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Fruit Notes

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Cornell Cooperative Extension
Lake Ontario Fruit Program

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Predicted Green Tip Date for WNY in 2022

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Fruit trees must experience cold but non-freezing temperatures in the fall and winter to complete “rest”. In New York this usually occurs in late December or January. Once rest is completed, buds can respond to temperatures greater than 40°F and begin to grow. However, a significant accumulation of warm temperatures (above 40°F) is required before green tip (GT); although non-visible development inside the closed bud is occurring with each hour of warm temperature. We model this process by using growing degree hours (GDH). Experimental data has shown that about 2000 GDH (base 40°F) are required from the end of rest completion until GT. In most winters in NY, the cold temperatures of Jan. and Feb. limit heat unit accumulation so that even though rest has been completed in late December or early January, buds do not begin to develop until warmer temperatures arrive in March and April.

Chill Unit and Heat Unit Accumulation During the Winter of 2021/2022

The winter of 2021/2022 has been quite normal with numerous days in the fall and early winter with optimum temperatures for chill unit accumulation 32-60°F (Figure 1). Using the chill unit model developed in North Carolina, which is an improved version of the original chill unit model from Utah, we estimated that in Geneva, chill units began to be accumulated in mid Oct. (16th) and reached an accumulation of 1080 chill units on Feb. 12, 2022 (Figure 1). Craig ran the model using NEWA weather data from two additional sites, Medina and Appleton North. The model shows rest was achieved on February 17th in Medina, and February 20th at Appleton North. Following the completion of rest in Feb. 2022, fruit trees in WNY have been responding to warm temperatures (accumulating heat units) with non-visible bud development leading toward bud break. Our calculations of GDH in WNY since the completion of rest in February show that by March 22, trees have accumulated ~1200 GDH in Geneva (Fig. 1), 1100

GDH in Medina, and 800 GDH at Appleton North. For our region, this is about 40-55% of the 2000 growing degree hours needed to reach GT. This indicates that we still need a significant number of additional heat units to reach GT in apple.

Forecasting Bud Break in the Spring of 2022

Using forecasted temperatures for the next 3 weeks, we estimated that GT in WNY (Geneva) will be on April 15 for early bloom varieties (Idared) and on April 16 for mid bloom varieties (Delicious). The weather forecast indicates cool temperatures for the next 3 weeks and that will result in a slow accumulation of the needed heat units to reach GT about April 15. We caution that the estimated date of GT is dependent on the accuracy of the weather forecast we used and the accuracy of the models (which in most cases is quite good). **Our prediction of April 15 in WNY** should allow growers a little more time to get spraying equipment ready; but we suggest growers be ready to begin fungicide sprays to control scab by April 8.

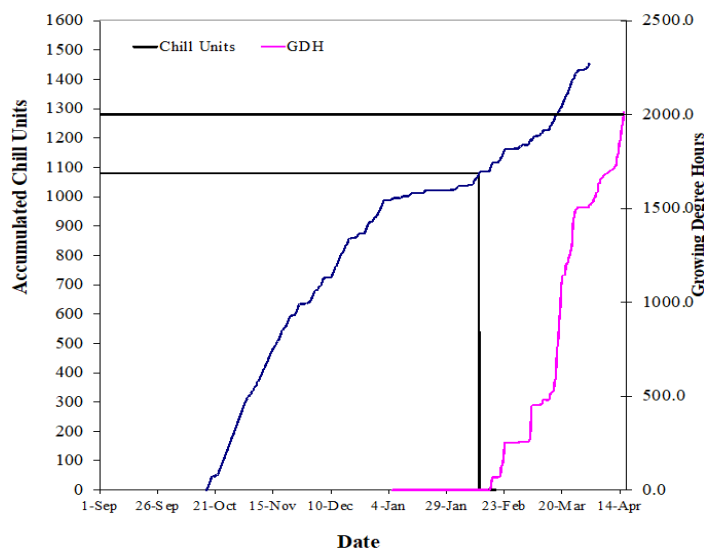


Fig. 1. Accumulated chill units after Oct.16, 2021 (blue line) and accumulated growing degree hours after 1080 chill units (pink line) at Geneva NY during the spring of 2022 through March 22, 2022, with forecasted temperatures from March 22-April 15, 2022.



Fruit Facts begins next week!

Mario Miranda Sazo and Janet van Zoeren

Don't forget to subscribe to receive Fruit Facts this growing season. Spring is in the air (whether we're ready or not), and we will begin with our first issue of Fruit Facts next week. As a reminder, the Fruit Facts newsletter comes out at least once a week (2-3 times during the thick of the growing season) and will provide you with timely and concise information about horticultural and pest management priorities. That's where we will be providing you with any timely

reminders or suggestions regarding horticultural and pest management practices!

Signing up for Fruit Facts is easy – when you enroll in our program, you just need to mark interest in receiving it, and add the additional cost to your total. If you are enrolled, did not sign up for Fruit Facts, and would like to do so, please contact Janet (jec67@cornell.edu) or Kim Hazel (krh5@cornell.edu).

Managing Pruning and Fertilization of Honeycrisp to Balance Growth, Cropping and Fruit Quality

Terence Robinson, Lailiang Cheng and Mario Miranda Sazo

Bitter pit in Honeycrisp is affected by tree vigor, which in turn is affected by both pruning and fertilization levels. Thus, to achieve a balance between vigor and fruit quality we must manage both pruning and fertilization in a coordinated manner. When deciding how severely to prune a Honeycrisp tree we should consider flower bud number per tree and also leaf nutrient levels and the peel sap nutrient values which we have been collecting statewide over the last 2 summers.

