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Fruit Notes

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Cornell Cooperative Extension
Lake Ontario Fruit Program



Volume 25 Issue 6 August 14, 2025

This will be the Last Newsletter Until After Harvest

Apple harvest is right around the corner so the team will be busy with harvest projects. Fruit Facts are also suspended. Look for important info in our LOF Announcements (email blasts) and Harvest Maturity Reports.

Sign Up Now for Harvest Maturity Reports

Look for the first Harvest Maturity Report in ~1 week. Testing will begin on Wildfire Gala, Premier Honeycrisp, Ginger Gold, and Zestar! Your \$75 subscription (if in the Lake Ontario Fruit Program partner counties of Niagara, Monroe, Orleans, Oswego and Wayne) gets you critical information on a weekly basis during apple harvest. Fruit samples are usually collected early in the week from across the region and sampled for internal ethylene concentration, firmness, starch/iodine, and total soluble solids. Results are summarized and recommendations for harvest windows of major apple and pear varieties are either faxed or emailed to subscribers later in the week. Satellite subscribers outside of the five partner CCE associations can receive reports as well, for \$100. Not sure if you've subscribed this season? Contact Zayda Moyle zrm24@cornell.edu or 585-798-4265, ext. 122.

You can also use this link (<https://lof.cce.cornell.edu/enrollment.php>) to subscribe for any of our supplemental publications (Fruit Facts & Harvest Maturity Reports) if you are already enrolled in our program.

2025 Harvest Maturity Report Subscription

Please print and submit this form with a check for \$75, (\$100 for those who live and farm outside of Monroe, Niagara, Orleans, Oswego and Wayne counties)

made payable to "Cornell Cooperative Extension"

And mail to: Orleans County CCE
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Email only –in the body of the email and as an Adobe pdf attachment

Fax Only

Email and FAX

Name _____ Email(s) _____

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Thanks to Our Attendees & Sponsors of our
3rd Annual Western NY Fruit Growers Tour!

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“Dude, Where’s My Tractor?” Minimizing Your Risk of Farm Equipment Theft

Bonnie Nelsen, LOFP Business Specialist

Do you think that equipment theft is something that happens to other farmers? I know I did—until it happened to me. In early 2022, I returned from a brief trip to discover that a flatbed trailer and spreader were missing from my Ontario County farm. I decided to question the neighbors because the equipment was parked near their home. The neighbor saw everything: a single person who “cased the joint” and left, only to return with friends and a pickup later that evening. The gang hitched up the trailer, lifted the spreader atop it, and took off. The neighbors didn’t think to call me or the police.

The state trooper who showed up to take my report quickly dashed my hopes of catching the thieves or recovering my equipment. The theft was probably committed by professional thieves who earn a comfortable living by committing high-value, low-risk crimes, he explained. In all probability, my equipment was taken outside the state and already sold. The chances of recovering the equipment or catching the thieves were slim. I called the detective in charge of my case a few times after that, but no progress was made. After a month I stopped calling.

This was not a one-off event. Equipment theft costs U.S. farmers over \$1 billion in losses annually, with less than 20% of stolen assets recovered (Casey, 2025). There’s been a noticeable uptick in farm machinery theft in recent years. In 2023, the National Insurance Crime Bureau reported that there were 1,221 reported thefts of farm equipment each month (Welle, 2025). From 2022 and 2023, the total number of reported thefts jumped from 13,287 to 14,646—a 10 % increase in a single year (Welle, 2025), with sub-compact and compact tractors and specialty equipment (i.e., utility vehicles, all-terrain vehicles and lawnmowers) proving most attractive to thieves. A thriving market for machinery and truck parts (lights, catalytic converters, batteries, and radios) is also driving losses. Harvest season, particularly late summer through fall, marks a steep rise in theft due to longer work hours, more exposed machinery, and limited staff awareness during times of peak activity (Casey, 2025). It’s surprisingly easy to steal farm equipment. Generations of rural life have cultivated a climate of trust. Many farmers operate under the long-held belief that “We know everyone around here; there’s no one to steal from us.” **Ironically, this assumption leads to habits and practices that make theft easier.** It’s common practice for farmers to leave keys in a tractor for the next use, and equipment is often left in remote locations out of sight from residential areas or buildings with surveillance cameras. Replacement keys for tractors and other motorized equipment can be obtained from equipment dealers,

and older tractors from the same manufacturer often share keys. Smaller equipment is easily loaded onto flatbed trucks and trailers, which helps to explain why sub-compact and compact tractors, UTVs, and mowers most frequently go missing. Neighbors and passersby who witness this activity assume it's a part of normal farm operations. And as the police offer suggested, sophisticated theft rings have ways to anonymize and sell equipment with minimal risk to themselves.

