LERGP Crop Update
November 21, 2024

Cornell Cooperative Extension
Lake Erie Regional Grape Program

PennState Extension

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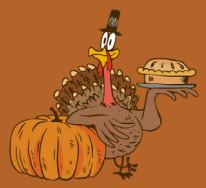

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Click here to watch Podcasts

The Lake Erie Regional Grape Program is a Cornell Cooperative Extension partnership between Cornell University and the Cornell Cooperative Extensions in Chautauqua, Erie and Niagara county NY and in Erie County PA.

2025 LERGP Calendar: PLEASE READ and RESPOND

We are in the process of putting our 2025 LERGP Planning Calendar together, with updates and new content. We have provided our growers with this useful resource for 4 years now, and hope that you have found it beneficial to your operation.

However, the cost of mailing it has increased significantly, and we can no longer ship the calendar to everyone. We are addressing this by offering 2 options.

Option #1- Reserve your copy of the calendar by contacting me and then picking it up at the CLEREL office or the North East Lab when they are ready.

You must contact me by **Friday, December 6th, 2024**.
Kjr45@cornell.edu
716-792-2800 ext 201

Option #2- Reserve your copy with shipping to your home by sending a check for $7.00 to **LERGP, 6592 W Main Rd. Portland, NY 14769**

If you are not an LERGP member, the calendar is available for purchase. The charge is $25.00 plus $7.00 shipping and handling. You can e-mail me or send your request to purchase in the mail.

The LERGP Planning calendar is a unique useful tool to guide you through the year, with reminders about viticulture and vineyard tasks, IPM scouting and spray timing and business deadlines. We hope that you choose to either have your copy mailed or stop by and see us to pick it up.

I look forward to hearing from you!

Katie

Business Management

Andrew Holden, Business Management Educator, Penn State University, LERGP

Three Grants Available (Or soon to be available) for NY Growers

There are three grants available for NY Growers that are either currently open or will be open in the short future. These grants are great opportunity for growers looking to purchase equipment, such as bulk handling or mechanized equipment. There is also a grant for beginning farms (Under 10 years of experience). See below for the details of each grant. If you have any questions or issues apply, contact me for assistance.

New York State Grown & Certified ITRD Grant Program

Funder: The New York Farm Viability Institute

Details: All grantees must be NYS Grown & Certified members prior to reimbursement for their project. Grant applications will be more competitive if the applicant is already enrolled or actively in the process of becoming part of the NYS Grown & Certified program.

For Concord growers, this will mean to get in the NYS Grown & Certified Program:

- **NY Requirement:** 100% Grown in NY
- **Environmental: Every three years,** farms are required to participate/renew in the Agricultural Environmental Management (AEM) program, administered by their county Soil and Water Conservation district, with the completion of Tier 2 of the program (or higher). Grape growers may substitute the Vine Balance Program OR the NY Sustainable Winegrowing for AEM. Renewals must be submitted to the Department.

Amount: Grant sizes will range from $20,000 to $250,000 for infrastructure and technology projects. A 10% match (cash, grant, loan) will be required for all projects

Availability: The Request for Proposals for Infrastructure and Technology **projects will be released no later than November 25.** Applications must be submitted by February 28, 2025.

More Info: https://nyfvi.org/new-york-state-grown-certified-itrd-grant-program-2024copy/

Resilient Food Systems Infrastructure Program - Equipment-Only Grant

Funder: New York Department of Agriculture and Markets, USDA

Details: This competitive opportunity is focused on funding equipment for the aggregation, processing, manufacturing, storing, transporting, wholesaling, or distribution of agricultural food products (excluding meat and poultry products).

Interested in Applying? Sub-awardees are required to obtain a UEI in SAM.gov prior to being issued a subaward. This process can take multiple weeks in some instances, so it is important to start the process now. For information on how to register with SAM.gov and get a UEI number, visit https://sam.gov/content/entity-registration. It is free to register at SAM.gov.

