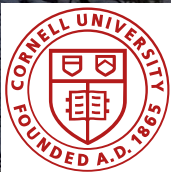


Cornell Cooperative Extension Lake Erie Regional Grape Program

Annual Report 2021

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

Vineyard Sunrise- Jennifer Phillips Russo



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Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

Seasonal Bud Low Temperature Exotherms

Winter low temperatures that fall below a critical value can damage grapevine buds. The critical temperature for bud injury varies over the dormant season and responds to daily changes in temperature. Digital Thermal Analysis (DTA), which involves collecting and subjecting buds to controlled freezing runs, is a proven method for documenting bud freezing temperatures. Used in conjunction with min/max temperature records, it has been proven to correlate well with observed bud injury in vineyards (determined by direct examination of buds, i.e. 'bud cutting'). This is a valuable tool for our growers to use along with daily weather information to compare the daily low temperatures and the bud hardiness data from our region so they can make risk management decisions in regards to pruning levels, delay pruning (pruning timing), and shoot thinning.

The Lake Erie Regional Grape Program has acquired equipment (freezers and data acquisition units) to use Digital Thermal Analysis (DTA) at the CLEREL laboratory. The DTA unit at CLEREL allows the research and extension team to process extension samples at the CLEREL laboratory, and do more frequent and detailed evaluations. LERGP received funding from the New York Wine and Grape Foundation to study how crop adjustment and crop load impacts bud hardiness and potential crop of Concord, Vignoles, and Riesling grapes – and thereby evaluate the economic risks of over cropping and potential freeze damage based on production practices. This information allows grape growers to adjust practices and respond to climatic events. We are posting bud cold-hardiness and seasonal bud mortality information for four representative varieties on both websites: <https://grapesandwine.cals.cornell.edu/extension/bud-hardiness-data/> and <https://lergp.com/>.

The LT50 (Median Bud Freezing Temperature) values for each variety are listed in tables on each website listed above.

Virtual Coffee Pot Meetings

Coffee Pot meetings were started years ago to connect with local growers to address their needs during the growing season. These meetings are typically hosted by grape growers in the region that are willing to invite the group into their barn/ garage. LERGP brings coffee, doughnuts, the latest research information, and pesticide applicator recertification credits. This year, due to the continued restrictions in place from the COVID-19 pandemic, the group was unable to conduct business as usual.

To continue the sharing of important research, as well as maintaining the collaboration of ideas from the growers, the LERGP team was successful in continuing Virtual Coffee Pot meetings. Each meeting featured a management topic with faculty and extension panelists. In addition, the New York State Department of Environmental Conservation (DEC) and the Pennsylvania Department of Agriculture (PDA) have both approved offering pesticide recertification credits at these meetings to aid our growers. For each meeting one credit was available to both New York and Pennsylvania licensed pesticide applicators.

LERGP offered 13 opportunities to receive pesticide recertification credits in 2021. There were 13 Virtual Coffee Pot Meetings total with 13 Guest Speakers and 420 total participants in the meetings. This virtual platform was well received by our stakeholders and requested we continue to offer some Virtual Coffee Pot Meetings in the future. Although not the ideal avenue for grower interactions, I commend all of the attendees' willingness to embrace technology and I am proud of

the work that we all accomplished together. The Coffee Pot Meetings are discussions on timely viticulture, business management, and integrated pest management. In addition, special guest speakers with expertise in viticulture and enology from all over the country have been invited to present their research in this informal setting and answer grower questions face-to-face since traveling isn't an issue with the virtual platforms. The LERGP is excited to be able to continue to offer educational outreach and pesticide recertification credits to our industry stakeholders during this pandemic time.

Crop Estimation with the Cornell Grape Counter

The Cornell Grape Counter (CGC) Machine 2.0, with the incorporation of digital scale for instant sample weights and accurate berry count, aided with industry stakeholder crop estimation and generated funds for our program. The principal outcome of improved crop estimation is savings to stakeholders including optimized scheduling of labor, efficient coordination of space for fruit and juice, improved delivery scheduling, reliable reporting to government agencies and distributors, early projection of revenues, proactive filing of crop insurance claims if the estimate is critically low and a reliable basis to make crop reduction decisions if the estimate is critically high. National Grower's Coop (Welchs), contracted our services to aid in their Lake Erie and Finger Lakes regional crop estimation in 2021.