PROTECTING YOUR FARM EQUIPMENT

There are many things you can do to reduce the opportunity for theft (Casey, 2025; WSDA, 2022). While several of the suggestions seem drastic and time-consuming, they're worth it if a theft is prevented. You are the best judge of what's worth your time and trouble in your particular situation.

- Never leave the keys in machinery.
- The doors of machinery should be locked if possible.
- Use lockable fuel caps.
- Secure tools and tool boxes.
- Place tongue locks on any equipment that can be moved with a trailer hitch.
- Consider chaining and padlocking gates in orchards.
- Always know where your equipment is located. Perform regular checks to verify locations.
- Understand how criminals operate. They typically coordinate use of a loader and trailer to haul large equipment and breach gates and seasonal roads to gain access. Most thefts occur between 11:00 p.m. and 5:00 a.m. to minimize chances of being observed. Criminals will remove tracking devices and identifying marks on equipment to avoid detection (Casey, 2025).
- When parking for the night, use vehicle positioning and obstruction to thwart thieves. Park equipment in lock-in formations, for instance, blocking a platform or combine with a truck or tractor. Face large vehicles inward or against natural barriers, and block orchard lanes with trucks or tractors to prevent easy removal.
- Install dual GPS trackers—a visible tracker as a decoy and a hidden tracker (epoxied or hard mounted) that alert your phone if the equipment crosses a digital boundary; satellite tracking systems are available for areas without cellular service.
- Where possible, valuable (or easy-to-steal) equipment should be stored in a secure barn or shed, preferably within sight of a farm house or highly visible area.
- Try to secure or immobilize vehicles or equipment when not in use. Machinery left in the field overnight or longer can be disabled by removing the distributor cap or battery. Machinery stored outside or in remote sheds and used only at certain times of the year should also be disabled.
- Equipment can be chained together, or to a tree or securely anchored object to deter thieves. Vehicle and equipment steering wheels can be chained so that they cannot be turned in any direction.
- If barn or shed space is unavailable, consider building a fenced enclosure that can be padlocked for large equipment storage, preferably within sight of a farm house or highly visible area.
- Ensure all machinery and pieces of equipment (attachments, trailers, UTVs, ATVs, mowers) are inconspicuously marked with an identification mark distinctive to your business. This facilitates identification and recovery of your property by law enforcement. Maintain an inventory with the description, serial number, chassis number, and model numbers of all equipment in your farm records.
- Photograph and video record valuable items of machinery and equipment, and store these in a safe place with your records in inventory. Make backups of all digital records.
- Stolen goods need a ready market. Be wary of offers that are too good to be true—they usually are. If you're suspicious about the origins of a piece of used farm equipment, report your concerns to the police.

References: Casey, Robert (2025) "Protecting farm equipment during the height of harvest." Strategic Security, retrieved from <https://www.linkedin.com/pulse/protecting-farm-equipment-during-height-harvest-robert-casey-44cpc/>.

Welle, Elissa (2025) "Tractor theft is easy." Offrange, retrieved from [https://ambrook.com/offrange/supply-chain/maybe-dont-leave-the-keys-in-your-tractor?utm_source=Ambrook+Research+Newsletter&utm_campaign=f6d9168b74-](https://ambrook.com/offrange/supply-chain/maybe-dont-leave-the-keys-in-your-tractor?utm_source=Ambrook+Research+Newsletter&utm_campaign=f6d9168b74-EMAIL_CAMPAIGN_2023_06_26_02_47_COPY_03&utm_medium=email&utm_term=0_-d85bfec4c4-1433616346)

[EMAIL_CAMPAIGN_2023_06_26_02_47_COPY_03&utm_medium=email&utm_term=0_-d85bfec4c4-1433616346](https://ambrook.com/offrange/supply-chain/maybe-dont-leave-the-keys-in-your-tractor?utm_source=Ambrook+Research+Newsletter&utm_campaign=f6d9168b74-EMAIL_CAMPAIGN_2023_06_26_02_47_COPY_03&utm_medium=email&utm_term=0_-d85bfec4c4-1433616346)

WSDA (2022) "Rural crime prevention: Farm machinery theft." Washington State Department of Agriculture Bulletin AGR PUB 555-247, retrieved from <https://agr.wa.gov/getmedia/d7e695fb-971d-4850-9f81-c1d21e9444a0/247-farmmachinerytheft.pdf>.