If you have any questions regarding this future grant or obtaining your UEI, please contact me.

Amount: Eligible applicants may request awards in the amount of $10,000 - $100,000. No match is required for Equipment-Only Grants.

Availability: **Anticipated release in 2025** - check back for more information soon

More Info: https://agriculture.ny.gov/resilient-food-systems-infrastructure-program

New York State Beginning Farmer Competitive Grant Program

Funder: The New York Farm Viability Institute
Details: Farmers who have not operated a farm for more than 10 years and who will materially and substantially participate in operating the farm within the State are eligible to submit proposals. It is expected that all applicants will have a serious interest in building a financially sustainable, independent, commercial agricultural enterprise.
Amount: $5,000 - $250,000
For: Growers (Less than 10 years in business)
Availability:

The RFP opened on October 25th and applications will be accepted through January 24, 2025.
More Info: https://nyfvi.org/bfcg-program/

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2025 Pest Management Spray Schedule – What's Your Plan?

Registration for Spray Program!

We are pleased to announce that we will be holding our 2025 Spray Preparation Program on December 3, 2024, from 9AM -12 PM. This program will be similar to previous years with Penn State University's Bryan Hed will be discussing current research on spray programs and presenting options for next year's growing season for vinifera, juice grapes, and organic systems. It is our hope that growers will be able to make informed decisions based off research when purchasing next year's spray products. Penn State University's Megan Luke will also present on the EPA's Endangered Species Act regulation changes for pesticide management and her sprayer calibration work and the importance of regular calibrations. We also will have a presentation by Dave Combs, Cornell Research Support Specialist in Dr. Katie Gold's Grape Pathology Laboratory at Cornell AgriTech, he will share his take on what grape disease management will look like in a post-broad-spectrum world.

The cost for this event is $25 per attendee and there are currently approved by the NYSDEC for CORE 0.50 credits and 2.00 credits in either of the following Categories: 10, 1a, or 22. Sign up today.

PDA has approved for 1 Core, 4 Private Category, 4 Fruit & Nuts and 4 Demonstration & Research.

This course is 170 minutes direct instruction and 30 minutes of Questions and Answers

Speakers: *Bryan Hed,* Research Technologist (Plant Pathology), Lake Erie Regional Grape Research and Extension Center, *Dave Combs,* research support specialist in Dr. Katie Gold's Grape Pathology Laboratory at Cornell AgriTech, and Megan Luke, Lake Erie Regional Grape Program PSU Viticulture Educator.

When: **December 3, 2024 (Tuesday, 9 AM – 12 PM)**

Course Location: **Webinar (ZOOM meeting)** – To register:

Agenda for Program:

- 9:00AM-10:00AM: Bryan Hed, PSU
    - The presentation will discuss disease research results and how the chemical classes of older materials compare to the newer materials. Bryan will also talk about strategies regarding important sprays for disease management throughout the growing season or what to use under each phenological stage.

- 10:00AM-11:00AM: Dave Combs, research support specialist in Dr. Katie Gold's Grape Pathology Laboratory at Cornell AgriTech, Cornell University
    - Dave Coms will present his research on chemicals and biopesticides and what they are, what can they do, what can't they do, etc. He will discuss research of different biopesticides and how they can be incorporated into an Integrated Pest Management Program that may aid in resistance management and sustainability of chemicals available.

- 11:00AM-11:30AM: Megan Luke, Lake Erie Regional Grape Program PSU Viticulture Educator
    - Megan will present on the EPA's Endangered Species Act regulation changes for pesticide management and discuss her sprayer calibration work and the importance of regular calibrations, and a brief review of the EPA's herbicide and insecticide risk mitigation strategies.

- 11:30AM-12PM Questions and Answers

This meeting is intended to be interactive so that growers will have the ability to ask questions concerning specific pest problems or potential problems in the 2025 season.