Often, the most practical way to decrease the margin of error is to increase the sample size. The time savings that the CGC allows could be allocated to the collection of more samples to obtain a more precise crop estimation. Though this work is tailored to Concord growers, it would be easily applicable to other juice, wine, or table grape production systems. The development of an accurate automated berry counting machine with accurate sample weights would streamline the estimation process improving efficiency with savings in labor improving profits.

MyEV Grower Training Session

The Lake Erie Regional Grape Program, along with Dr. Terry Bates, Director of The Cornell Lake Erie Research and Extension Laboratory, and Nick Gunner, from Orbitist help a grower training session to Take Your Vineyard Management to the Next Level with Precision Viticulture.

Lake Erie vineyards have a lot of natural variation in soil type, vine growth, and crop yield, which impacts overall productivity and farm profitability. Precision Viticulture is the process of measuring, modeling, and managing vineyard variation on a sub-block level to improve production efficiency.

Getting started with precision viticulture can seem overwhelming with the need to purchase and learn new technology, such as vineyard sensors, GIS software, and variable-rate controllers. To address this challenge, the team developed an easy-to-use and web-based software platform for growers to benefit from spatial information on their own farms. The MyEfficientVineyard (MyEV) tool allows growers to collect, process, and map spatial observations in any of their vineyard blocks. There is an old saying that "the best fertilizer is the grower's footprints in the vineyard." MyEV now allows you to trace those footprints and spatially map what you observed so you can make the best management decisions for your vineyard blocks. This informational meeting was a two-part session. It was well attended, and the growers returned with questions from using the tool in their vineyards.

B.E.V. and LERGP Joint Conference

Due to continued COVID pandemic restrictions and Zoom meeting fatigue, the Finger Lakes Grape Region and LERGP combined efforts to host a joint winter conference. This conference was for the grape and wine industry, combining the resources of Cornell's Extension Enology Lab, the Finger Lakes Grape Program, The Lake Erie Regional Grape Program, the Charles H. Dyson

School of Applied Economics and Management, and the New York Wine & Grape Foundation. The conference invited academic and industry experts to present information that addresses important issues for the industry, and to do so in a way that provides practical information to those who attend.

This was a great opportunity for wineries and growers from across the state, and beyond, to take advantage of the great material presented. Seminars took place over the course of the 3-day conference, with time each day dedicated to Business, Enology, and Viticulture topics.

Advisory Committee

The LERGP met with its Advisory Committee in August to discuss the future of our Outreach and Extension efforts to support our grower stakeholders. It was discussed to continue our Crop Update, Newsletters, Text-blasts, and Podcasts. The Viticulture Planning Calendar was also considered a valuable tool. During this committee meeting it was decided that our Winter Grower Conference would be hybrid this year and we developed a Winter Conference Series for 2022 with two virtual days and one in-person day to try and reach all types of growers.

Business Management

Kevin Martin, Penn State University, LERGP, Business Management Educator

Podcasts

2021 was the year of Covid fatigue. Growers and individuals in general were almost universally understanding of the difficulties that COVID presented in 2020. By 2021 growers had needs and less flexibility. While we couldn't return to the status quo of 2019, we could find other ways to engage. By expanding our occasional video blog to a podcast in the fall of 2020 we added a virtual tool that has become appreciated by growers as an effective delivery method for education. When visual aids become essential the Youtube video is always available for supplemental information. 2021 was our first full year and we published 47 episodes. Downloads and views totaled 2,886. Around 50% of growers still watch videos, while others prefer the audio version. Average engagements per episode have nearly doubled since offering the audio version so it has enabled us to expand our reach. Around 75% of the viewers are regional and have regional ties. I presume most have a direct connection with LERGP. The remaining 25% appear to be international, focused on wine regions in New Zealand, France, and Italy. We will continue to try to focus locally while providing information/entertainment to the larger viticulture world. Our primary goal is to provide timely information to our members, so this is the kind of breakdown in audience we view as a success. It's just enough to enhance the image and reach of our region and program, while continuing to serve our core audiences.