From leaf analysis data we often see that some blocks are high in nitrogen (N) and others are closer to our recommendation. With potassium (K) some blocks are high and should receive reduced or no K fertilization. With calcium (Ca) most blocks need additional lime or gypsum. The fruit peel sap data we have collected indicates that many blocks have too high of a ratio of K/Ca and N/Ca indicating the need to better manage all three nutrients. We have recently published a Fruit Quarterly article (Cheng and Sazo, 2021 Fruit Quarterly Winter Issue) where we have suggested modified leaf nutrient targets for Honeycrisp compared to other varieties such as Gala.

First let us address suggested fertilization strategy for Honeycrisp. The recommended levels of N, K and Ca for Honeycrisp are different than the suggested levels on the standard leaf analysis we use for most other varieties. For N we recommend a leaf level of 2.0% (this is similar to what we recommend for McIntosh). For hard varieties like Gala, Delicious, Empire, Rome's etc. we recommend a leaf level of 2.25% but for Macs we have always recommended a lower level of 1.9-2.0. Honeycrisp should be managed like Mac's in terms of N. If you have leaf analysis results from last summer (take leaf samples in early to mid-July) then use the following three rules to determine N fertilization rates.

1. For blocks with leaf N lower than 2.0% we suggest 20 to 50# of N per year to keep the tree

vigor from falling too low. If tree vigor falls too low then no new renewal shoots develop from limb renewal pruning cuts.

2. For blocks with a leaf N level between 2.0 and 2.25% we suggest slightly lowering the rate of N from last year's to allow a gradual lowering of leaf level to the 2.0% target.
3. For blocks with a leaf N level >2.25% we suggest no ground applied N.

Potassium fertilization of Honeycrisp is often tied to increased bitter pit; therefore K fertilizers must be applied with caution and only when leaf analysis results suggest additional K is needed. Based on our recent work published in the Quarterly winter issue 2021, we developed a new recommended leaf K levels of 1.0%. This is lower than other varieties such as Empire and Gala where we strive to elevate leaf K levels to 1.35-1.8%. This high K level for those varieties helps give large fruit size but with Honeycrisp that high of K gives excessive bitter pit. Based on leaf K levels, we suggest you use the following three rules to determine K fertilization rates.

1. For blocks with leaf K lower than 1.0% we suggest 60# of K₂O per year to keep fruit size from being too small.
2. For blocks with a leaf K level between 1.0 and 1.2% we suggest 30# of K₂O per year to maintain good fruit size.
3. For blocks with a leaf K level >1.2 we suggest no K fertilization until leaf level drops below 1.2%.

Ca fertilization is achieved by additions of lime before planting and at bi-annual intervals after planting. Honeycrisp requires higher levels of Ca than other varieties and we recommend a level of 2.0% which is on the high end of the recommended range for Ca level in the leaf. We have been suggesting for the last 2 years to add lime even if soil pH is in the recommended range (between 6.5 and 7.0). In a survey we did, the best

performing blocks had pH of ~7.2 and about 5000# of Ca per acre from a soil test. Based on leaf Ca levels, we suggest you use the following four rules to determine lime fertilization rates.

1. For blocks with leaf Ca lower than 1.3% we suggest 4 tons of lime every other year to raise soil calcium level even if pH goes to 7.1 or 7.2. If soil pH goes above 7.2 then add gypsum instead of lime.
2. For blocks with a leaf Ca level between 1.3 and 1.8% we suggest 2 tons of lime every other year to raise soil calcium level even if pH goes to 7.1 or 7.2. If soil pH goes above 7.2 then add gypsum instead of lime.
3. For blocks with a leaf C level between 1.8 and 2.0% we suggest 1 ton of lime every other year to maintain soil Ca.
4. For blocks with a leaf Ca greater than 2.0% we suggest no lime but add gypsum until soil Ca level is ~5000 lbs. per acre.

Next let us address pruning, vigor and bitter pit.

Excessive pruning does stimulate vigor and excessive vigor results in more bitter pit. We judge vigor based on length of shoot growth.

- If shoot growth on the ends of Honeycrisp branches is more than 15" long then vigor is too high, and this is associated with more bitter pit. In this case light pruning is suggested. If flower bud load is high (due to the on-year) then prune lightly but remove buds by spur pruning to get down to the required flower bud number.
- If shoot growth is between 8" and 12" then vigor is moderate, and with proper management of N, K and Ca, this level of shoot growth is expected to have little effect on bitter pit incidence. In this case normal pruning is suggested. If flower bud load is high (due to the on-year) then prune by removing 1-2 branches and by columnarizing the remaining fruiting branches and then remove spurs to get to the required flower bud number.
- If shoot growth is less than 8" then vigor is low and we get almost no renewal shoots from limb renewal

cut even if we leave long stubs. In this case, increased N fertilization is suggested and a reduction in flower bud number through spur pruning is needed to stimulate a little more shoot growth.

The effect of both pruning and fertilization levels are manifested in bitter pit incidence but also in biennial bearing. Thus, we must manage both pruning based on tree vigor and fertilization based on leaf nutrient analysis to achieve a balance between vigor and fruit quality. The rules for N, K and Ca fertilization and pruning severity we have suggested should be considered for each block based on both the tree vigor level (shoot length) and the leaf and fruit nutrient data.

This year where flower bud numbers are expected to be high since it is an "on year", precision pruning will be essential to controlling biennial bearing but it must be done without increasing tree vigor by excessive pruning. The precision pruning protocol requires the grower to first calculate the number of flower buds to leave after pruning (target fruit number X 1.8) followed by the removal of 2-3 large limbs, columnarizing the remaining branches and the reduce flower bud number to the target by spur pruning. If this level of pruning is done on vigorous trees it may increase vigor even more and increase bitter pit incidence. Thus, the vigor of the tree and the bud target number must be considered when deciding how much to prune the tree. Nevertheless, the precision pruning strategy of pruning to a specific target bud number will be essential to overcome biennial bearing.

