

# Cornell Cooperative Extension Lake Erie Regional Grape Program

Second 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



## Overview of Programming-2nd Quarter Jennifer Phillips Russo- LERGP Viticulturalist & Team Leader

The Evaluating Osmotic Protectant, Glycine Betaine, as a Multifaceted Approach to Enhance Grapevine Stress Tolerance and Productivity grant began. Grape growers face the risk each season in their vineyards withstanding injury and loss of production from biotic and abiotic stresses whose severity is dependent on the current season's weather conditions. Frost, disease, water availability, and extreme temperatures are just a few of the challenges grapevines face with climate change. Glycine Betaine, an osmotic protectant, uses methods existing in nature for the prevention of plant diseases and pests and may improve plant productivity and vitality without releasing undesirable pesticide residues into the environment. Through foliar applications, this bio-stimulation product improves plant resistance to stress, but also stimulates natural processes to improve crop yield and quality. With the threat of frost in late April, we were able to get a spray on three different cultivars on April 22, 2024.

### Frost/Freeze Event

Low temperatures in the Lake Erie Region dropped below freezing in many locations April 24-25, 2024, that affected approximately 70% of the 16,000 acres of Concord grapes in the hardest hit area of Chautauqua and Cattaraugus Counties. Lake Erie Regional Grape Program team and Dr. Terry Bates coordinated efforts between New York Ag and Markets, Farm Bureau, growers, crop insurance agencies, industry stakeholders, and government officials to begin the process of disaster declaration. We established a survey to get grower input asking how many acres they have, what varieties, and what their assessment of the levels of damage that might have occurred is.

Through our coffee pot meetings connections were made and a collaborative effort between Farm Bureau, CLEREL, and the Lake Erie Regional Grape Program to bring legislators and growers together to discuss their concerns and how they may be able to assist our industry as we navigate this damage. That



*Glycine Betaine osmotic protection grant work on Marquette as frost protection*



*Senator George Borrello talking to our growers and listening to their concerns.*



Cornell University



PennState Extension

meeting was well attended.

### **Coffee Pot Meetings**

May 1st kicked off our Coffee Pot Series with a full day symposium for growers on the Spotted Lanternfly. This meeting brought together researchers, policy makers, agricultural departments, industry stakeholders, and growers to learn about this invasive species with many informative presentations about the realities of what our industry may experience when spotted lanternfly makes its appearance in our vineyards. There were over 100 in attendance, and it was an opportunity to learn firsthand from the researchers and ask questions of the regulatory agencies about our industry concerns when this invasive species makes its way into our region.

### **Wine Sensory Evaluation Workshops**

The LERGP collaborated with the Cornell Craft Beverage Institute to bring programming to our winery stakeholders! There were two opportunities in our region to learn from presentations and a sensory workshop from our Enology Extension Specialists, Anna Katharine Mansfield and Chris Gerling, with a wine production focus. This was an interactive workshop on sensory evaluation that presented wine flaws to educate winemakers on recognizing them in their operations. Both workshops were well attended with 35 attendees in total.

### **Precision and Digital Viticulture Tools Demonstration Day**

On June 6, 2024, from 10 AM – 4 PM LERGP hosted a Precision and Digital Viticulture Demonstration Day at the Cornell Lake Erie Research and Extension Laboratory with brief updates on the research behind the tools. Artificial intelligence (AI), autonomous platforms, and novel pest management tools and strategies have the potential to dramatically alter grape production systems. This includes technology to assist with phenotyping and selection efforts, the detection and treatment of diseases, and the elimination of weeds under vine rows using fewer herbicides and less soil disturbance. Carnegie Mellon also demonstrated their robotic pruner. We hosted Haggerty Ag Robotics/Naio Technologies and demonstrated the TED robot (Ted - Naio Technologies ([naio-technologies.com](http://naio-technologies.com))). We also discussed the potential for autonomous tool carriers to assist with breeding and pest management efforts. The labs of Dr. Yu Jiang (Digital Agriculture), Dr. Katie Gold (Plant Pathology), and Dr. Lynn Sosnoskie (Weed Science) also showcased their own research with respect to crop and disease mapping and using electrical weeders and targeted, precision sprayers to suppress unwanted vegetation. Drs Jiang, Gold, and Sosnoskie, as well as representative for Haggerty Creek Ag Robotics/Naio Technologies took the opportunity to talk with stakeholders about current and future needs regarding novel technologies in perennial crops, which will help shape local, regional, and national research efforts. This event was well attended, and the attendees learned about tools and research that may be a part of our management in coming years.