Business Education

Topically, 2021 was an important year to cover business costs. Price evolution has hit both sides of the grape market. Growers are receiving higher prices and having the same struggles with labor and supply chain as everyone else. Their input costs are rising in sharp and unpredictable ways and growers are looking for strategies to cope. At least 30 direct contacts were made on these topics alone. Wider educational information was distributed via virtual coffee pots, newsletters, crop updates and podcasts. Rising grape prices preceded most input cost increases, and many growers also sought out business plans, valuation considerations and cash flow advice regarding business expansion or diversification.

Text Messaging

Text messaging communication was also rolled out in 2021. LERGP received positive feedback from growers using the tool as a reminder to attend and register for events. Many growers reported it was the primary way they heard about a meeting or used the information to get to a meeting. It was also occasionally used for crop update reminders and promotions. It has not directly been used for educational outreach yet. We use text messaging to regularly reach nearly 200 individuals. Total indirect contacts exceeded 2500. Growers also used the service to make direct contact with extension agents, starting over 30 conversations that helped growers attend meetings or provided clarification on a registration process.

NEWA/VIP

Kim Knappenberger, Program Aid, LERGP

Vineyard Improvement Program

2021 added 5 new applicants to the Vineyard Improvement Program bringing the acreage of Concord vineyards to be removed up to 383.5 by 30 applicants. Three of the new applicants are from Chautauqua county and represent just over 13 acres, one applicant is from Cattaraugus county and represents 1.3 acres, and the fifth applicant is from Schuyler county and represents 4.36 acres. Initial site visits were performed for each site to confirm the presence of the vineyard, and in the case of three of the applicants, to determine that they are Concord vineyards. This works especially well in late veraison/harvest time and has been necessary due to the age of some of the abandoned vineyards. Records either no longer exist to prove that they are Concord, or the vineyard has changed hands and those documents are not accessible to the new owners.

Six projects were finalized during 2021. Final site visits were conducted prior to finalizing the reimbursement – three of the sites required 2 or three visits to ensure complete removal of grapevines prior to signing off. A final site visit was also conducted for one more project that is still waiting for submission of expenses. Reimbursed applicants submitted invoices, proof of the work done and equipment used and these were used to complete the final expense sheets for each project. Six reimbursements were completed which totaled \$105,907.70 and accounted for 66.41 acres of Concord vineyard removed. 57.51 acres were located in Chautauqua County and 8.9 acres in Niagara County. The crops replanted into those locations are Concord grapes (11.3 acres), corn (40.56 acres), cover crop (11.91 acres), and pasture (2.64 acres).

The program was presented in multiple Crop Updates, Newsletters and press releases throughout the year. It was also presented at the coffee pot meetings and information was made available to those who expressed interest.

NEWA

There were a number of changes to the stations in the Lake Erie Region this year. The year started with the restart of the East Westfield station. The cellular connection needed an upgrade in order to connect. It had been out for upgrade since June of 2020. Then in June of 2021 the box with the TeleMet became infested with ants that caused short circuits and blew some components. A new TeleMet was installed near the end of September and is currently working well. The Westfield station lost internet availability at the beginning of the year and the IP-100 was replaced with a cellular TeleMet unit. There were a number of issues with the data being reported including: delayed reporting of data – 3-5 hours behind, and false precipitation. After trying to make it work, it was decided that the original IP-100 could be put back in with the renewed availability of internet.

Once the channels were changed on the station and IP-100 the false data peaks were gone and it now operates properly.

The Sheridan station miniaerovane was no longer reporting accurate wind data. Trying a new sensor did not help and the other sensors were beginning to fail, so in early May a new Onset HOBO station was installed at that site. This uses the homeowners ethernet connection and remote sensors.

The Portland Escarpment station was removed from service in October of this year after the growing season. The station was one of our older ones and was experiencing multiple sensor failures. The owners of that property moved so the station was removed. There are currently no plans to place another station in that location.

The high gain antenna that had been on the Sheridan station at the beginning of the year was moved to the Portland Escarpment station to help with connectivity until that station was removed, and it is currently on the North East Side Hill station that had been experiencing connection problems. It seems to have helped.