Topics that will be addressed include: timing of spray applications at critical growth stages; pesticide options, efficacy; and resistance management. It will include two and one-half hours of instruction with time built in for questions and answers totally three hours for the course.

Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

In the Vineyard

On November 19, 2024, the Cornell Lake Erie Research and Extension Laboratory held our Pruning School on our AgriTech Campus in Portland, New York. This program was set up in a direct response from a couple grower requests. The day began with lunch for registrants and a brief overview by Dr. Terry Bates of the pruning research carried out in our region over the decades that have informed our research-based pruning strategies. While the primarily focuses of this program was on crop size manipulation, the role of soil health, nutrient availability, and water cannot be overstated. Enhancing vine size through optimal water and nutrient management supports higher crop loads while maintaining fruit quality and vine vigor. The team discussed the reasoning behind which buds to retain that are the most fruitful, which type of cane wood is ideal, what a 'balanced' vine means and how to determine it, what balancing your vines will do for the future success of your vineyard, and they learned about the many mechanized pruning trials. After a question-and-answer session, the attendees went out into our research vines to observe the CLEREL crew hand-prune vines and how to collect pruning weights, which is an important technique to calculate your crop load and balance your vines.

Photo 1. Growers learning pruning techniques from Dan Sprague Jr and Cornell Lake Erie Research and Extension Laboratory

Photo 2. Growers learning more about the mechanized pruning techniques from Dr. Terry Bates

This event was well attended for our first one in many years. New growers were there to learn as well as seasoned growers who brought their vineyard crew members. We were all pleased with the outcome of this educational event and hoped to continue them in the future. A suggestion was made to add a blade-sharpening portion to future classes to ensure our pruning shears are optimal for the season.

Dr. Terry Bates and others have studied how pruning levels affect Concord Grape Production and have published scientific papers on the results. I am going to summarize their findings below in a quick-and-dirty summary, but if you are interested in the papers, then please feel free to reach out and we can help you with that information. He has posted a blog with resources Click Here for Pruning Workshop Resources.

Increasing Yield at Acceptable Juice Soluble Solids: Enhancing 'Concord' Grape Production
In Concord grape production balancing yield and fruit quality is critical, particularly for growers aiming to achieve acceptable juice soluble solids (16 Brix) while maximizing profitability. The core challenge lies in achieving "vine balance", which is the concept of crop load, defined as the crop size relative to vine size, and it forms the cornerstone of vineyard management in this region. Dr. Terry Bates' research has highlighted the critical role of pruning strategies in influencing vegetative growth, crop load, and juice quality, or the concept of 'balanced' vines.

Balancing Retained Nodes: Maximizing Yield and Maintaining Quality
Terry discussed how pruning techniques to adjust the number of retained buds (nodes) per vine is a time-tested viticultural practice. Dr. Nelson Shaulis's traditional conservative pruning formulas, such as retaining 20 nodes per pound of pruning weight (maximum of 60 nodes per vine), to ensure adequate leaf area-to-fruit ratios to mature the crop under most conditions. However, in warmer, longer growing seasons, these formulas can limit yield potential when conditions are right to ripen more tonnage. On the other hand, minimal pruning increases node retention, allowing higher yields but often delays sugar accumulation due to excessive canopy density with shading and under adverse growing seasons.

A study by Dr. Terry Bates evaluated a range of pruning intensities (60–380 nodes per vine) and found that increasing retained nodes significantly improved yields with minimal delays in harvest timing. He presented a graph of different pruning levels seen below in Figure 1. When looking at the graph, the bottom axis is Pruning Weight in pounds/vine. The attendees learned how to obtain this information in their own operations. The left axis is Yield in tons/acre and the right is Yield in pounds/vine. To figure out your Ravas Index or Crop Load, you need to divide your yield by your pruning weight.