In summary, the precision pruning strategy is warranted as long as vigor was not high last year (greater than 12" of shoot growth). In addition, the pruning severity in the "on year" should be coupled with the proper amounts of N, K and Ca fertilization as suggested from leaf analysis.

What Kind of Pesticide Certifications/Trainings Do My Workers Need?

Janet van Zoeren

As we look ahead to the growing (pesticide application) season, you may be wondering what trainings or licenses to get for your workers. Here are a few of your options and some considerations.

Option 1: Certified Applicator. All sprayer operators are strongly encouraged to take the DEC exam and become a certified private applicator. Anyone with experience applying pesticides would only need to pass the exam in order to receive their certification. Those who do not

have experience applying pesticides would need to take an official 30-hour DEC course. You can learn more, and find a time/location to take the exam, at the DEC website, under "Exams and Courses":
<https://www.dec.ny.gov/nyspad/?0>.

Trainings to take the exam: Every year, Mike Stanyard and I offer an 8-hour training, which is designed to help prepare you for the certified applicator exam. This year it was offered in Orleans County, and next spring will be

offered in Wayne County. At this point, we only offer the training in English.

Unfortunately, the exam and the pesticide labels are both only available in English, which will make passing the exam and becoming a certified applicator difficult for those who are not comfortable reading and writing in English. **If one of your employees would like to take the exam, but language is a barrier, please do reach out to me!** I would like to know if there is interest and need for developing a Spanish-language prep course to help with those language barriers!

Option 2: Special Permit License. In a pinch, if an employee is unable to take the exam, but will be

required for application of certain Restricted Use Pesticides (Endigo ZC, Warrior II with Zeon Technology, Agri-Mek SC, Besiege, Leverage 360, Danitol 2.4EC, Mustang Maxx, Lannate LV), we will be offering Special Permit (handler) training again this year. **Special Permit training is available in English and Spanish.** The training will be offered virtually (similarly to 2021). Please register by March 30th on our website: <https://lof.cce.cornell.edu/event.php?id=1642>.

If you have any questions about either of these trainings, you can call or email Janet van Zoeren: 585 797 8368 / jev67@cornell.edu.

Early season disease management in 2022

Liga Astra Kalniņa & Kerik Cox

Cornell University, Plant Pathology and Plant-Microbe Biology Section

Winter finally came again in mid-January, and we had reasonable snowfall through February and into mid-March, most of which came in the form of sporadic snowstorms. Snow cover is now over, and while it's still cool in the evenings, we've had considerable bouts of warm temperatures often exceeding 60°F. Although we may still have a week or two before bud break, the season will be upon us shortly.

In 2021, there was a decent amount of rainfall in early to mid-April, but little in May to June, which was characterized by sporadic, but hot (>75°F) heavy thunderstorms and July more so. Still with the drought from 2020 and the lack of rain from tight cluster to petal fall, my unsprayed trees of several different cultivars had only moderate levels of apple scab. Not surprisingly, there were no reports of apple scab control failures in commercial orchards anywhere in NY in 2021.

Inoculum reduction recommendations in 2022.

Despite the low levels of apple scab in 2021, the conditions were such that there should be plenty inoculum for apple scab in 2022. Hence, it will be important to reduce overwintering or "primary ascospore inoculum", which starts the epidemic that we manage all season. Reducing this initial inoculum will delay the epidemic, and in theory, if there is little rain early in the season, it could possibly delay the epidemic to a point in the season where it would be too dry and hot for the apple scab fungus to cause infection. Since we don't know when the next drought season will occur, we should keep suppressing apple scab so that it can't get a foothold in orchards. Moreover, reducing orchard floor leaf litter and fruit drops may greatly reduce the inoculum for other foliar diseases like Marssonina blotch and numerous fruit rot diseases including bitter, black, and white rot. As soon as it is possible to safely get a tractor in the orchard, remove any remaining fruit drops and pruned shoots left on the floor from winter pruning

as they may contain bitter rot or black rot inoculum. If orchard floor management was practiced in the fall with flail mowing or urea sprays, it won't be necessary to repeat the practices this spring. Even if the planting is in green tip, inoculum reduction may still provide considerable benefit by reducing inoculum pressure by tight cluster or pink, when tissues are at their greatest susceptibility to apple scab.

The two best options for inoculum reduction are to apply the urea to leaf litter or use a flail mower to shred leaves. These practices hasten decomposition of the leaf litter. In the case of flail mowing, leaves should be first swept or raked from underneath the canopy into row middles as most of the apple scab inoculum is present on litter under the trees. Subsequently, go over the row middles with the flail mower set to scalp the sod. If urea is used, apply 40 lbs. of feed grade urea per acre in 100 gallons of water to the herbicide strip (5% solution). Dolomitic lime applied at a rate of 2.5 tons per acre can be used in place of urea. Of the various options, applying urea is the simplest approach, but take care to flush the sprayer pumps with water afterwards since the urea is caustic and can corrode a pump over time. As suggested above, the use of orchard floor urea may also reduce inoculum of other diseases (e.g. Marssonina blotch, Bitter rot, and Black rot).

Delayed-Dormant copper for fire blight inoculum reduction.