Union Factsheet for Farm Employees

Farm employees often have questions about unions. Here's a simple guide to help you understand them:

1. **What is a labor union?** 🤝 A union is a group of workers who come together to try to improve their work conditions, like pay, benefits, schedules, safety, and more. The United Farmworkers (UFW) has organized several farms in New York.
2. **What is a union contract?** 📄 A union contract is an agreement between the union and the employer about work conditions. It can cover anything from pay to safety rules.
3. **Why form a union?** 🙌 Workers join unions to have more power when negotiating with their employer. Unions can help get better pay and working conditions. They can also support workers if they are treated unfairly.
4. **Why not form a union?** 🚫 Joining a union means giving up the ability to negotiate directly with the employer. Workers will also pay union dues, which are about 3% of their pay. Unions can't guarantee better pay or conditions, and workers must pay dues even if they didn't join the union.
5. **Why are union organizers visiting farms now?** Since the 2019 Farm Laborers Fair Labor Practices Act, farmworkers can form unions. Organizers are visiting farms to help workers understand unions and get them to sign a union card.
6. **What is a union card?** 📄 A union card shows you agree to join the union and pay dues. Make sure you understand everything before signing. Take a picture of the card because this date is important for revoking the membership. If you change your mind later, but you must wait a year.
7. **How does joining a union affect my immigration status?** Joining a union doesn't affect your immigration status. Only the government can change that.
8. **Are farmworkers required to join a union?** ❌ No. You can choose whether to join, but if more than 50% of workers sign up, the union can represent everyone, and all workers must pay dues.
9. **Can I talk to my employer about unions?** 💬 Yes! You can ask your employer about unions, but they can't stop you from organizing.
10. **Can I stop a union organizer from talking to me?** 🚫 Yes. You can tell an organizer to leave you alone. If they don't, you can call the police.
11. **Why doesn't my boss talk about unions?** 😬 State law prevents employers from discouraging unions or interfering with organizing efforts, but you can bring up the subject and talk to your boss about activities of union organizers, and ask questions.
12. **Can we leave the union later if we don't like it?** It's possible, but it's a long process. If most workers want to leave the union, they can contact the state's Public Employer Relations Board (PERB) to start the process.

This sheet is for informational purposes. Always make sure you fully understand your rights and options before making decisions.

References: [Union strikes and lockouts](#) – Matt Austin Labor Law (2023); [The pandemic and California's farmworker union](#) – The Sacramento Bee (2021); [NY's new tax break—for a few](#) – Empire Center (2018); [Union dues explained](#) – Unit (2021); [Challenges for United Farm Workers – Cal Matters](#) (2022); [United Farm Workers of America](#) – Influence Watch (2024); [Union dues](#) – National Labor Relations Board (2024); [Union memberships](#) – NY State Unified Court System (2024); [UFW and FLOC: Income and members](#) – Rural Migration News (2019); [Can I deduct union dues?](#) – TurboTax Help (2023)

Información Sobre Sindicatos para Empleados Agrícolas

Los empleados agrícolas a menudo tienen preguntas sobre los sindicatos. Aquí tienes una guía sencilla para entenderlos:

1. **¿Qué es un sindicato?** 🤝 Un sindicato es un grupo de trabajadores que se unen para tratar de mejorar las condiciones laborales, como el salario, beneficios, horarios, seguridad y más. Los United Farmworkers (UFW) (Unión de Campesinos) han organizado varias granjas en Nueva York.
2. **¿Qué es un contrato sindical?** 📄 Un contrato sindical es un acuerdo entre el sindicato y el empleador sobre las condiciones laborales. Puede cubrir desde el salario hasta las reglas de seguridad.

3. **¿Por qué formar un sindicato?** 🙌 Los trabajadores se unen a los sindicatos para tener más poder al negociar con el empleador. Los sindicatos pueden ayudar a obtener mejores salarios y condiciones laborales. También pueden apoyar a los trabajadores si son tratados injustamente.
4. **¿Por qué no formar un sindicato?** 🚫 Unirse a un sindicato significa renunciar a la capacidad de negociar directamente con el empleador. Los trabajadores también deben pagar cuotas sindicales, que son aproximadamente el 3% de su salario. Los sindicatos no pueden garantizar mejores salarios ni condiciones, y los trabajadores deben pagar las cuotas, aunque no se unieran al sindicato.
5. **¿Por qué los organizadores sindicales están visitando las granjas ahora?** Desde la Ley de Prácticas Laborales Justas para Trabajadores Agrícolas de 2019, los trabajadores agrícolas pueden formar sindicatos. Los organizadores están visitando las granjas para ayudar a los trabajadores a entender los sindicatos y hacer que firmen una tarjeta sindical.
6. **¿Qué es una tarjeta sindical?** 📄 Una tarjeta sindical muestra que estás de acuerdo en unirse al sindicato y pagar cuotas. Asegúrate de entender todo antes de firmar. Toma una foto de la tarjeta, ya que la fecha es importante para revocar la membresía. Si cambias de opinión más tarde, debes esperar un año.
7. **¿Cómo afecta mi estatus migratorio unirme a un sindicato?** Unirse a un sindicato no afecta tu estatus migratorio. Solo el gobierno puede cambiarlo.
8. **¿Los trabajadores agrícolas están obligados a unirse a un sindicato?** ❌ No. Puedes elegir unirse, pero si más del 50% de los trabajadores se inscriben, el sindicato puede representarlos a todos, y todos deben pagar las cuotas.
9. **¿Puedo hablar con mi empleador sobre los sindicatos?** 💬 ¡Sí! Puedes preguntarle a tu empleador sobre los sindicatos, pero no pueden detenerte de organizarte.
10. **¿Puedo impedir que un organizador sindical me hable?** 🚫 Sí. Puedes decirle a un organizador que te deje en paz. Si no lo hace, puedes llamar a la policía.
11. **¿Por qué mi jefe no habla de los sindicatos?** 😞 La ley estatal impide que los empleadores desanimen a los sindicatos o interfieran con los esfuerzos de organización, pero puedes hablar del tema con tu jefe sobre las actividades de los organizadores sindicales y hacer preguntas.
12. **¿Podemos salir del sindicato después si no nos gusta?** Es posible, pero es un proceso largo. Si la mayoría de los trabajadores quiere dejar el sindicato, pueden contactar al Public Employer Relations Board (PERB) para iniciar el proceso.