Understanding Crop Load and Vine Balance
Crop load, measured through metrics such as the Ravaz index (yield-to-pruning weight ratio), offers a quantitative framework for assessing vine balance. In cool-climate viticulture, pruning weight is a critical proxy for vine size and total leaf area, both of which influence the source dynamics essential for fruit maturity. However, the definition of "balanced vines" varies depending on regional climate, grape variety, production goals, and market demands. For Concord growers in the Lake Erie AVA, vine balance is often equated with maximizing yield without compromising fruit quality, defined primarily by achieving 16° Brix by harvest.

For instance:

- Doubling retained nodes from 65 to 130 increased yield by ~9 lbs per vine with only a one-

week harvest delay.
- The study identified a “commercial compromise,” where increased retained nodes achieved higher yields without unacceptable delays in ripening.

Below is the handout that Dr. Terry Bates presents on as a tool for pruning decisions to bring Concord vines into balanced production.

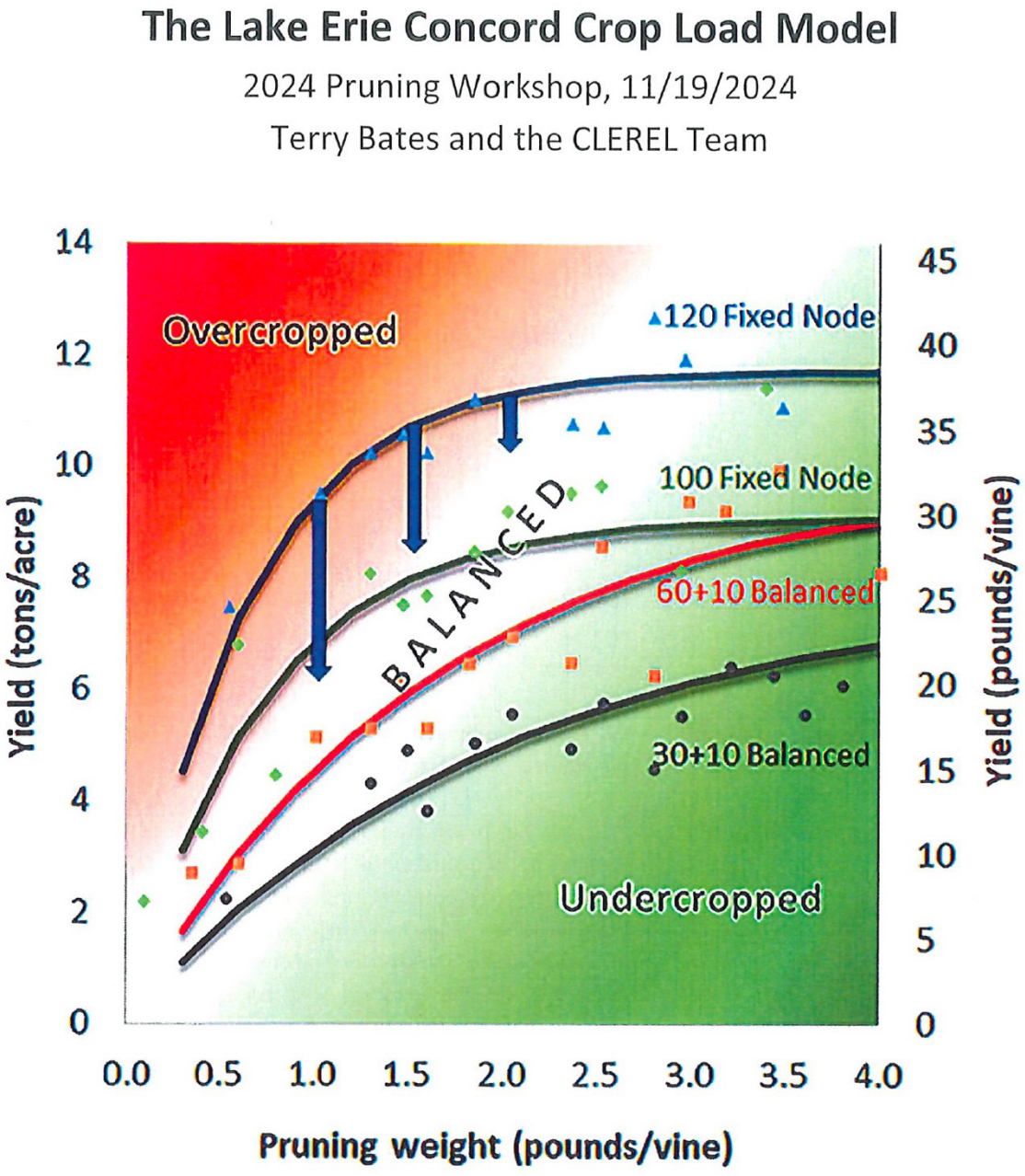

Figure 1. *Dr. Terry Bates’ Lake Erie Concord Crop Load Model*

The Lake Erie Concord crop load model: The relationship between pruning severity, the vine size dash yield relationship, and crop load in Concord (own-rooted, single cordon trained, cane pruned, standard 9-foot row by 8-foot vine spacing). The four curves indicate four pruning severities, the response of each curve represents the vine size-yield relationship at each pruning severity, and the shaded regions represent relative crop load. The blue arrows indicate the level of fruit thinning that would be needed to bring high node number vines into balance at a given vine size.

Table 1. General crop load descriptions and management recommendations for Concord Production in the Lake Erie AVA

Table 1. General crop load descriptions and management recommendations for Concord production in the Lake Erie AVA

Y:PW	Category	Predicted Brix[a]	Management
0-5	Severely undercropped	17.2	Juice soluble solids (JSS) maximized and vine size increased by 0.15-0.20 kg/vine (.33-.44 pounds/vine). Severe undercropping, generally only observed in frost damaged vineyards, can be managed to increase overall vine size and crop potential for the following season.