The warm weather at and just after petal fall in 2021 allowed for considerable fire blight epidemics in NY. In 2022, there will likely be an excessive number of cankers in affected orchards. However, a "delayed-dormant" application of copper at silver tip will help reduce inoculum of fire blight in cankers and even overwintering apple scab conidia in buds. Presently, overwintering fire blight cankers are still dormant even in my high inoculum fire blight research orchard in

Geneva. As the weather begins to warm (> 60°F) in the coming weeks, fire blight cankers could begin to ooze. **Now is the time to start scouting for oozing cankers.** It's important to note that cold weather will not kill fire blight bacteria overwintering in cankers; the bacteria will remain inactive, but viable at low (< 32F) temperatures. To mitigate the threat of oozing cankers and reduce both fire blight inoculum and early season apple scab inoculum, **make a “delayed dormant” silver-**

tip application of a high (>15%) metallic copper equivalent (MCE) copper fungicide (e.g. Badge, Kocide, Cuprofix). It may be hard to get into the orchards at silver tip due to wet fields, and the application can be delayed to green tip. Even at green tip, it is generally still safe to apply high MCE copper products. In the Geneva research orchards, a second application of a high MCE copper fungicide is often made at ¼” green with no consequence.

Tips in Preparation of Herbicide Shortages in 2022 – Tree Fruit and Small Fruit Crops

Thierry E. Besançon, Rutgers University, and Lynn M. Sosnoskie, Cornell University

Many growers in the US have been focused on predicted herbicide shortages in the upcoming field season. While the primary concerns have surrounded glyphosate and glufosinate, **there is increasing apprehension that active ingredients of importance to tree fruit and small fruit growers may also be affected.** Although the supply change is dynamic, chemical stocks may become, and remain, tight at the local or regional level as growers try to fill gaps in their toolboxes. As spring residual herbicide are soon to be applied, please consider the following when planning for the 2022 season.

Important note: This article was developed for tree, vine, and small fruit growers in mind. Not all herbicides are available in all crops; nor are the same herbicides registered in same crops in both New Jersey and New York. Always review current labels before applying any pesticides to maximize efficacy and safety.

Identification, Scouting and Recordkeeping are Crucial for Optimizing Weed Control Success

The first step in developing a novel herbicide program is knowing what species are present and determining which combination of products will be the most effective (and affordable) at suppressing them. Not all active ingredients are equally useful against all species and careful consideration needs to be paid to each chemical's spectrum of control. Please, carefully review herbicide effectiveness tables for various weed species that are available in the 2022 Commercial New Jersey Pest Control Recommendations for blueberry, tree fruits or grape (<https://njaes.rutgers.edu/pubs/>). Similar tables are available in Cornell's weed control guides ([PMEP Guidelines \(cornell.edu\)](https://www.cornell.edu/pnep/guidelines/))

Familiarize Yourself with Chemical Substitutes before Applying Them over Many Acres

Some switches may be intuitive (e.g. using Poast (sethoxydim) or Fusilade (fluazifop) in place of clethodim where allowed) while others may be more complicated (e.g. using a tank-mixture in place of a single product). In addition to knowing a product's target species, become acquainted with each herbicide's labeled rate structure and spray volume, use patterns (e.g. application timing), environmental limitations (e.g.

soil type or temperature restrictions), adjuvant requirements, and potential interactions with tank-mix partners. Not all chemicals are compatible with each other, and antagonism can reduce weed control efficacy while enhancing crop injury concerns. Contact your Extension Specialists if you have any doubt regarding physical compatibility and efficacy of herbicides mixtures.

Soil-Applied Preemergence Herbicides are Critical Tools

Soil-applied preemergence herbicides are very useful tools for suppressing weeds that emerge with the crop; these plants are the most injurious as early season competitors are very likely to reduce yields. Like postemergence products, soil-applied herbicides must be carefully selected to balance crop safety with weed control needs. Pay attention to rate requirements according to soil type, as this can influence both efficacy and injury. Preemergence herbicides need to be moved (aka activation) into the soil solution (via either rainfall or irrigation) where they are taken-up by emerging weed seedlings; delays in activation can reduce overall performance if some weeds continue to germinate and emerge under low soil moisture conditions. Delays may also facilitate the degradation of some products susceptible to breakdown in sunlight (i.e. photolysis). Be aware that trickle irrigation may cause less effective and less consistent weed control by washing off residual herbicides from top soil where weeds germinate, thus increasing herbicide application costs. **When possible, use overlapping residual products to suppress weed emergence throughout the season.** Some active ingredients may have both preemergence and postemergence activity (e.g. flumioxazin (Chateau) or simazine (Prince)).

Timing Matters

Postemergence (i.e. foliar) weed control should be undertaken when weeds are small and succulent.

Herbicide labels will have specific recommendations regarding the optimal size for treatment. For instance, clethodim (Select Max) and sethoxydim (Poast) have a maximum height or lateral growth requirement of 6 inches for effective control of goosegrass or crabgrass. Weeds are more sensitive to control measures when

they are small and succulent, so rapid identification and management will improve control success. Because many foliar-applied herbicides can also damage crops, as well, always follow label guidance to reduce risk of injury.

Optimize Herbicide Application Rate for Postemergence Applications

Target using the lowest effective herbicide rate to stretch your herbicide supply. For example, instead of applying 32 or 44 oz/acre of a glyphosate brand product, consider using the standard rate on the label such as 22 oz/acre for Roundup PowerMax. **Again, timing of application with regards to weed size will be critical to optimize your herbicide supply.** The smaller the weeds, the less herbicide you will have to apply to control it! Therefore, frequent scouting as highlighted above will be very important to optimize your herbicide application and stretch your herbicide supply.

Don't Skimp on Adjuvants

If herbicides are going to be in short supply, then there may be fewer shots to control weeds. If there are fewer shots available, make every shot count as much as possible. **Follow label recommendations regarding the inclusion of water conditioners, surfactants, etc., to maximize product efficacy.** Refer to point number two about potential compatibility concerns when tank-mix partners are involved.