Esta hoja es solo para fines informativos. Siempre asegúrate de entender bien tus derechos y opciones antes de tomar decisiones.

Referencias: [Union strikes and lockouts](#) – Matt Austin Labor Law (2023); [The pandemic and California's farmworker union](#) – The Sacramento Bee (2021); [NY's new tax break—for a few](#) – Empire Center (2018); [Union dues explained](#) – Unit (2021); [Challenges for United Farm Workers](#) – Cal Matters (2022); [United Farm Workers of America](#) – Influence Watch (2024); [Union dues](#) – National Labor Relations Board (2024); [Union memberships](#) – NY State Unified Court System (2024); [UFW and FLOC: Income and members](#) – Rural Migration News (2019); [Can I deduct union dues?](#) – TurboTax Help (2023)

Cornell Student Seeking Apple Growers for Interviews

Project Description:

I am a rising senior at Cornell University studying Agricultural Sciences with a focus on pomology and hard cider production. As part of a personal project, I am exploring how apple orchards across New York adopt agricultural technologies. My goal is to better understand the real-world challenges and needs of orchard operators, with the hope of supporting the industry and identifying potential entrepreneurial opportunities that could make AgTech more practical, valuable, and scalable for growers. I'm conducting short interviews with orchard owners and managers to gather insights directly from the field. If you are open to a brief conversation, I would love to connect and hear about your experience.

You can reach me at:

Andrew James

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Harvest Date Prediction & The Use of Plant Growth Regulators Near Harvest

Terence L. Robinson, Mario Miranda Sazo and Craig Kahlke

The 2025 growing season in WNY appears to be tracking about 4 days behind the early season last year. Forecasts from the National Weather Service Climate Prediction Center for the month of August (<https://www.cpc.ncep.noaa.gov/products/predictions/30day/>) are trending towards slightly above normal temperatures for August and normal precipitation. If the weather patterns for the rest of the summer are as predicted (normal for August) we will likely see a “normal” start to the harvest season. To help growers time the applications of ReTain we give the following predictions.

Note: The dates below are approximate. Use your harvest dates from last year and add about 4 days for a starting point.

- Gala harvest should begin about Sept. 5 inland and Sept. 8 lakeside
- Honeycrisp harvest should begin about Sept. 10 inland and Sept. 12 lakeside
- McIntosh harvest should begin about Sept. 7 inland and Sept. 10 lakeside

As we get closer to harvest follow the **Harvest Maturity Reports** and test your apples to dial in ideal harvest timing.

Predictions for Harvest 2025

- Pre-harvest drop: We had a significant number of days with temperatures greater than 90°F in June and July, but few days are predicted for August, thus we expect a moderate risk of preharvest drop.
- Color development: Temperature for the next two weeks in August are predicted to be slightly warmer than normal but in the last 2 weeks of August they are predicted to be cooler than normal which should result in good early color.
- Fruit size: Fruit size is very large due to good heat units so far and great water supply.
- Bitter pit: Our peel sap results show a moderate levels of Ca but high N levels and a slightly elevated K/Ca and N/Ca ratios; Thus, we expect a moderately high risk of bitter pit.
- Chilling injury: The predicted warmer than average temperatures in the next two weeks indicate a relatively low risk of chilling injury.

Suggested timings and rates of ReTain for pre-harvest drop control, harvest management and control of greasiness. Cracking, internal flesh pigmentation and stem end flesh browning.

