Cornell Cooperative Extension
Lake Erie Regional Grape Program

First Quarter Report 2024

A cooperative program between Cornell and Penn State Universities, Cornell Cooperative Extension Associations in Chautauqua, Cattaraugus, Erie and Niagara Counties, Penn State Extension – Erie County, NYS IPM Program, National Grape Cooperative, Constellation Brands, Walker's Fruit Basket and growers of the Lake Erie Grape Industry

2024 First Quarter Impacts

Eastern Viticulture and Enology Forum (EVEF) Webinar Series

The Eastern Viticulture and Enology Forum (EVEF) hosted a webinar: Optimizing Vineyard Spray Programs: Insights from FRAME Networks Project. Eastern Viticulture and Enology Forum Series (EVEF) is a collaborative effort between the Penn State Extension Grape and Wine Team and several viticulture and enology Extension programs from the following U.S. land grant institutions: Colorado State University, Cornell University, University of Georgia, Iowa State University, University of Maryland, Ohio State University, and Rutgers University. As part of the Eastern Viticulture and Enology Forum Webinar Series, this session is a collaborative effort between these viticulture and enology extension programs coordinated for grape growers and winemakers. On January 10, 2024 we held a viticulture session - Building Better Spray Programs: practical outcomes from the FRAME networks project, January 24, 2024 was an enology session - An Acid Management Toolkit for Eastern Wines, February 14, 2024 viticulture session – A current review of Spotted Lanternfly updates and findings in vineyards, and February 28, 2024 enology session - Management of Malolactic Fermentation: impact factors. The speakers discussed the biggest takeaways for grape growers across the United States. These events were very well attended.

MyEV Workshop

Dr. Terry Bates and Jennifer Phillips Russo held a MyEV Workshop as a direct result of our advisory committee suggestions. Our growers asked for more opportunities to come in and learn more about the MyEV Tool and how it may benefit them in their operations. MyEV Tool is a precision agricultural tool that was developed for the grape industry through the 6.2 million dollar Specialty Crop Research Initiative grant the Efficient Vineyard Project. This led to another grant with Dr. Terry Bates through NIFA's AFRI grant, Cost effective spatial data visualization and decision support for small and medium-sized vineyards. It is our goal to engage producers to use personalized digital agriculture solutions in their own operations. The problem is that most small producers do not have the tools (process) or information (content) or experience (high impact activities) to achieve transformational education in digital agriculture. By integrating research-based digital agriculture education, new spatial processing tools, and producer-led on-farm activities will lead to transformational education in spatial-data driven variable-rate farm management. We held several one-on-one meetings with growers to get them started this quarter and had 18 attendees at our first two MyEV Workshops in January and February 2024.

Cold Hardiness Monitoring

The New York Wine and Grape Foundation has funded our cold hardiness research for years. Each fall and winter, grapevine tissues produced during the growing season transition from a cold-tender to cold-hardy state. This process, known as cold acclimation, allows vines to survive low winter temperatures. Winter low temperatures that fall below a critical value can damage grapevine buds. The

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critical temperature for bud injury varies over the dormant season and responds to daily changes in temperature. As temperatures rise after mid-winter, grapevine tissues deacclimate in a gradual process, culminating in bud burst and active growth at the start of the growing season. How fast this process happens, and to what extent vine tissues survive extreme winter low temperatures, depends upon the cultivar, seasonal temperatures and how they vary, and the vine's condition as it enters the dormant season. We measure this critical temperature through a procedure called differential thermal analysis, which involves controlled freezing of a sample of buds collected from vineyards and reporting the Lethal Temperature where growers can experience 50% bud loss, or LT50, and posted on our website as well as in crop updates and podcasts. This information can be used to help guided management practices to compensate for potential losses. In 2023-2024, we monitored and reported cold hardiness for 15 cultivars. We monitor samples weekly from November to March.

Photo 1. Cold Concord buds

Bud Hardiness Data Website

Our cold hardiness research of weekly monitoring of LTE's during acclimation, dormancy, and deacclimation across the Lake Erie Grape Region was posted to the Bud Hardiness Data Website Click Here, where winter hardiness data from differential thermal analysis has been shared with industry since 2009, and is posted continually during the dormant season, providing growers with up to date information about potential winter injury to buds. Dr. Londo and his lab were tasked to develop a temperature-driven model that is based on real measurements of the physical response of vines to different deacclimation temperatures. They used data collected from this project to validate the model, which we hope will provide New York and Pennsylvania growers with accurate predictions of bud freezing temperatures (based on daily min/max temperatures) and will be accessible region- wide through the NEWA weather site. We have succeeded at this research objective and have presented it to growers to make better management decisions.