Our network was able to be expanded thanks to the matching donation by NYS IPM of an Onset HOBO station and that was placed in Brant NY. This is a cellular unit that is now placed in a previously unrepresented part of the region.

Throughout the year there were numerous site visits to clean rain buckets, replace reed switches and batteries, and troubleshoot outages.

There was sitewide Rainwise server outage in September followed by an internet service provider issue that caused interruption of data for some of our stations for days. The NEWA website provides estimated data in those instances where the data is interrupted or if it is found to be unreliable.

NEWA 3.0 was launched and information was made available to help users transition to the new site.

Kim has continued to assist Dan Olmstead with the NEWA help desk for 5 hours each week.

Grape Commodity Survey (CAPS)

108 traps were set up in 8 vineyards and 2 nurseries in the Lake Erie Region. This year the target moths include *Cryptoblabes gnideiella* (Christmas Berry Webworm), *Lobesia botrana* (European Grapevine Moth), and *Eupoecilia ambiguella* (European Grape Berry Moth). The traps were set on June 8th and 9th. These traps remained in the vineyards and nurseries for 14 weeks and were serviced (surveyed for the presence of moths) every two weeks for a total of 7 times. These traps that are loaded with pheromone lures are initially screened in the field. Traps that contained moths of any kind were collected and further screened at the lab. No target moths were collected during the entirety of this survey. A record of negative samples was recorded and these results were shared with the project coordinator, Juliet Carroll, via google sheets. Coordinated efforts were made to ensure that traps were not in the vineyards during harvest.

In addition no Spotted Lanternfly were found in the region after ongoing scouting efforts throughout the season. Scouting continued through the fall in hopes that early detection impede infestation.

COVID-19 PPE

CLEREL has been one of two pick-up locations in Chautauqua County for the free PPE supplied by New York State Department of Agriculture for producers in the county. The demand was definitely

much greater in the early months of the quarantine, but we have been pleased to be a part of getting this valuable commodity out to local growers, farmers and processors. 104 gallons of the NYS Clean hand sanitizer were distributed during 2021. Also distributed were 262 2-ounce spray bottles and 165 face masks.

PA Update

Andy Muza, LERGP Extension Educator, Penn State University

2021 New York and Pennsylvania Pest Management Guidelines for Grapes

Editor of the “2021 New York and Pennsylvania Pest Management Guidelines for Grapes”. Each year the Guidelines are updated to provide commercial grape growers in both states the most relevant information concerning vineyard pests and pest management schedules. Annual revisions concerning herbicides, insecticides and fungicides are included along with pertinent research-based information. The “New York and Pennsylvania Pest Management Guidelines for Grapes” is a cooperative effort involving both faculty and staff from Cornell and Penn State Universities.

Vineyard Scouting for Crop Updates

Vineyard scouting was conducted weekly at various sites extending from Girard/Lake City area to North East, Pennsylvania. The objective was to provide timely information, throughout the season, on potential/developing pest problems in vineyards. Monitoring of vineyard blocks began in May and continued until mid-September. Scouting information along with accompanying photos of pest problems, obtained during the weekly monitoring, were reported in the Crop Updates.

2021 Pest Management Spray Schedule – What’s Your Plan?

In preparation for the 2021 season, a virtual (online) meeting was conducted via Zoom to assist growers in developing a pest management plan for the 2021 growing season. This meeting was interactive so that growers had the ability to ask questions concerning specific pest problems or potential problems in the 2021 season. Topics that were addressed include: timing of spray applications at critical growth stages; pesticide options, efficacy and cost; and resistance management.

2021 Vineyard Planning Calendar; Grape Grower Conference; Coffee Pot meetings; Twilight meeting; Crop Updates; Newsletters; Podcasts; LERGP Advisory Committee, Field Processor Representative and Team meetings; and grower visits – I participated, along with other members of the LERGP Extension Team, in disseminating research-based information to clientele via a variety of educational formats throughout the year.

Fourth Quarter 2021 totals:

Publications - Lake Erie Vineyard Notes Newsletters (6) and LERGP Crop Updates (32)

Podcasts(50) - 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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