- **Gala**. Almost all Gala blocks that are destined for long-term storage should receive Retain before harvest to control stem end flesh browning. We recommend the application of only ½ pouch/acre of ReTain at the 3 week before harvest which will be **August 15 inland** and **August 18 lakeside**. Later timings will also control drop, greasiness and cracking and can control stem end flesh browning. (Note from Chris Watkins: we find that the later applications can be just as good as earlier ones for FB control if fruit are stored in low oxygen and 38F, but firmness is compromised if fruit have not been treated with PGRs.) If a further delay of harvest is desired a second application of ½ pouch per acre of Retain should be made 1 week before harvest (about August 29 inland and Sept. 1 lakeside). The two applications of ReTain will permit Gala fruit to remain on the tree an additional 14-21 days resulting in improved fruit size (1 box size with a 21-day delay). Although color development will be delayed if harvest is also delayed then good color will develop. ReTain results in a more uniform maturity on the tree. Multiple picks on Gala can be reduced to 2 or even 1 picking in some cases.
- **Honeycrisp** is very sensitive to ReTain and in most cases is not needed; however, in some years there can be significant pre-harvest drop and ReTain can control the drop; however, it must be applied before drop begins. Farms with large acreages of Honeycrisp can use ReTain to spread out the harvest. We recommend a very low rate of 1/3 pouch per acre of ReTain applied 2 weeks before expected harvest (about August 27) in blocks which have had a drop problem in the past or where harvest delay is needed. A note of caution: ReTain on Honeycrisp can have negative consequences during storage of this variety. If the risk of bitter pit is high (high K/Ca ratio or low crop load), then ReTain will increase the bitter pit incidence during storage. The decision on whether to use ReTain on Honeycrisp should be made only after an assessment of the risk of bitter pit risk.

- **McIntosh** We recommend a combined application of ReTain (1 pouch) + NAA (10ppm) 3 weeks before expected first harvest in years where there are not periods of 90+°F in the month of August. For 2024 which is not predicted to have any days above 90°F we suggest ReTain+NAA be applied about August 13. If a further delay of drop and harvest is needed, then apply a second application of the same tank mix should be applied about August 27.
- **NY1 (SnapDragon)** There is limited data indicating that ReTain can reduce internal browning of this variety. Given the significant browning problems last year, we suggest the application of 1 full pouch of ReTain/acre at 3 weeks before harvest (Sept. 10).
- **For late September and October varieties** the negative effect of ReTain on fruit color development is much less than for early September varieties, thus we suggest the use of the full pouch/acre of ReTain to provide a consistent reduction of fruit drop and greasiness. For October varieties which are harvested under cooler conditions, application timing should be 3 weeks before normal harvest date (10-20 of September). Treating **Empire, Delicious and Jonagold** provides some flexibility in harvest date since those three varieties need to be harvested at about the same time. **Cortland and Jonagold** both suffer from greasiness problems as the fruit mature and ReTain applied 3 weeks before normal harvest can be a very effective control strategy. **Idared and Rome** both suffer from internal flesh pigmentation (bleeding), which can result in rejection of the fruit at the processing plant. Our research indicates this problem can be controlled effectively with ½ pouch/acre of ReTain applied in mid-September.
- **Reminder:** It is critical to include an organosilicone surfactant with ReTain. The organosilicone surfactant improves the uptake of ReTain better than other surfactants thus ensuring that sufficient ReTain is absorbed by the leaf to suppress ethylene production.

Suggestions for the use of Harvista

Harvista is a very effective drop control product which can be applied closer to harvest than ReTain (7-days before anticipated harvest). It does not suppress ethylene production but inhibits its action in the fruit and reduces fruit drop. It has a much more rapid action in the plant than ReTain and can prevent fruit drop even when applied close to harvest. It has a long-lasting effect and will keep fruit on the tree for 4+ weeks which is longer than ReTain. However, like ReTain it also delays red color development. Harvista's active ingredient is 1-MCP which is a gas which must be applied with specialized equipment to get consistent results. A note of caution of using Harvista on Honeycrisp. Harvista on Honeycrisp can have negative consequences during storage of this variety. If the risk of bitter pit is high (high K/Ca ratio or low crop load), then Harvista will increase the bitter pit incidence during storage. The decision on whether to use Harvista on Honeycrisp should be made only after an assessment of the risk of bitter pit risk. Consult your AgroFresh representative for application timing, based on the starch pattern index.

Improving Fruit Red Color

Red color development should be relatively good in early September of 2025 with cooler than average weather in late August and early September. Using reflective film under the tree is a non-chemical method of improving fruit color. However, among the chemical methods of improving color there are 2 options which have been successful. (We continue evaluating other products and lost below an idea that worked well last year).

