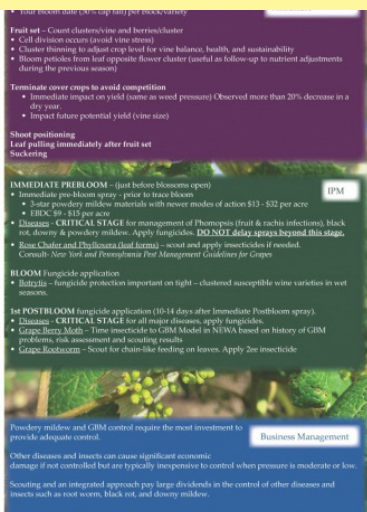


Cornell Cooperative Extension Lake Erie Regional Grape Program

First Quarter 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



The LERGP Extension Team spent the final months of 2020 developing a viticulture planning calendar for grower members. The printed calendar is a portable data management tool, providing useful resources including contact information, a history of the Lake Erie Grape Industry and the Lake Erie Regional Grape Program, and research-based tips for vineyard management. Each month features a beautiful vineyard photo, calendar reminders, an area for notes and interesting historical data. Calendars include additional information each month on the activities and information most critical to success.

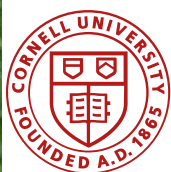
Our advisory committee met to discuss the research and educational efforts for the team and this planning calendar was a direct result of the committee's efforts. LERGP team members stress the need for growers to record timely vineyard data for their vineyard blocks. The viticulture planning calendar provides an additional tool that allows growers to easily record their own observations. Tracking data is important to understanding seasonal patterns. Each calendar month provides room for individuals to add their own activities and notes. Images provide important information for IPM and disease identification.

Every member of the Lake Erie Regional Grape Program received a copy for the 2021 calendar year.

The calendar includes a QR code that will direct individuals to a webpage on the LERGP site to access more in-depth reference materials. The additional information will help growers make connections between monthly topics featured in the calendar and timely webinars and discussions hosted by LERGP.

The calendar also provides information from the Lake Erie Regional Grape Program *Electronic Crop Update*, and monthly newsletter *Vineyard Notes*. The team is already looking for ways to improve the calendar and will be collecting feedback throughout this year.

This calendar was a LERGP Extension Team effort and also includes contributions and support from: Dr. Terry Bates, director of the Cornell Lake Erie Research and Extension Lab; Dr. Justine Vanden Heuvel from Cornell University; Bryan Hed from Penn State's Lake Erie Regional Grape Research and Extension Center; the CCE of Cattaraugus, Chautauqua, Erie, Niagara Counties, and Penn State Extension – Erie County; the Network for Environment and Weather Applications (NEWA); and Cornell University and Penn State University. The project was funded using monies that would have normally been used for the annual winter grower's conference, which did not take place this year due to the COVID-19 pandemic.



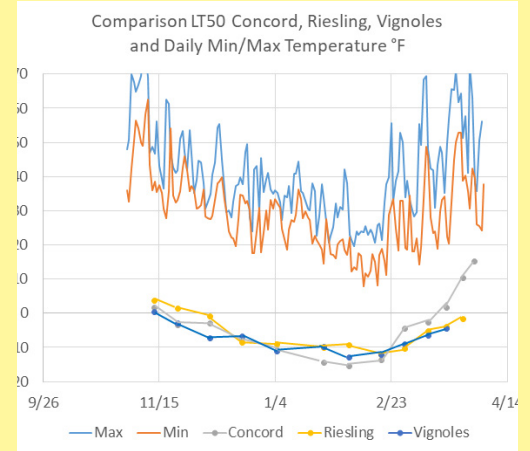
Cornell University



PennState Extension

BUD HARDINESS- Jennifer Phillips Russo

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. We can measure this critical temperature through a procedure called differential thermal analysis, which involves controlled freezing of a sample of buds collected from vineyards. With funding from the New York Wine and Grape Foundation, we are monitoring bud hardiness in Concord (native), Vignoles (hybrid), and Riesling (vinifera) at different cropping levels to see if there is an effect on cold hardiness. We monitor samples every two weeks from November through February and weekly in March in the research vineyards at the Cornell Lake Erie Research and Extension Laboratory in Portland, NY.