### **2024 New York Soil Health Field Days**

New York Soil Health Alliance Field Day held at the Betts Farm in Westfield, NY. The LERGP partnered with NRCS soil



*Adult Spotted Lanternfly*



*Drone flight demonstration at CLEREL*



*NRCS soil scientists discussion soil profiles, compaction, and infiltration*

scientists, and the New York Soil Health Alliance for a day of learning about the benefits of soil health. The program began with presentations in the morning to explain the benefits of soil health in vineyard operations, introduce current research for best management practices in cover cropping in non-irrigated vineyards for water and nutrient conservation, and more. After lunch, NRCS soil scientists gave soil pit demonstrations and discussed how compacted soils affect grapevine root growth and water infiltration. Dr. Debbie Aller from Cornell's New York Soil Health Alliance demonstrated the rain simulation truck that allows growers to visually understand runoff, infiltration, and leachate. We ended the afternoon with a demonstration of the mow and throw technique by Bob Betts as a termination tool for cover crops using the biomass as a mulch under vine. Attendees were able to listen to an overview of the floor management research for nutrient and water conservation in non-irrigated commercial vineyards that the New York Farm Viability Institute funded and see how the treatments perform.



*Soil health rain simulation station to demonstrate runoff, infiltration, and leachate.*

### **ASEV-ES Hangtime on Nutrition**

Jennifer Phillips Russo was asked to be a panelist on the American Society of Enology and Viticulture Eastern Section's podcast series on Nutrition. She and other panelists educated on the proper way to take tissue testing, preparation, and analysis. This podcast is far reaching and the Lake Erie Regional Grape Program was honored to be included.

## **Business Management Programming**

**Andrew Holden- LERGP Penn State Extension Business Management Educator**

### **Resilient Food Systems - Equipment Grant-**

Growers in Pennsylvania were assisted in applying for a fully reimbursable equipment grants that provided up to \$100,000 for the purchase of bulk harvesting & aggregating equipment. Currently, some growers have already received news that they were awarded the grant. The New York grant will be open in early 2025 for growers in the state to apply.

### **Needs Assessment**

A needs assessment was created, compiled, delivered, then analyzed for growers to share their needs for the program. With over 35 responses, accounting for over 5000 acres, the data was insightful for what areas to focus on in the following year. The main program topics that were identified as a need were, Labor, Economics of Production, and Financial Management.

### **Grants and Tax Incentive Handouts**

Due to questions about the Resilient Food Systems grant and other available grants and programs, two handouts covering current grants and programs were created. The first is, "Grants & Programs Guide" and the second is the, "Tax Credit & Incentive Guide". Both are available on the LERGP CCE website and will be updated regularly.

### **SLF Insecticide Prices**

Along with Megan Luke and Brian Walsh, worked to present potential SLF scenarios and associated cost at the May 1st SLF Update. It was concluded that the chemicals calculated have the ability to decrease in price as research on new chemicals and lower rates are completed. In 4 scenarios, they considered early and late harvest dates, mild and heavy infestations, and different chemical formulations to avoid resistance. Overall, they found the range to be from \$16.85 per acre to

\$56.52 per acre for the material cost of additional sprays. Chemicals like Beta-cyfluthrin, Zeta-cypermethrin, and Bifenthrin, seemed to be the most cost effective, especially when generic brands were available. When it comes to other additional cost of more spraying, the 2020 Cost of Establishment and Production of Concord Grapes in the Lake Erie Region of New York publication found that it would cost \$12.58 per acre for the labor and equipment to perform a spray.

### **Artificial Intelligence**

As part of a prior obligation, a presentation to Purdue Extension on AI in Business Management & Extension was given. This covered the basics of Large Language Models and how the ever-changing AI Landscape can be used in the agricultural business field.

## **IPM Programming**

**Megan Luke- LERGP Penn State Extension Viticulturalist & Tree Fruit Educator**

### **Pesticide Sprayer Calibration**

Calibration services and coverage demonstrations to growers in both NY and PA have started for the year.

So far 5 on-site grower calibrations have taken place with 5 more scheduled. Common issues observed pre-calibration have included poor nozzle placements, poor coverage, clogged nozzles, tank debris, and overall poor spray patterns. Two visits required follow-up visits after the grower replaced nozzle orifices with recommended sizes. All visits ended with properly calibrated equipment. Certificates of participation will be sent to growers via Penn State's Pest Ed team.



*Customized equipment for pesticide sprayer calibration*



*Debris removed from a spray tank during calibration*

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 at the end of last year, membership remains steady. Members were supplied with their pre-ordered copies of the 2024 NY and PA Pest Management Guidelines for Grapes this month.