- Ethrel (300ppm) improves fruit color if applied 1 week before harvest but stimulates ripening and excessive drop 10 days after application. If NAA is mixed with Ethrel then drop can be delayed 10 days but if the fruit is not harvested on time, then excessive drop will occur. We have not shown any improvement in color from Ethrel with the early ripening strain (Premier) of Honeycrisp
- Blush is a plant growth regulator featuring a jasmonate PGR (active ingredient prohydrojasmon PDJ). We found modest but significant improvements in red color when Blush is applied twice (2 weeks and 1 week before harvest of the regular strain of Honeycrisp. The response was improved by waiting for application until fruit are entering maturation (DA meter reading of 1.25 for Honeycrisp or poor coloring strains of Gala). We suggest the maximum rate of 52 ounces per acre applied twice.
- Experimental treatment you may try at your own risk: Last year we had rather good results with applications of Retain (1/2 pouch) 3 weeks before harvest followed by an application of Accede (400ppm) 2 weeks before harvest. The Accede improved color even when ReTain was applied before.

The Use of Reflective Materials and Other Technologies for Improving Fruit Color on High Value Apple Cultivars in WNY

Mario Miranda Sazo, Craig Kahlke, and Terence Robinson



Evercrisp with reflective fabric.

Reflective Materials (or RMs) have become an effective technology for improving fruit color on high value apple cultivars. Two main materials have been adopted in our region.

- **Reflective Fabric** (brands include Extenday and Proline), a white cloth, more expensive, reusable material that can be rolled up and used again in subsequent years, with a lifespan of approximately 7 years.
- **Reflective Film** (including white films and Mylar®, a metallic film), a less expensive non-reusable material.

The basic idea of RMs is to improve the light environment by reflecting light from the ground back up to the trees, especially at the lower part of the canopy, onto high-value apple cultivars. In the last years, most of the RMs have been installed the second or third week of August for

cultivars to be harvested around Sept. 5-10. As a rule of thumb, growers have installed fabrics 7-14 days before anticipated harvest for a particular cultivar (early-season, mid-season, and late-season varieties). Reflective Fabrics can be installed with a tractor-mounted implement for unrolling, and attached to wooden posts with bungee cords. Reflective Films can be installed with grower-built roller machines. The learning curve for adoption of RMs has been very fast and collaborative between WNY growers.

There is a CCE LOF YouTube video about the use of reflective fabrics for improved fruit coloring. It is titled 'Using Reflective Materials for Improved Fruit Color'. The video describes how/when to deploy reflective fabrics and the economics on return on investment (ROI) showing the financial gains or benefits by adopting this technology. Here is the link for the video: <https://www.youtube.com/watch?v=hslkkRlojrQ>

Other Technologies to Improve Fruit Color: In addition to the adoption of fabric materials in our region, some innovative WNY apple growers have also conducted leaf pruning (manual) and applied plant growth regulators. A more recent development has been the purchase of pneumatic defoliation machines (prices around US\$40- 45k/machine) for improved fruit coloring by a few WNY fruit growers.

Leaf pruning (leaf stripping): Leaf pruning can precisely expose shaded fruit to sunlight for better fruit color before harvest. It is an effective but more expensive technique (US \$700-800/acre, or in some cases as much as US\$1,000/acre). It should be conducted from the base of the tree up to about 6-7ft above the ground (the tops of the trees should not be leaf pruned). We also recommend you stop leaf pruning at least 48 hours before the beginning of a period of hot temperatures. If you cannot wait, and you have the time and labor available for any type of leaf pruning, please consider conducting the pruning only on the east side of the canopy (assuming your rows are oriented North-South), to minimize any potential sunburn issues at the hottest time of the day. A more aggressive leaf pruning would be less detrimental if (1) it is coupled with an effective sunburn spray program, (2) it has at least targeted the east side of the tree rows, (3) it has been applied every 15-20 days, and (4) it was started in the middle or end of June.

A few growers have conducted leaf pruning on both sides of a single row. For this more intensive approach, growers leaf prune both sides of the rows at different timings, pruning first the east side and then the west side, 3-7 days apart. The time interval between leaf pruning for both sides of a single row depends on cultivar, canopy width, crop load distribution, and weather conditions.