Get Perennial Weeds under Control

Perennial species such as Canada thistle, goldenrods, bindweed or quackgrass are frequent and troublesome weeds of tree fruit and small fruit crops. Because control of these weeds requires the use of systemic herbicides that may be in short supply (i.e. glyphosate), appropriate timing of application will be critical to maximize herbicide efficacy. For example, Canada thistle

should be sprayed with a systemic herbicide in late spring after flower buds started to develop whereas Virginia creeper or poison ivy should be targeted in mid- to late summer after vines flowers but before fall color appears in the foliage. Use effective alternatives such as clopyralid (Stinger) for control of leguminous and composite (e.g. Canada thistle) weeds or soil-applied pronamide (Kerb) for control of perennial grasses where authorized. This may help you to reserve the use of glyphosate for perennial weeds that cannot be efficiently controlled by other products.

Consider Non-Chemical Weed Control Strategies When and Where Appropriate

This includes hand weeding, cultivation, and mowing practices. Like herbicides, these practices are not effective against all species at all times. For example, while cultivation can control many weed seedlings, particularly at the white-thread stage, soil disturbance is less effective against well-developed plants. In the case of some perennials (for instance, field bindweed or Canada thistle), cultivation contributes to break up and disperse root fragments within and across fields, facilitating dispersal. Ultimately, plan for hand-weeding escapes prior to the weeds setting seeds as this will help reducing the weed seedbank for future growing seasons.

Plan Ahead Now

2022 could be a difficult year if many crop production and protection chemicals are limited. Herbicide shortages could impact weed control success in the coming growing season...and beyond. Weeds that are not controlled in 2022 will set seed that will cause problems in the future. **Planning now can help with weed management in both the short and long term.**

Three Additional Pruning Workshops to Adjust Bud Load of 'Honeycrisp' trees on April 12, April 13, and April 20

Mario Miranda Sazo

I will be conducting three pruning workshops in the month of April and very close to (or right after) the **predicted green tip date for WNY on April 15** as calculated by Dr. Robinson (for more details about this prediction, please review his article in this newsletter). There will be three additional pruning workshops to specifically discuss (in different language formats) how to adjust pruning severity of 'Honeycrisp' trees in 2022. If requested by WNY growers, there may be one last pruning meeting on Wednesday April 27 (in whatever instructional language would be more appropriate, please contact me for this at 315-719-1318, mrm67@cornell.edu).

- One pruning workshop in **Wayne County** with orchard managers Justin Dimercy from Cherry Lawn Fruit Farms and Joaquín Hernández Nava

from Johnson Fruit Farm on **Tuesday April 12 (4-5:30pm)**. I will cover the pruning concepts with both orchard managers in a **bilingual format** and with their respective Jamaican and Spanish pruning crews. All pruning crews are invited to attend this unique education activity in Wayne! Please meet us at the Furber's shop located at 8130 Glover Road, Sodus, NY 14551.

- One pruning workshop in **Orleans County** hosted by Sergio and Silvia Rosario of Rosario Brothers on **Wednesday April 13 (4-5:30pm)**. I will cover the pruning concepts in the **Spanish language** with the Rosarios and Spanish orchard workers of the area. Please meet us at Marshall Farm, 3168 Marshall Rd. Medina, NY 14103.

- One pruning workshop in **Oswego County** hosted by Eric Behling of Behling Orchards on **Wednesday April 20 (1:30-3:30pm)**. I will cover the pruning concepts in the **English language** with grower host, other fruit growers, and Jamaican pruning crews of the area. Please meet us at Behling Orchards, 14 Potter Road, Mexico, NY 13114.

I also would like to encourage you to check the recently posted '**Pruning Guide for Precision Crop Load Management**' video, describing precision pruning, why, how and when to accomplish it. The video has captions in the Spanish language and is very useful for pruning crews.

<https://www.youtube.com/watch?v=29cF8yOKup0>

NEWA: A Historical Perspective

Juliet Carroll and Daniel Olmstead

Founded as the Northeast Weather Association (NEWA) in 1995 through a [USDA Agricultural Telecommunications grant](#), NEWA had 57 weather stations and 6 Bulletin Board Sites. We kept the acronym, NEWA, and updated the name to reflect the many web-based apps that make up the Network for Environment and Weather Applications. Today, more than 700 weather stations across 15 partner US states are the fabric of NEWA, with one "bulletin board" at newa.cornell.edu.

The vision of the people who founded NEWA — Curt Petzoldt, Tim Weigle, John Gibbons, and Cheryl TenEyck of the NYS IPM Program — is still growing and evolving. The Northeast Weather Association, a nonprofit organization including growers, private consultants, Cornell Cooperative Extension employees, processors, and Cornell University faculty depended on membership fees to gain access to NEWA. The Association was disbanded in 2002, but, eliminating the user fees and providing open access resulted in a 200% increase in NEWA useage seemingly overnight! We were onto something big.

By then we had one website, with three main servers and a text-based system. Modems downloaded weather data daily and NEWA tools were running on a one-hour delay or one-day delay. Were these really disease forecasts? No. We needed to download data more frequently, move into a database system, and *quickly* find a new weather station manufacturer partner, because our founding partner, Sensor Instruments (later Sensatronics) was no longer making agricultural instruments. Beyond that, we needed to expand into eastern NY and beyond, to share the positive outcomes of using NEWA tools.

A database structure for our weather data was initiated with Bob Seem's program in plant pathology to support the DMCast model for grapevine downy mildew. Expansion into eastern NY orchards was initiated by Juliet Carroll in fruit IPM. John Gibbons recruited RainWise Inc. as the best possible weather station partner. The year was 2003. In 2005, Juliet Carroll was appointed leader of NEWA. By 2006, we had successfully switched to RainWise Inc. instruments and their software for data delivery. And in 2007, weather

data was fully migrated into the Northeast Regional Climate Center (NRCC) database, solidifying a collaboration with Bill Noon, Keith Eggleston, and Art DeGaetano at the NRCC that had been ongoing since the inception of NEWA.