5-10	Undercropped	17.0-17.2	JSS > 1.0 Brix above the 16.0 standard and vine size increased by 0.10-0.15 kg/vine (.22-.33 pounds/vine). This crop load is not economically viable for long-term Concord production in NY and recommended only when attempting to build vine size in young or stressed vineyards.
10-15	Slightly undercropped *Balanced in cool season*	16.5-17.0	JSS 0.5 to 1.0 Brix above the 16.0 standard and vine size slightly increased by 0.03-0.09 kg/vine (.07-.20 pounds/vine). This conservative crop load can be achieved with moderate balanced pruning, does not require fruit thinning, and will still mature to 16 Brix in cooler than average seasons.
15-20	**Balanced in average season[b]**	**16.1-16.5**	**JSS at or slightly above the 16 Brix standard and vine size maintained +/- 0.03 kg/vine**
20-25	Slightly overcropped *Balanced in warm season*	15.7-16.0	JSS below the 16 Brix standard and vine size reduced by 0.03-0.09 kg/vine (.07-.20 pounds/vine) in an average season. Harvest delays and reduced crop potential for the following season are expected; however, vines will maintain balance in warmer and wetter than average seasons. This crop load recommended if mid-season fruit thinning is part of the management strategy. In cool and average seasons, the crop can be moderately thinned to maintain balance. In warm seasons, no thinning would be necessary.
> 25	Severely overcropped	<15.7	JSS well below the 16 Brix standard and, if left unthinned, will still require a significant period of ripening after harvest has started. Vine size will be reduced by > 0.1 kg/vine (0.25 lbs/vine) with a lower future yield potential and a lower return crop. It requires excessive fruit thinning to achieve vine balance mid-season, which has been shown to cause canopy damage in Concord and negates the positive effects of fruit thinning on vine size/health. This level of crop load stress is not recommended.

[a] Predicted Brix in an average season at a standard harvest of 30 - 40 days after veraison. The given ranges reflect this spread of time.

