pennsylvania.

Mark Your Calendars

Full Events Calendar: https://lof.cce.cornell.edu/ (ON home page under "Announcements" – SAVE THE DATE

Date	Event	Time	Location	Info
June 29	Tree Fruit & Small Fruit Twilight Meeting 3 (https://lof.cce.cornell.edu/event.php?id=2213)	6 PM 6pm Refreshments & DEC Credit Sign In	Orleans County, Medina	Free
July 17	Apple Social, Orleans County	6-9 PM? (TBA)	Yates Town Park, Lyndonville	Free, 3rd year in a row for this social/networking event, food and beverages served. Stay tuned for updates.
July 29	Apple Social, Wayne County	6-9PM? (TBA)	VanAcker Farms Williamson, NY	Free, 3rd year in a row for this social/networking event, food and beverages served. Stay tuned for updates.
July 30	2026 Cornell Fruit Field Day (https://lof.cce.cornell.edu/event.php?id=2208)	All Day,	Cornell AgriTech, Geneva	See article on page 1 of this newsletter. Stay tuned for updates. Registration now open. Attendee cost $25 pp



Visit our website for all upcoming events! → https://lof.cce.cornell.edu/

Contents

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Fruit ***Notes***

Fruit Specialists

Craig Kahlke | 585-735-5448 | cjk37@cornell.edu
Team Leader, Fruit Quality Management

Areas of Interest: Fruit Quality and factors that affect fruit quality before, during, and after storage.
Crops: Blueberries, Raspberries / Blackberries, Strawberries, Apples, Apricots, Cherries, Nectarines, Peaches, Pears, Plums

Janet van Zoeren | 585-797-8368 | jev67@cornell.edu
Integrated Pest Management (IPM)

Areas of Interest: IPM of tree fruit and berry pests, biological control, pollinators
Crops: Blueberries, Raspberries / Blackberries, Strawberries, Apples, Apricots, Asian Pears, Cherries, Currants, Nectarines

Mario Miranda Sazo | 315-719-1318 | mrm67@cornell.edu
Cultural Practices

Crops: Blueberries, Raspberries / Blackberries, Strawberries, Apples, Apricots, Asian Pears, Cherries, Currants, Gooseberries, Nectarines, Peaches, Pears, Plums