Microclimate Sensor Grant

Dr. Jason Londo and Jennifer Phillips Russo collaborate on tracking grapevine cold hardiness and phenology across the region with microclimate sensors deployed in 15 grower collaborator vineyards. We are collecting data from five locations on Lake Erie, five locations located on the bench, and five locations on the escarpment. The team collects data weekly to help achieve the objectives of this study to conduct phenological assays for Concord grapes in multiple locations, to determine the variability between vineyards, and to provide updated field cold hardiness/phenology and hopefully begin to build phenology predictions for the New York grapevine industry. We have concluded the cold hardiness collections for this year.

2024 Spotted Lanternfly Summit

Organizers of the 2024 Spotted Lanternfly (SLF) Summit reached out to the Lake Erie Regional

Grape Program to invite us to present our industry's needs, concerns, and upcoming challenges that we will face when the Spotted Lanternfly reaches our region. This 8th Annual SLF Summit was an event that provides research and regulatory information to parties interested in learning more about spotted lanternfly. It was an opportunity to be in front of funding agencies, researchers, and decision makers to introduce them to what a highly mechanized industry will encounter when this agricultural pest invades our vineyard blocks. We gave a powerful panel discussion that included a representative from the juice industry, the wine industry, and the nursery industry in our region to convey concerns of management strategies, potential delays in operations, and the potential economic impact nationally and globally should those disruptions occur due to SLF. This was a very important meeting for the future of our Integrated Pest Management, not only on a regional level, but also nationally how this invasive will affect other mechanized regions that will soon be threatened by SLF as well. We were officially thanked in front of the attendees for bringing industry concerns and interactions to the Spotted Lanternfly Summit, a piece that has been missing from the inception of these summits. I am very proud of the exposure, recognition, and support that we received after our presentation and panel discussion, and I am hopeful for future outcomes.

Lake Erie Regional Grape Program Vacancy

The Lake Erie Regional Grape Program welcomed Andrew Holden, LERGP's Business Management Specialist, to our team on March 1, 2024, filling the vacancy since May 2023. Andrew pursued his education at Ohio State University, earning a B.S. in Agribusiness and Applied Economics and later obtaining an M.S. in Agricultural and Extension Education. In his previous role he served as the Ashtabula County Agricultural Extension Educator with Ohio State University Extension for the past 5 years. Andrew is eager to bring his passion for agriculture, grapes, and wine along with his economic knowledge to this new position and to the growers in the Lake Erie Grape Region. He is looking forward to engaging with growers to help him understand their needs to ensure that his role equips them with the tools needed for success. His office is located at the Cornell AgriTech campus in Portland, NY (CLEREL).

Photo 2. Andrew Holden Business Management Extension Educator Lake Erie Regional Grape Program

2024 Lake Erie Regional Grape Program Winter Grower Conference

Photo 3. 2024 Winter Grower Conference attendees learning research-based information

We held an excellent program on March 14, 2024, at the New York State University of New York at Fredonia. Winter Grower Conference featured experts from many fields. The grower advisory panel had many suggestions of important topics that they wanted information on. As always, the day was full of information on the latest research-based tools that can be taken home and applied to your vineyard. Our regional growers and industry stakeholders come to the LERGP Growers Conference in March of each year to hear the research-based information developed by Cornell and Penn State faculty and extension staff as well as other speakers from across the country. This event was very well attended with over 100 in attendance.

Guest Speakers
The first quarter was extremely successful for sharing the research that we are conducting in the Lake Erie Grape Region. Jennifer Phillips Russo was asked to give 10 research-based presentations to industry stakeholders and researchers across the US and in Ontario, Canada. This is testiment to the great work being conducted in our region that is relevent for other grape industries.

Pesticide Sprayer Calibration- Megan Luke, PSU Extension Viticulture and Tree Fruit Educator

Calibration services and coverage demonstrations to growers in both NY and PA have started for the year. I am working on analysis of historic program data I will be developing data-driven dashboards to demonstrate the impacts of sprayer calibration in terms of economics and agroecology throughout the coming season.

So far 10 growers have signed up to receive onsite calibration of spray equipment for April and May. Services will begin once the weather stabilizes, and an enclosed trailer has been delivered (on order). Two demonstrations have been given on calibrating small spray equipment in Randolph, NY and at the Alleghany CCE office in Belmont as part of the pesticide applicator preparation courses offered through CCE.