[b] An average season = 1455-1723 GDD (+/- 1 st. dev. from the 11 -year GDD mean). Cool season < 1455 GDD, Warm season > 1723 GDD.

Risks and Mitigation
High node retention can risk overcropping if bud fruitfulness or fruit set exceeds expectations, which will delay fruit ripening. There are ways to mitigate this situation and bring the vines into balance with midseason interventions, such as crop estimation and fruit thinning one month after bloom (resources can be found here Click Here for Crop Estimation Information, Dr. Terry Bates research has proven effective in ensuring juice quality while managing yield when vines are overcropped.

Reducing Costs Through Mechanization
Labor-intensive dormant pruning has traditionally been the largest production cost in 'Concord' vineyards. The introduction of mechanical pruning systems in the 1970s aimed to reduce these costs while maintaining appropriate node retention and crop balance.

Mechanical Pruning Techniques
Various mechanization systems have evolved, balancing cost savings and crop quality:

1. **Manual Pruning**: Traditional method with the highest precision but also the highest cost.
2. **Mechanical + Manual Pruning**: Combines machine pruning with manual follow-up to retain 100–120 nodes per vine. This approach reduces labor costs by 56% compared to manual pruning while maintaining quality.
3. **Mechanical-Only Pruning**: Relies entirely on mechanization with subsequent crop adjustment via mechanical fruit thinning. This reduces labor costs by 80% but risks canopy density issues, which can impact juice quality.
4. **Minimal Pruning**: Most cost-effective but least reliable in achieving acceptable juice soluble solids in cooler climates.

Practical Considerations for Implementation
Each pruning method offers unique benefits suited to specific vineyard goals:

- **Manual Pruning**: Best for vineyards prioritizing individual vine management and precise crop load adjustments.
- **Mechanical + Manual**: Strikes a balance between cost efficiency and quality, making it ideal for growers with medium to large vineyards.
- **Mechanical-Only and Minimal Pruning**: Suitable for large-scale operations focused on reducing production costs, though minimal pruning requires careful monitoring and potential crop thinning.

Conclusion
Optimizing yield and maintaining acceptable juice soluble solids requires a strategic approach to pruning. Research demonstrates that increasing retained nodes per vine can enhance yields while delaying harvest minimally, provided midseason crop adjustments are employed. Meanwhile, adopting mechanical pruning systems significantly reduces costs, offering growers a pathway to improved profitability without compromising quality. The choice of pruning strategy should align with vineyard size, climate conditions, and grower objectives. For most New York 'Concord' grape growers, mechanical + manual pruning represents the most balanced and economically viable option, achieving higher yields and quality while minimizing labor costs.

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PA Update

Megan Luke, Penn State Extension Viticulture and Tree Fruit Educator

SAVE THE DATE

Free respirator fit testing at Burch Farms on Wednesday, February 12th

Penn State Extension's Pesticide Education team offers this free service, and it takes place each year during the Winter Commercial Tree Fruit event in Erie County. You DO NOT have to participate in the Tree Fruit event to receive a respirator fit test and the required 30-minute training that comes with a letter or certification. The testing and certification are free; you can sign up for a spot and show up only during that time.

Free respirator fit testing is open to any PA grower and a limited number of NY growers IF you are a LERGP member. Please contact Megan Luke to be put on the list to schedule your test when registration opens.

Remember that respirator fit testing is mandatory for pesticide applicators using pesticides that require the use of respirators. Be sure to clean and inspect your device for damage and replace cartridges as needed.

If you haven't read about the upcoming changes to pesticide labeling, please see the resources listed below from previous Crop Updates.