Bud hardiness is a process that changes throughout dormancy and is determined by genetics and the environment. Seasonal differences, high cropping levels and late harvest can affect bud hardiness and vine health. These factors contribute to the risks of growing grapes in cool climates. To be sustainable in the sense that producing an annual crop at economically viable levels each year, the bulk juice grape growers must produce high yields and quality while reacting to climate related obstacles and wine grape growers' sustainability looking for ways of implementing mechanization to accommodate recent labor issues. We were funded to test and compare different crop load management effects on bud hardiness in three different grapevine species, American native *vitis labrusca* Concord, French native *vitis vinifera* Riesling, and French-American hybrid Vignoles.

Crop load can impact vine health and bud hardiness. Overcropping a vine will decrease vine size over time. Does overcropping really decrease bud cold hardiness of the buds you retain after pruning? Does the timing of crop adjustment decrease bud cold hardiness? Current practices and technologies have focused on crop adjustment to maximize yields and increase quality. These advancements have added to the reliability of return crop and contributed to an increase in vine size. This project hopes to provide insight on the risks and benefits of cropping levels, crop adjustment, and crop adjustment timing as well as identifying the relationship between cropping level and bud hardiness among native Concord, hybrid Vignoles, and vinifera Riesling varieties.

Bud hardiness data was collected from four grape cultivars in the Lake Erie Grape Region to develop dormant season bud hardiness profiles in collaboration with Tim Martinson in past years. Adding the level of differential crop load management effects on bud hardiness for *V. labrusca*, *V. vinifera*, and Inter-specific hybrid cultivars in the Lake Erie Grape Region from November – April would give growers the information needed to maximize yields and respond to climatic events. Armed with this information, growers could accurately identify when vines begin the deacclimation process allowing them to know when they should address risk management strategies such as delayed pruning.

There is constant potential of bud and vine injury as a result of sudden low temperatures. Bud hardiness profiles from ongoing research is used to educate area grape growers and adjust their pruning levels. Adding a data layer of potential detrimental effects on bud hardiness due to crop load management decisions for American, French, and French-American hybrid cultivars would widen the scope of information and potential impact on sustainability.

The treatments for the native portion of this research are Concord High Crop and Concord Low Crop. This data was gathered using Dr. Terry Bates's Big C research on our farm that is a variable rate within a variable rate trial. The Vignole and Riesling crop load trial with differential cluster drop timing treatments are three cropping levels or High leave all fruit, Medium leave five shoots per foot/one cluster per shoot, and Low leave four shoots per foot/one cluster per shoot in Riesling. In Vignoles, we left all fruit for the High crop level, removed half of the fruit for Medium, and left one quarter of the fruit in the Low cropping level. The crop was adjusted by dropping clusters at three different times within those treatments: Early at fruit set, Mid-season around 30 days post bloom, and Late at veraison. There is also a spur pruned vs. cane pruned trial in Riesling, where a total of 30 buds remained on each vine in three different management strategies: two 15

bud canes, six 5 bud spurs and 15 two bud spurs.

The native variety, Concord, was the cold hardiest followed by the hybrid, Vignoles, and then *vitis vinifera*, Riesling. The Lethal Temperature Exotherm 50 (LTE 50), where 50% of each variety experienced bud death, was posted on the LERGP website, shared with the Cornell State Viticulture's, Tim Martinson, and discussed in Crop Updates and Podcasts. Due to a number of factors caused by the COVID pandemic, research this past growing season was difficult at best. We were able to collect data all season but look forward to repeating the trials should funding become available for another year.