Crop Updates were released weekly to growers via email. I have continued to update my articles regarding new Environmental Protection Agency guidelines and label changes, as well as pesticide best practices and scouting techniques for common pests.

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. In this quarter, 5 meetings were eligible for

PDA and DEC credits.

To augment our usual Coffee Pot Meeting series, we offered a field day on June 5th at the Lake Erie Regional Grape Research and Extension Center in North East, PA. This meeting hosted 87 attendees and provided information of Worker Protection Standards as well as industry updates and a presentation on IPM and scouting (Megan Luke and Kim Knappenberger). This was an “unplugged” meeting with no slide decks or electronic augmentation.

We received considerable feedback from those growers who attended both the field day and the precision ag/robotics demonstration at CLEREL the following day regarding the versatility of our team to adapt to the needs of a diverse demographic and perform professionally and informatively under all circumstances.

## Other Extension Programming

**Kim Knappenberger, Extension Support Specialist**

### Vineyard Improvement Program

Two applications have been submitted this past quarter for the Vineyard Improvement Program. One of the applicants is in Erie County and is actually rehabilitating his vineyards and will most likely not be part of this program. The other applicant is a great candidate with just over 7 acres of neglected Concord vineyards in Niagara County. Site visits were completed for both. Three final site visits were conducted, but two of those projects are ongoing because of replants. The third applicant from Niagara County had his project completed with the acreage replanted with pumpkins. Two more site visits were completed in Chautauqua County to potential applicants.

Contact with current applicants has increased due to the impending deadline for getting the work done. Mailings were done for those that have not responded to any emails.

One reimbursement was submitted this quarter in the amount of \$11,192.76.

Two applicants have withdrawn their applications due to either selling the land or just not being able to complete the removal.

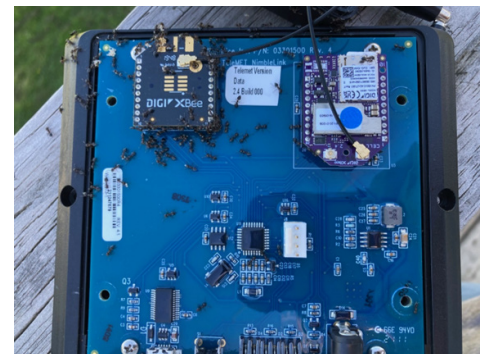
### NEWA

The quarter began with a lot of repairs on the stations. One station needed a new solar charge controller, one a modem, and two needed mini aerovanes. Once those were completed there was another issue with ants invading the TeleMet box at East Westfield again. Thankfully it was caught before shorting it out again. As usual there have been some precipitation recording issues due to wasp nests or debris in the rain collection bucket. Those were cleared out but are something that needs to be watched throughout the summer.

A new station has been ordered for the Finger Lakes region so their network can be strengthened, and a search for another location in the Lake Erie region has begun.



*overgrown vineyard*



*NEWA station with ants in module*



*checking CAPS traps*

## CAPS

We kicked off the Grape Commodity Survey in the Lake Erie Region by setting up the traps on June 4th. There are 120 traps set up in 10 vineyards and 2 nurseries. This year the target moths include *Cryptoblabes gnideiella* (Christmas Berry Webworm), *Lobesia botrana* (European Grapevine Moth), and *Eupoecilia ambiguella* (European Grape Berry Moth).

These traps are intended to remain in the vineyards and nurseries for 14 weeks and will be serviced (surveyed for the presence of moths) every two weeks for a total of 7 times.

The first service was performed on June 18th to reveal no target moths. A record of negative samples was recorded.

In addition we are scouting for Spotted Lanternfly at the traps sites and monitoring 10 traps across the region from Ripley to Silver Creek. These traps are checked weekly for the presence of what the current life cycle stage would be for spotted lanternfly in this area (at the end of the quarter it is second and third instar). None have been observed in the traps.

## Meet the Team



Jennifer Phillips Russo-  
LERGP Viticulture Specialist,  
Team Lead



Andrew Holden-  
LERGP Penn State Extension Business  
Management Educator



Megan Luke-  
LERGP Penn State Extension  
Viticulture & Tree Fruit Educator



Kim Knappenberger-  
Extension Support Specialist

### Second Quarter 2024 totals:

Publications - Lake Erie Vineyard Notes Newsletters (2) and LERGP Crop Updates (9)

Podcasts(3) - weekly podcasts available on <http://lergp.com/podcasts>

Web resources - <http://lergp.cce.cornell.edu>, <http://lergp.com> and  
<https://www.efficientvineyard.com>

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