EPA Herbicide AND Insecticide Strategy Update

****The first pesticide labels containing these new sections on mandatory mitigation are on shelves as of October 2024****

L-Glufosinate-ammonia is a new formulation of generic glufosinate (Liberty ™) and is the first herbicide to carry new requirements under the EPA's pesticide herbicide strategy. I will review these changes at the "What's your spray plan..?" webinar in December, but for now, please be aware that these changes are going live, and it is your responsibility to read ALL labels thoroughly so that you can meet these new requirements and remain in compliance.

The requirement to check the Bulletins Live! 2 website before all herbicide and insecticide applications (when required by the label) and the requirement to include documented mitigation strategies when applying herbicides within a Pesticide Use Limitation Area (PULA) i. e. critical habitat for one or more endangered species is now within the label language, and therefore, enforceable by law.

A new toolbox with information, webinars, guides, and calculators for meeting these new pesticide use requirements has been developed and released. Remember: these changes are occurring on a Federal level, and ALL growers are subject to these new use

requirements.

The toolbox can be found here: EPA Toolbox for Endangered Species Act, Bulletins Live, and the Mitigation Library and Calculator

These changes to pesticide use requirements are a drastic change from our standard practices and require additional record keeping and research before every pesticide application. I will provide more information on these requirements at the upcoming Spray Program Webinar and our annual conference in Fredonia, NY.

Herbicide strategy can be found here*: https://www.regulations.gov/docket/EPA-HQ-OPP-2023-0365

Insecticide strategy can be found here*: https://www.regulations.gov/docket/EPA-HQ-OPP-2024-0299

*Both dockets require downloading the strategy overview with an appropriate PDF viewer.

EPA's Bulletin Live! 2 Website can be found here: https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins

Contact information:

Mobile (*call or text*): (716) 397-9674 (*preferred*)

Office: (814) 825-0900

Email: MFL5873@psu.edu

Updates and Information

Kimberly Knappenberger, Extension Support Specialist, LERGP

NEWA

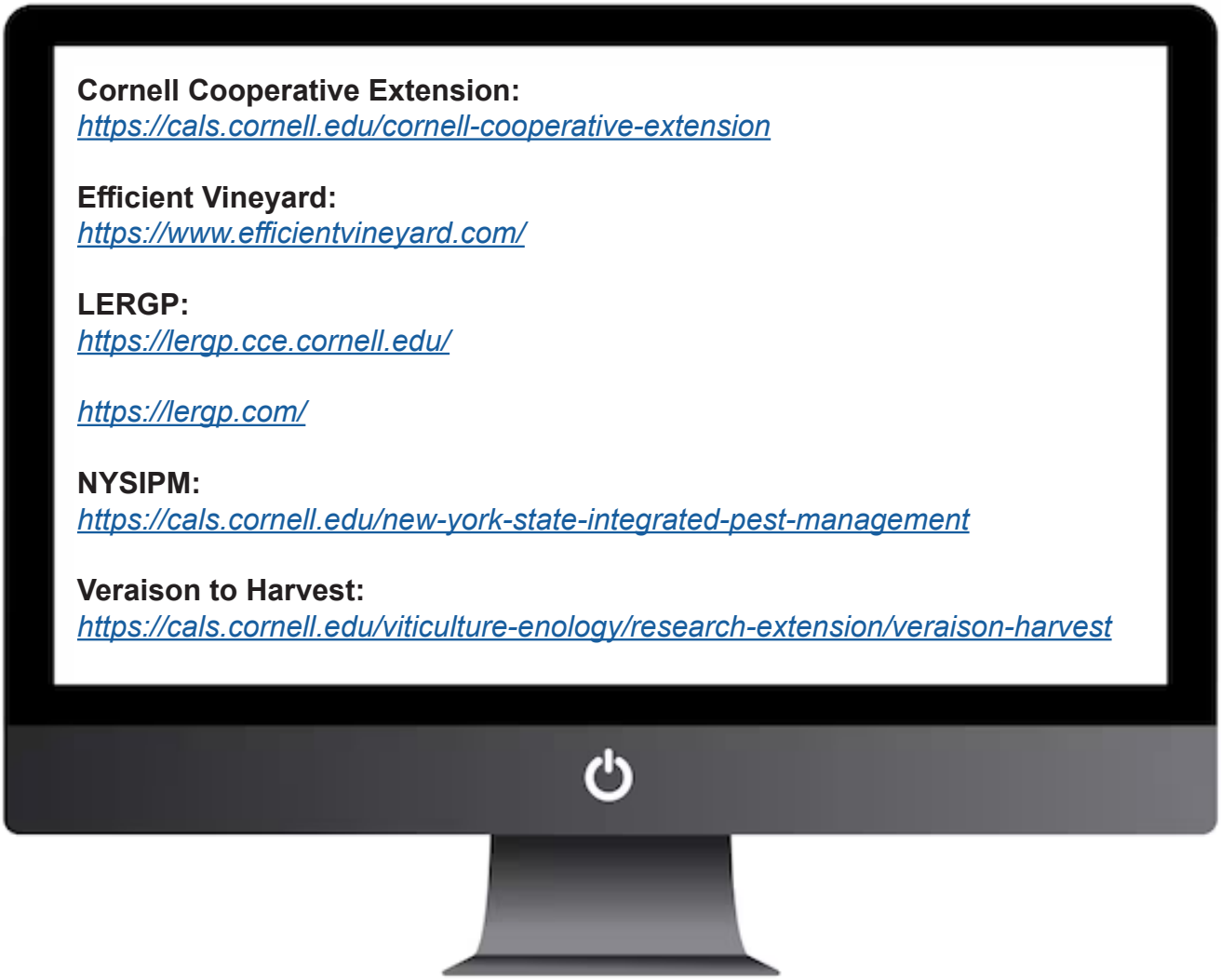
We are excited to announce that we have found a home for that second Onset HOBO station and it is set up and collecting data! For a while now I have not been comfortable reporting the Dunkirk airport data in our Growing Degree charts or using models based on that station. My theory is that it collects growing degrees faster due to the placement of the station – possibly over something other than grass.