Customized equipment for pesticide sprayer calibration

Spray coverage demo with water sensitive paper

Lake Erie Regional Grape Program (LERGP)

Jennifer Phillips Russo & Megan Luke, LERGP Extension Team

Cornell Cooperative Extension's Lake Erie Regional Grape Program (LERGP) is a membership program for NY and PA growers. As the Penn State Extension team member, I am responsible for providing resources and information to our growers via updates on Penn State research, surveys, and programs. Renewal letters were sent out last quarter, and through additional speaking engagements promoting the LERGP benefits we have increased our enrollment in Erie County, PA by 4 growers.

Jennifer Philips Russo and I attended the Annual Spotted Lanternfly Summit in Harrisburg, PA at the request of Penn State Extension and the Pennsylvania Dept of Agriculture. We presented on the risks and concerns over SLF in the Lake Erie Region with industry stakeholders and were well received.

Crop Updates were released intermittently to growers via email during the winter months and will be weekly beginning in April. I have contributed several articles regarding new Environmental Protection Agency guidelines and label changes, as well as pesticide best practices. I presented on these updates at the March 14th Winter Grape Grower Meeting at SUNY Fredonia.

The LERGP team is excited to be able to continue to offer educational outreach and pesticide recertification credits to our industry stakeholders, and I am happy to be able to add core credit presentations for PA growers at Coffee Pot meetings this year.

To augment our usual Coffee Pot Meeting series, we are offering an all-day workshop on spotted lanternfly including current research and management strategies on May 1st (link) (https://extension.psu.edu/spotted-lanternfly-updates-for-the-grape-and-wine-industry) and a field day on June 5th at the Lake Erie Regional Grape Research and Extension Center in North East, PA.

Introduction and Needs Assessment

I am excited and honored to join the Lake Erie Regional Grape Program this quarter and have enjoyed meeting new people and learning about the grape industry here in the region. I'd like to thank everyone for the warm welcome and look forward to continuing to meet more of you at upcoming meetings, farm visits, and in our office!

One of the first actions I took as business management educator was a quick needs assessment to help me better understand the needs and desires of the producers in regard to extension business management programing. I was thrilled with the response and want to thank everyone who took the time to fill it out.

I have had time to go over the results and will share some of the key takeaways. First in looking at some of the key demographics collected, over half producers had 30+ years of growing experience with almost all growers having some, if not all, Niagara. When it came to past programing, producers found the Economics of Production Practices, Business Analysis/Benchmarking, and Employee/Labor Management most beneficial. Going forward producers want to see priority go to Employee/Labor Management, Financial Management, Economics of Production Practices, and Record Keeping. They shared that email, farm visits, and in-person meetings are the superior way to stay in contact, and Newsletters, the Website, and Presentations at Meetings are best for relaying educational information. I also received many great suggestions for future programing and have had a few good discussions with producers on the topics listed. I will continue to keep the survey open for the next few weeks and encourage you to provide your insight!

You can still access the survey here:

https://pennstate.qualtrics.com/jfe/form/SV_1XlUAxUyzafv1si or by scanning this QR code:

Vineyard Improvement Program

Two projects have been added to the Vineyard Improvement Program. Both of these projects are in Chautauqua County and amount to another approximately 17 acres of overgrown/unwanted Concord vineyards to be removed. There are another 5 potential applicants that are in the process of completing the application. Three initial site visits were conducted, the third for one of the potential applicants.

A number of the current applicants responded to an email to update on current status of their project.

One reimbursement was requested during this quarter in the amount of $13,883.

A press release was sent to newspapers, as well as crop updates stating that this is the final year that the program will be available.

NEWA

There have been a lot of issues with batteries in the Kestrel-Met stations. All of these stations have struggled reporting during this recent cloudy season. By the end of January we seem to be getting more sunlight and the stations have been a bit more reliable. A new battery was put in both the Newfane NY and Versailles NY stations because they did not respond to the increase in sunshine. The Rainwise and Onset stations have been reliable during this time period.

The Westfield station has struggled to maintain connection during this quarter, but by the end of the quarter seems to be doing better. It also needed a new reed switch in the rain bucket.

At the end of the quarter there have been some connection issues with the Lake City PA Rainwise station and this is slated to get a new battery in the near future.

An update for the NEWA website shows that all of the NY Mesonet stations have been added to the network. These stations are available to the pest models, but the historical weather data is not accessible. The Spotted Lanternfly model is now available for all stations.

First Quarter 2023 totals:

Publications - Lake Erie Vineyard Notes Newsletters (1) and LERGP Crop Updates (6)
Podcasts(1) - weekly podcasts available on http://lergp.com/podcasts
Web resources - http://lergp.cce.cornell.edu, http://lergp.com and https://www.efficientvineyard.com
Like us on Facebook - Cornell-Lake-Erie-Research-and-Extension-Laboratory and EfficientVineyard