COMMODITY AND LABOR PRICE FOCUS- Kevin Martin

Commodity prices and the demand for labor have upset the smooth sailing high Concord prices. Education this quarter has focused on monitoring those prices and recommending strategies to help compensate. Work to provide perspective and calm has been the focus in the short-term. CFAP 2.0 and higher grape prices has put growers in a position to continue buying inputs at a higher cost. Long term efforts have focused on reducing exposure to these prices. Inputs related to labor and field crop prices can be reduced. Input costs related to specialty crops remain less volatile. Mechanization, cover crops, and bulk harvesting are key long-term strategies to mitigate risk of high field crop prices and low labor supply. This is likely to be our focus throughout the growing season, barring a spring frost event.

Delivery of information followed traditional methods of podcasts, newsletters and crop updates. Additional e-mail contact was occasionally utilized as much of the information has been time sensitive. With limitations on our ability to deliver information to large groups in person, podcasting and e-mail has been essential to notify growers of timely information.

As for delivery, podcasting has been upgraded to a more traditional version of the delivery method. RSS feeds hosted on Apple, Podcast Addict, Stitcher or wherever podcasts are available.

Vineyard Improvement Program- Kim Knappenberger

One new application from Chautauqua County has been added this quarter for 3.50 acres. An existing applicant added an additional 4 acre vineyard to be removed bringing the total acreage to 364 acres and 27 applicants.

Two initial site visits were performed in strict compliance with the COVID-19 regulations of masking and social distancing. The new applicant is still in the process of proving that it is a Concord vineyard. This vineyard had previously been contracted with Cott. Due to the fire in the Cott/Refresco facility this past summer the applicants are unable to access those records and are looking through personal records to confirm Concord. One final site visit was attempted. This applicant has multiple sites, all of which showed evidence of Concord vines growing in the planted field crops. We plan to try again this spring. No reimbursements were completed this quarter.

Invoices and receipts for projects have been submitted and added to the applicants' files.

Phone and email consultations continued through the quarter for 8 perspective applicants.

Supporting documentation for completed projects were requested by Ag and Markets for six of the completed projects to complete an audit of the Vineyard Improvement Program account.

Ongoing efforts to expand the scope of this project to benefit the Concord industry.

Information regarding the program was presented in a press release in March and in multiple crop update articles.



NEWA

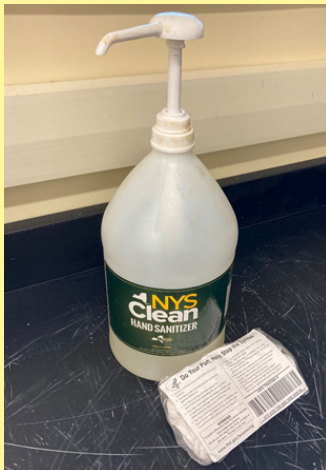
The East Westfield station TeleMET was reinstalled in January. The Westfield station was also upgraded to a cellular TeleMET unit at the end of March. By getting these two stations back online the region is back up to its full set of stations.

The miniaervane (collects data about wind speed and direction) on the Sheridan station has not been reporting accurately since August 2020. Replacing the old one with a new one did not make any difference suggesting a problem with the motherboard, so it is currently slated for replacement. This station was set up in 2011 and appears to be experiencing multiple failures.

The Silver Creek station was out after the storm went through on March 11th, but did not have evidence of a lightning strike and was able to be reinitialized and brought back online.

The Versailles and Hanover stations both have experienced unusual data and are being monitored.

Multiple emails and calls were made to Lake Erie and Finger Lakes station owners to troubleshoot issues affecting the stations.



PPE

Since May of 2020 CLEREL has been a distribution site for the NYS Clean hand sanitizer and Hanes masks provided by the NY State Department of Agriculture through the Cornell Cooperative Extension of Chautauqua County to help fight COVID-19. 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. During this past quarter we distributed 36 gallons of hand sanitizer and 70 masks.



1st Quarter 2021 totals:

Publications - Lake Erie Vineyard Notes Newsletter (1) and LERGP Crop Update (6)

Podcasts - 10 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

LERGP Home Pages: <http://lergp.cce.cornell.edu>; <http://lergp.com> Phone: 716.792.2800