This new station will be called Dunkirk (Route 5) and is located two miles northeast of the airport just off Route 5. The onboarding process has begun with NEWA and it should be accessible within the next week. It will be good to have another reliable station collecting data near the lake shore – especially for those growers in that area. Here is the most updated list of stations in our region. As always, any feedback or suggestions about where we are lacking coverage is welcome!

Figure 1 new Onset HOBO station set up Dunkirk (Route 5)

Lake City PA	East Fredonia NY
Lake City (Mason Farms) PA	Forestville NY
Harborcreek Escarpment PA	Dunkirk (Route 5) NY
Harborcreek PA	Sheridan (Liberty) NY – pending
North East (Side Hill) PA	Sheridan NY
North East (Escarpment) PA	Silver Creek (Route 5) NY
North East Lab PA (owned by PSU)	Silver Creek (Double A Vineyards) NY*
North East (State Line) PA	Hanover NY
Ripley (State Line) NY	Versailles NY
Ripley (Escarpment) NY	Brant NY
Ripley NY	Brant (NYS Mesonet) NY***
East Ripley NY	Ransomville NY
Westfield (South) NY*	Lockport NY*
Westfield NY	Newfane (Chautau Niagara) NY
East Westfield NY	Burt (NYS Mesonet) NY***
Portland (LERGP West) NY	
Portland NY	
Brocton (Escarpment) NY	*Privately owned
Fredonia (NYS Mesonet) NY***	***Part of the NY Mesonet system

Links of Interest:



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https://cals.cornell.edu/cornell-cooperative-extension

Efficient Vineyard:
https://www.efficientvineyard.com/

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NYSIPM:
https://cals.cornell.edu/new-york-state-integrated-pest-management

Veraison to Harvest:
https://cals.cornell.edu/viticulture-enology/research-extension/veraison-harvest