Leaf removal machines: In 2019 WA growers were introduced for the first time to leaf removal machines that used air pressure to blow leaves for improved fruit coloring. Two machines were used at the orchard demos: one developed by German company Fruit Tec and the other developed by Italian company Olmi. Wine grape growers have used pneumatic defoliation for canopy control for years, but the bursts of air generated by those machines were not powerful enough to be effective in apple orchards, where the leaves have a stronger attachment. In the last years, a few WNY growers decided to invest in modern leaf removal machines to guarantee fruit coloring on high value apple cultivars. Removing leaves a few days before anticipated harvest can help to speed up the coloring process. Preliminary work done in WA orchards in 2019 showed promising results by removing leaves in the season at pre-harvest. The machines can be used up to 3 weeks before harvest, depending on variety and conditions, but more often it should be used closer to harvest, 5-10 days out. Leaf removal for Minnieska™ and Gala should be done around 5-8 days before harvest. Pneumatic machines for leaf removal are a lot faster than humans with hand pruners and can cover an orchard in just 2-3 hours or less. There will be a lot more investigation and learning about the specific timings for pneumatic defoliation for important NY apple cultivars under our weather conditions.

Plant growth regulators: The use of plant growth regulators (PGRs) is the only chemical method described in this short article. There are currently two options which have been successful in trials conducted by Dr. Robinson at Cornell AgriTech.

Ethrel (300ppm) improves fruit color if applied 1 week before harvest but stimulates ripening and excessive drop 10 days after application. If NAA is mixed with Ethrel then drop can be delayed 10 days, but if the fruit is not harvested on time then excessive drop will occur.

Blush is a plant growth regulator featuring a jasmonate PGR (active ingredient prohydrojasmon PDJ). Dr. Robinson found modest but significant improvement in red color when Blush is applied twice (3 weeks and 1 week before harvest of Honeycrisp). Its response was improved by combining with Stimplex (an algae extract that has low levels of hormones). Also the response was improved by waiting for application until fruit are entering maturation (DA meter reading of 1.25).

Summary

- There has been a rapid adoption of reflective materials (mostly Extenday and similar heavier, longer-lasting fabrics) in WNY in the last years.
- Leaf pruning is also effective for enhancing fruit coloring but it can be very expensive.
- Early WNY adopters will be able to tell if the leaf removal machines will eliminate the need for reflective fabric and the extra cost and labor for installation/removal, along with the associated need for storage (Extenday) or waste with fabrics (Mylar®).
- Maximum fruit coloring improvements will be achieved in modern, narrow, mechanically-pruned orchards by using one of the above technologies, or a combination.

Reminder and Update about NYS Farm Employer Overtime Tax Credit Advance Payment

Liz Higgins, CCE-ENYCHP

The Farm Employer Overtime Credit is a refundable tax credit available for farm employers who pay overtime wages, based on the phase-in of an overtime threshold in New York State.

Instead of waiting to receive the full payment when they file their annual income taxes, farm employers may apply to the New York State Department of Agriculture and Markets for a certificate of advance payment for eligible overtime paid between January 1 and July 31 each year. This certificate allows them to then apply to the NYS Department of Taxation and Finance for an advance on their tax credit, rather than waiting until they file their taxes at the end of the year.

Applying for an overtime credit advance is optional. Farm employers may instead choose to claim eligible overtime paid for the entire year when filing their tax return at year-end.

Farms can apply for an advance certificate from AGM beginning August 1, 2025. The deadline to apply is September 30, 2025.

NYS Ag and Markets is strongly encouraging eligible farms interested in applying for the overtime advance certificate, which will

allow them to request the payment from NYS Department of Taxation and Finance, to take the following steps now: Visit the AGM website: <https://agriculture.ny.gov/farming/farm-employer-overtime-credit-advance> to become familiar with the requirements, process, and deadlines, as well as to check for updates.

Register your farm (and/or a representative to file on your behalf, if desired).

Participate in informational webinar hosted by AGM on Friday, July 25, 2025 from 2 – 3 pm. To register for the webinar, please visit [2025 Farm Employer Overtime Credit Advance Overview registration – State of NY Enterprise Webex](#)

Submit any questions to FarmOTAdvance@agriculture.ny.gov.

Are you Eligible for the Tax Credit?

Eligible farmer: a taxpayer whose federal gross income from farming for the tax year is at least 2/3 of excess federal gross income.

Excess federal gross income: the amount of federal gross income from all sources for the taxable year in excess of thirty thousand dollars.

Example: Jo the farmer earned \$150,000 in gross income in 2025. She earned \$95,000 from farming and \$55,000 as a part-time nurse at the local hospital. Her excess gross income = \$150,000-\$30,000 = \$120,000. 2/3 of \$120,000 = \$80,000. \$95,000 is greater than \$80,000 so Jo is an eligible farmer.

Eligible farm employee: an individual who meets the definition of a farm laborer under **labor law § 2:**

<https://www.nysenate.gov/legislation/laws/LAB/2>

who is employed by a farm employer in New York State. A general executive officer of the farm employer is not an eligible farm employee.