Enter the golden years of grant writing by Cornell faculty to support small grass-roots efforts on NEWA. Most notably were those involving apple real-time-IPM across New England and NY, which paved the way for NEWA expansion into Vermont and Massachusetts. These grants also ushered numerous improvements to the tools on NEWA for apples, late blight, and grapes. And in 2009, a brand new website was launched at newa.cornell.edu, improving the speed of information delivery, the real-time nature of the tools, and, with NRCC's expertise, adding in a 5-day forecast for many NEWA tools.

During this time, under Juliet's leadership, NEWA grew from 45 weather stations in NY to over 500 in 12 states. Vermont joined in 2010. In 2011, Massachusetts and New Jersey joined, followed by Pennsylvania in 2013, Connecticut in 2014, Minnesota in 2015, New Hampshire, North Carolina and Virginia in 2016, Ohio and Michigan in 2017. Without these NEWA members, NEWA may have ceased to exist! During the NYS IPM Program funding crunch of 2009-2010, NEWA funding got cut. But the grants received from commodity groups in NY and in partner states and the modest partner fees made the difference and kept NEWA growing.

Were over 500 stations and 12 partner states too much for a part-time leader? Yes. NYS IPM Director Jennifer Grant spearheaded funding to hire someone full time. Enter Dan Olmstead in 2017 as full-time NEWA Coordinator! And since then, three more states: West Virginia and Wisconsin in 2018, and Utah in 2020. And over 200 more weather stations; available now from Onset Data Loggers or KestrelMet. A Zen Desk for help? You betcha! Visit our [Become a Partner](#) page to learn how to join NEWA.

Our Vision: NEWA will become *the* source for weather-related information for the IPM practitioner in the Northeast, mid-Atlantic, Southeast, and North Central regions, and *wherever NEWA tools are valid*.

NEWA 3.0 Crop Load and Pest Management Trainings Available

As the growing season begins, you may be reminded that we have a “new NEWA” – NEWA 3.0 launched last summer, and will be the only NEWA interface available to you this summer. If you missed the “NEWA 3.0” or the “What’s New in Crop Load Management” webinars, recordings from those webinars will be good places to start with familiarizing yourself with the new web design.

NEWA 3.0 Introduction | <https://vimeo.com/685931044>

NEWA 3.0 Profile Setup and Dashboard Use | <https://vimeo.com/685940969>

NEWA 3.0 Apple Scab Model | <https://vimeo.com/685938651>

NEWA 3.0 Internal Lep Models | <https://vimeo.com/685949804>

NEWA 3.0 Plum Curculio | <https://vimeo.com/685980793>

NEWA 3.0 Fire Blight Model | <https://vimeo.com/685984674>

All of the Crop Load Management videos are available on the ENY CHP YouTube channel, at:

<https://www.youtube.com/watch?v=UDxEaQDkU04&list=PLk2Q-bw9Aiu6PXq-obah0nVqh8h8J3CcV>.

FDA Launches Agricultural Water Assessment Builder to Help Farms Understand Agricultural Water Proposed Rule Requirements

Questions on this or other food safety topics? Contact Craig Kahlke at 585-735-5448 or cjk37@cornell.edu

The U.S. Food and Drug Administration (FDA) released a new user-friendly online [Agricultural Water Assessment Builder](#) to help farms understand the proposed requirements for an agricultural water assessment in the [Agricultural Water Proposed Rule](#). Use of the tool is optional.

If finalized, the proposed rule would require farms to conduct systems-based agricultural water assessments to determine and guide appropriate measures to minimize potential risks associated with pre-harvest agricultural water. The assessment would include an evaluation of the water system, agricultural water use practices, crop characteristics, environmental conditions, potential impacts on source water by activities conducted on adjacent and nearby land, and other relevant factors, such as the results of optional testing. Covered farms would be required to conduct pre-harvest agricultural water assessments annually, and whenever a significant change occurs that affects the likelihood that a known or reasonably foreseeable hazard will be introduced into or onto produce or food contact surfaces.

The Agricultural Water Assessment Builder prompts users to answer questions and/or fill in information specific to their farms. Information entered into the tool

is not shared with the FDA and will not be saved. However, users have the opportunity save or print the information they provide to their local computers.

This user-friendly tool incorporates information from the Agricultural Water Proposed Rule, the Final Qualitative Assessment of Risk to Public Health from On-Farm Contamination of Produce, and the 2015 Produce Safety Final Rule.

The development of this tool is consistent with our objectives in the [New Era of Smarter Food Safety Blueprint](#) to look for smarter tools and approaches for food safety. We welcome feedback on this optional tool, such as suggestions related to the tool’s functionality and, useability. Feedback on the tool can be sent to agwaterbuilder@fda.hhs.gov.

For Additional Information

- [Agricultural Water Assessment Builder Information Page](#)
- [Federal Register Notice announcing the Proposed Rule](#)
- [FSMA Proposed Rule on Agricultural Water](#)
- [FSMA Final Rule on Produce Safety](#)
- [Final Qualitative Assessment of Risk to Public Health from On-Farm Contamination of Produce](#)

USDA to Gather Data about Farm Labor

Herman Ortiz, Hernan.ortiz@usda.gov, (717) 787-3904

HARRISBURG, PA – USDA’s National Agricultural Statistics Service (NASS) will conduct its biannual Agricultural Labor Survey in April. The survey will collect information about hired labor from more than 2,000 farmers and ranchers. NASS will publish survey results

May 25 in the *Farm Labor* report available on the NASS website.

In the survey, NASS asks producers to answer a variety of questions about hired farm labor on their operations,

including total number of hired farm workers, the total hours worked, and total wages paid for the weeks of Jan. 9-15 and April 10-16. Survey participants can respond online at agcounts.usda.gov or by mail. "Agricultural labor data are critical in helping producers when hiring workers and estimating expenses," said King Whetstone, director of the National Agricultural Statistics Service (NASS), Northeastern Regional Field Office. "The data that farm operators provide through NASS's Agricultural Labor Survey also allow federal policymakers to base farm labor policies on accurate information."