(Labor Law § 2) "Farm laborer" shall mean any individual who works on a farm and is an employee under article nineteen of this chapter. Members of an employer's immediate family who are related to the third degree of consanguinity or affinity shall not be considered to be employed on a farm if they work on a farm out of familial obligations and are not paid wages, or other compensation based on their hours or days of work.

(Article 19) "Employee" includes any individual employed or permitted to work by an employer in any occupation, but shall not include any individual who is employed or permitted to work: (b) in a bona fide executive, administrative, or professional capacity; (e) as a volunteer, learner or apprentice by a corporation, unincorporated association, community chest, fund or foundation organized and operated exclusively for religious, charitable or educational purposes, no part of the net earnings of which insures to the benefit of any private shareholder or individual; (g) in or for such a religious or charitable institution, which work is incidental to or in return for charitable aid conferred upon such individual and not under any express contract of hire; (h) in or for such a religious, educational or charitable institution if such individual is a student; (i) in or for such a religious, educational or charitable institution if the earning capacity of such individual is impaired by age or by physical or mental deficiency or injury.

Eligible overtime: is the total number of hours an eligible farm employee works in a week that exceeds the overtime work threshold, not including hours in excess of 60 hours in a calendar week. The overtime work thresholds are listed below.

Starting on	Hours in excess of	And no more than
01/01/24	56 hours	60 hours
01/01/26	52 hours	60 hours
01/01/28	48 hours	60 hours
01/01/30	44 hours	60 hours
01/01/32	40 hours	60 hours

How to Apply for the Advance Payment

Prepare to Apply

(1) If you don't already have one, you will first need to set up a **My NY.gov ID account**: <https://my.ny.gov/LoginV4/login.xhtml>

(2) Collect and organize key employee information. Farms will need to provide the following information for each eligible employee: full name, social security number or taxpayer identification number, total eligible overtime hours worked, employee overtime hourly rate, and employee regular/base rate. [This is a link to the employee payroll information template](#), to organize your payroll information.

Submit an Application to NYS Ag and Markets for a Certificate

Farm employers that used a Professional Employer Organization (PEO) and wish to apply for a 2024 and/or 2025 credit certificate will be required to provide the following via the AGM online application system: the name of the PEO business; the first and last name of the primary contact person for the PEO; a phone number and email address for the PEO primary contact; and documentation that verifies the financial relationship between the farm and the PEO (e.g., service agreement, contract, etc.).

Farm employers, regardless of whether they used a PEO or not, will **not** be required to attach payroll documentation/records when applying for an advance certificate. (Note: Employers should continue to maintain all necessary payroll records and associated documentation should there be any questions from the Department of Taxation and Finance (DTF) or AGM.)

How to Get Your Advance Payment (once you have received your certificate)

After the NYS Department of Agriculture has reviewed your submitted application for a certificate of advance payment you will receive an email from the Department with a determination of eligibility. Eligible farms will receive an advance payment certificate that includes the amount of the credit, a unique certificate number and the names of the owners, partners, members or shareholders with corresponding credit amounts for each (if applicable). The farm employer is responsible for sharing the certificate with all parties so they can each request their credit advance payment from the NYS Department of Taxation and Finance. The deadline to submit your application to NYS Ag and Markets for advance payment certification is September 30! If you miss this date, you will just file for the full amount of the credit with your annual income taxes.

In order to receive the advance payment, each individual must apply the New York State Department of Taxation and Finance Online Services. Credit advance payment requests must be made to the Department of Taxation and Finance no later than November 1. If you miss this deadline, you will just file for the full amount of the credit with your year-end taxes.

Proposal Period Open for IdeasThatWork Incubator

The Northeast Center for Occupational Health and Safety has opened applications for the second round of funding through our **IdeasThatWork Incubator!** If you have an innovative idea to improve the health and safety of farmers, loggers, or commercial fishermen working in the U.S., this is your opportunity to turn that idea into a reality.

To learn more & start your application, click on this link: <https://necenter.org/portfolio/ideasthatwork/>

The Northeast Center is excited to open our second round of funding for the IdeasThatWork Incubator, a pilot program in partnership with George Mason University. **Applications are due September 30, 2025.**

The incubator supports individuals with ideas to improve the health and safety of farmers, loggers, and commercial fishermen. Awardees receive up to \$10,000 per year, as well as mentorship from an expert advisory board and access to other resources.

The awardee's project start date will be December 1, 2025.

We look forward to hearing all about your innovations!

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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



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



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,



Bonalyn Nelsen | 315-980-9926 | bjn2@cornell.edu
Business Management

Areas of Interest: Fruit Farm Business Management, Farm Labor & Regulations, and Evaluation of ROI of New Technologies

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

For more information about our program visit us at lof.cce.cornell.edu

Check out our YouTube Channel: <https://www.youtube.com/channel/UC5PXjElo7nLDY1A81Ek5brQ>