USDA and the U.S. Department of Labor use the results of this survey to estimate the demand for and availability of seasonal agricultural workers, establish minimum wage rates for agricultural workers, administer farm labor recruitment and placement service programs, and assist legislators in determining labor policies.

"By asking about two separate time periods each time we collect data during the year, we are able to publish biannual data and capture seasonal variation," said Whetstone. "This approach reduces the number of times we survey farms, while ensuring that accurate and timely data are available."

All previous *Farm Labor* publications are [available](#) on the NASS website at www.nass.usda.gov. For more information on NASS surveys and reports, call the NASS Northeastern Regional Field Office at (800) 498-1518. Participants can visit youtu.be/6oWSOjGTQzU for further instructions on completing the survey.

Producers responding online will now use NASS's new Respondent Portal. On the portal, producers can complete their surveys, see previously reported data, access data visualizations and reports of interest, link to other USDA agencies, get a local weather update, and more.

Spring 2022 Clean Sweep Promoting a Toxic Free Future for New York State

The Spring 2022 CleanSweepNY collection event will take place in four locations along the I-90 corridor. The four drop-off sites are in Niagara, Monroe, Seneca and Onondaga Counties. Farmers and pesticide applicators/technicians from neighboring counties are encouraged to participate at these locations.

Participants must register to participate in this waste collection program and registration forms can be requested at the following phone number or e-mail address:

Telephone: 518-225-8146
E-Mail: info@cleansweepny.org

CleanSweepNY staff look forward to providing this valuable service to those eligible entities that have waste chemicals for disposal which can potentially contaminate New York State's environment and beautiful outdoor areas.

The collection dates and locations are as follows:

Lockport, NY	Tuesday,	May 10, 2022
Spencerport, NY	Wednesday,	May 11, 2022
Waterloo, NY	Thursday,	May 12, 2022
Camillus, NY	Friday,	May 13, 2022

CleanSweepNY Services are Not Available to Homeowners.

Multi-state Apple Disease Management Survey

We are conducting a survey of apple growers to learn about your experiences in managing pests and diseases on apples and your willingness to adopt a new sprayer called the Intelligent Sprayer created by a team of USDA-ARS engineers in Wooster, Ohio, led by Dr. Heping Zhu. This study is evaluating the use of Intelligent Sprayer in the eastern half of the US for control of the full range of pests and diseases on apples. **You can participate in this survey even if you haven't heard of or tried this new sprayer.**

Your participation in this survey is voluntary. Your responses are valuable to us and will contribute to improving smart sprayer innovations. The responses you provide will be kept completely confidential, and results will be reported in a summary form only. Please answer

the questions by clicking on a response option or entering text in the box. You will have an opportunity to add comments at the end of the survey.

To participate in this survey, please [click to access the survey \(https://go.iastate.edu/4TRGKO\)](https://go.iastate.edu/4TRGKO).

For more information about the survey, please contact:

Dr. Mark Gleason, Professor of Plant Pathology, Iowa State University, mgleason@iastate.edu, 515-294-0579
Dr. Melanie Ivey, State Fruit Pathologist, the Ohio State University, ivey.14@osu.edu, 330-263-3849
Dr. Heping Zhu, Lead Scientist, USDA-Agricultural Research Service (ARS) Application Technology Research Unit, heping.zhu@usda.gov, 330-263-3871

Thank you in advance for your time and attention!

LOF has an Opening this Spring for a Temporary Field Research Technician

Our team has an opening starting ASAP for a Temporary Fruit Field Research Technician. This could be great for a recent (or upcoming) college grad who is interested in research or extension in agriculture. They'd be working on a minimum of 3 precision orchard management projects with us. Ideally, we'd ideally like to hire someone in April or May and have them work through harvest, at the end of October. This is a full-time position during those 6-7 months. They can view the

position description and apply with the link below. Any questions, they can email or email me, cjk37@cornell.edu, 585-735-5448. Thanks! - Craig

The posting will close on Sunday, March 27th. External applicants will need to apply through the Cornell Careers site; the direct link to the posting is http://tiny.cc/Temp_Field_WDR_00029985.

Looking for a Qualified Spanish Orchard Employee to Work in High Density Apple Production

Mario Miranda Sazo

KC Bailey Orchards, Inc. from Williamson, NY, is looking for a bright Spanish-speaking employee with excellent work habits and a very bright future. Chip and Karla Bailey are interested in candidates who have current fresh apple production experience or individuals without significant experience who are interested in learning all practical aspects of planting, establishing, and training high density apple plantings. Qualifications include an outstanding worth ethic, good character, be a

good listener, and a constant desire to learn and improve. Tractor operation skills are also highly desirable. This position offers a good salary based on previous experience, skills, and qualifications. If interested in this job opportunity, please contact Chip Bailey to kcbnyusa@rochester.rr.com; cell phone (315)-587-5030, or Mario at mrm67@cornell.edu; cell phone (315)-719-1318.

'Above paragraph translated to the SPANISH Language'
Se Busca un Trabajador Hispano Altamente Calificado para Trabajar en Huertos de Alta Densidad

La empresa frutícola KC Bailey, Inc. de Williamson, NY, busca un trabajador con excelentes hábitos de trabajo y un futuro brillante. Chip y Karla Bailey están interesados en candidatos que tengan experiencia en producción de manzanas fresca o individuos sin mayor experiencia que estén interesados en aprender todos los aspectos prácticos de plantación, establecimiento, y de formación de huertos de alta densidad. Las calificaciones que se

requieren son una ética de trabajo sobresaliente, un buen carácter, saber escuchar, y un constante deseo para aprender y mejorar. Experiencia manejando un tractor es altamente deseado. La posición ofrece un buen salario basado en la experiencia previa, las habilidades, y las cualificaciones del postulante. Si está interesado en ésta oportunidad de trabajo, por favor contacte Chip Bailey a kcbnyusa@rochester.rr.com; teléfono celular (315)-587-5030, o Mario a mrm67@cornell.edu; teléfono celular (315)-719-1318.

Mark Your Calendars

Meeting Title	Northeast Extension Fruit Consortium, Winter Webinar series
Date	Tuesday, March 29
Time	12:00 pm noon
Location	Virtual
Cost	Free
Contact for Info/Registration	Register for each separately, see link below.
Brief Description of Meeting	Information about the series can be found at: https://ag.umass.edu/fruit/news-events/northeast-extension-fruit-consortium . Join on Feb 22 for the "Precision Crop Load Management of 'Honeycrisp'" talk with Dr. Robinson. He will share results from his extensive 'Honeycrisp' crop load management trials at Cornell AgriTech and on-farm trials. 1 DEC credit is available for this talk.

Meeting Title	Remote Good Agricultural Practices Training and Farm Food Safety Plan Writing Session
Date	Monday, April 4 & Tuesday, April 5
Time	8:45 AM – 4:45 PM on April 4, 8:45 AM – 2:00 PM on April 5
Location	Zoom
Cost	\$35 for April 4 (\$25 for enrollees), \$10 for the optional day 2
Contact for Info/Registration	https://lof.cce.cornell.edu/event.php?id=1648 Craig Kahlke, cjk37@cornell.edu , 585-735-5448
Brief Description of Meeting	See article in this newsletter

Meeting Title	2022 Respirator Fit Test Clinics
Date and Time	April 7 9 AM-4 PM (Orleans Co) April 8 8:30 AM-12 PM (Niagara Co)
Location	Orleans County CCE, Conference Room, South Entrance, 12690 State Route 31, Albion, NY 14411 Niagara County CCE, 4H Training Center, Large Meeting Room, 4487 Lake Ave, Lockport, NY 14094
Cost	\$65 per person
Contact for Info/Registration	Call 607-547-6023 (Monday-Friday, 7:30 am—4:00 pm) and ask for the Fit Test Clinic scheduler OR E-mail FitTest@bassett.org .
Brief Description of Meeting	The New York Center for Agricultural Medicine and Health (NYCAMH) and CCCE of Niagara and Orleans Counties are pleased to provide respirator fit testing clinics for agricultural businesses in your region. During the clinic, NYCAMH will provide medical evaluations, respirator fit tests and WPS compliant trainings on how to properly inspect, put on, take off, fit, seal check, use, clean, maintain, and store respirators. Appointments are one hour long. Up to 4 workers can be seen at the same time. Medical evaluations, fit tests, and trainings are available in both English and Spanish.

Meeting Title	First Bilingual Pruning Workshop (English and Spanish languages)
Date	Tuesday, April 12
Time	4:00-5:30pm
Location	Hosted by orchard managers Justin Dimercy from Cherry Lawn Fruit Farms and Joaquín Hernández Nava from Johnson Fruit Farm. Address: At the Furber’s shop located at 8130 Glover Road, Sodus, NY 14551
Cost	Free
Contact for Info/Registration	Mario Miranda Sazo (cell 315-719-1318; mrm67@cornell.edu)
Brief description of Meeting	Mario will show and discuss how to adjust bud load targets for ‘Honeycrisp’ with Justin, Joaquín, and pruning crews. English and Spanish languages will be used during instruction.

Meeting Title	Second Spanish Pruning Workshop (Spanish language)
Date	Wednesday, April 13
Time	4:00-5:30pm
Location	Hosted by growers Sergio and Silvia Rosario of Rosario Brothers in Medina. Address: At the Marshall Farm, 3168 Marshall Rd. Medina, NY 14103
Cost	Free
Contact for Info/Registration	Mario Miranda Sazo (cell 315-719-1318; mrm67@cornell.edu)
Brief description of Meeting	Mario will show and discuss how to adjust bud load targets for ‘Honeycrisp’ with Sergio, Silvia, and Spanish pruning crews. Spanish language will be used during instruction.

Meeting Title	Pruning Workshop (English language)
Date	Wednesday, April 20
Time	1:30-3:30pm
Location	Hosted by growers Eric Behling of Behling Orchards in Mexico, Oswego County. Address: At Behling Orchards, 14 Potter Road, Mexico, NY 13114.
Cost	Free
Contact for Info/Registration	Mario Miranda Sazo (cell 315-719-1318; mrm67@cornell.edu)
Brief description of Meeting	Mario will show and discuss how to adjust bud load targets for ‘Honeycrisp’ with Eric and his Jamaican pruning employees. English language will be used during instruction with all participants.

Cornell Cooperative Extension

Lake Ontario Fruit Program

12690 Rt. 31

Albion, NY 14411

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Predicted Green Tip Date for WNY in 202

Fruit Facts Begins Next Week

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Tips in Preparation of Herbicide Shortages in 2022 – Tree Fruit and Small Fruit Crops

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Multi-state Apple Diseases Management Survey

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Looking for a Qualified Spanish Orchard Employee to Work in High Density Apple Production

Mark Your Calendar

Contact Us

Fruit Notes

YOUR TRUSTED SOURCE FOR RESEARCH-BASED KNOWLEDGE

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, and pollinators.
Crops: Blueberries, Raspberries / Blackberries, Strawberries, Apples, Apricots, Asian Pears, Cherries, Currants, Nectarines, Peaches, Pears, Plum



Mark Wiltberger | 315-272-8530 | mw883@cornell.edu
Business Management

Crops: Apples, Cherries, Nectarines, Peaches, Pears, Plums

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