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Price increase after March 10!

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How to reach us:

Jennifer Phillips Russo - LERGP Viticulture Specialist: jjr268@cornell.edu (716) 640-5350



Kevin Martin – LERGP Business Management Specialist: kmm52@psu.edu
(716) 397-9674

Kim Knappenberger – LERGP NEWA and Vineyard Improvement Program Contact ksk76@cornell.edu
716-792-2800 ext 209

Kate Robinson – Administrative Assistant kjr45@cornell.edu 716-792-2800 ext 201

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.



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2023 LERGP Winter Grape Grower Conference Series



LAKE ERIE REGIONAL GRAPE PROGRAM 2023 GRAPE GROWERS' Winter Series CONFERENCE REGISTRATION FORM

SUNY Fredonia Williams Center Thursday, March 16, 2023 Deadline for registration is Friday, March 10, 2023.

| Name (1 st attendee) | | \$_ | | | |
|--|--|----------------------|-------------|------------------------|----|
| Farm Name | | | | | |
| Address, City, State, Zip Code | | | | | |
| Phone | E-mail | | | | |
| Are you enrolled in Lake Erie Re | gional Grape Program (LERGP)? | Yes | No | | |
| MEMBER | REGISTRATION FEI | ES . | NON M | EMBER | |
| In Person Conf. Only \$90 | .00 (\$60.00 addl attendee) | In Person Conf. Only | | \$125.00 | |
| Additional Attendees: *Please add a \$25.00 late fee for each r | reservation made after March 10, 2023 | | | | |
| | | | | TOTAL \$ | |
| Please make check payable (<i>L</i> Kate Robinson LERGP 6592 W Main Rd Portland NY 14769 | IS funds only) to LERGP (Lake E | rie Regional G | irape Progr | am) and mail to | o: |
| | | Date | e Ck. Rec'd | Amount | |







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Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

In the Vineyard

The Lake Erie Regional Grape Program monitors cold hardiness in our region. We collect samples of grape buds to test their ability to withstand cold temperatures. Grape growers use this information to make decisions about their pruning strategy during the dormant season in order to retain enough fruitful buds to ensure an adequate crop the following growing season. The last three collections LT50s are presented in Table 1 below and the seasonal high and low temperatures graphed with the Concord LTE that track the acclimation, dormant, and deacclimation of the buds (Figure 1).

Table 1. Lake Erie Grape Region Lethal Temperature 50 results for all cultivars sampled the last three weeks in Fahrenheit

| | LTE 50 (F) | LTE 50 (F) | LTE 50 (F) |
|-----------------------------------|---------------|------------|--------------|
| | Feb 8th | Feb 16th | Feb 28th |
| Vincent | -9.8 | -5.5 | -4.4 |
| Ives | -9.6 | -5.4 | -5.4 |
| Aurore | -12.7 | -12.0 | -7.2 |
| Riesling | -10.1 | -10.4 | -9.6 |
| Seyval | -1.8 | -9.2 | -8.7 |
| Niagara | -14.7 | -8.8 | -6.9 |
| Elvira | -13.7 | -13.2 | -11.0 |
| Delaware | -12.5 | -7.3 | -6.3 |
| Traminette | -14.3 | -13.2 | -12.0 |
| Vignole | -12.0 | -9.7 | -9.7 |
| Cabernet Franc | -3.1 | -8.4 | -2.3 |
| Pinot Gris | -8.8 | -8.8 | -9.0 |
| Gewurztraminer | -7.3 | -6.5 | -6.0 |
| Concord | -16.1 | -11.0 | - 7.8 |
| Cabernet Sauv* | -7.6 | -6.9 | -6.4 |
| Chardonnay* | -11.4 | -10.2 | -8.8 |
| * Buds collected every other week | | | |

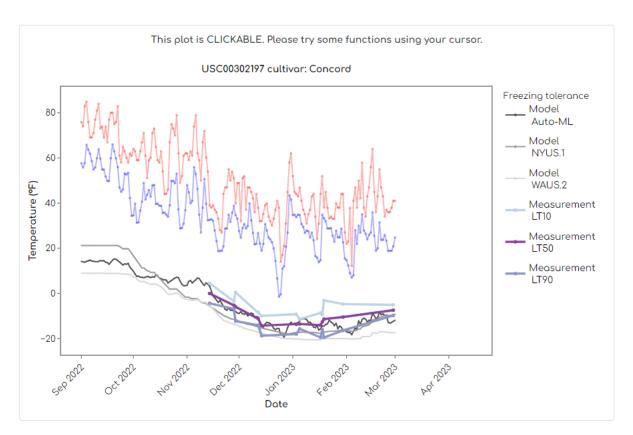
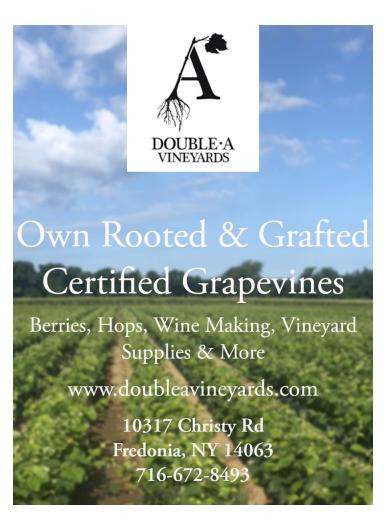


Figure 1. High and Low Temperatures for Portland, NY plotted with the Concord Lethal Temperature Exotherms for the season

We measure bud freezing temperatures by collecting canes from vineyards, cutting off buds, and placing them on thermocouples in a controlled temperature freezer. The freezer is programed to gradually step down the temperature over time. When the living tissue dies, it releases a spike of heat (exotherm) that is monitored by the thermocouple and recorded. This allows for a precise estimate of the lethal temperature exotherm (LTE) for that bud. Not every bud on the canes dies at the same temperature due to the difference in water or amount of green tissue and can have a range of bud freezing temperatures that varies over two to six degrees. We collect a minimum of 10 buds per cultivar sampled each week and we report on the LT50, the temperature at which 50% of the buds collected died. Measurements of LT50 bud freezing temperatures from leaf fall to bud burst reveal that bud hardiness undergoes constant change in response to weather conditions.

Questions have been asked regarding how



the milder winter may have affected grape crops. This presented a great opportunity to describe the vines journey to dormancy, but before we do that it is important to stress that this year's crop potential has already been determined in the vine's compound buds set last growing season. Each fall, the green tissue that produced the grape clusters begins to harden off and get the woody appearance, or periderm formation. The vine slowly dehydrates to prepare for dormancy. This is when the grapevine transitions to a cold-hardy state to survive the winter temperatures, and it is called cold acclimation. The grapevine responds to low temperatures and decreasing day length. It is a gradual process. As the temperatures decrease through the fall and winter, the grapevine slowly acclimates to those seasonal temperatures and gains cold hardiness. How fast this process happens, and to what extent vine tissues survive extreme winter low temperatures, depends upon the type of grape, or cultivar (its genetic makeup), seasonal temperatures and how they vary, and the vine's condition as it enters the dormant season. If a grapevine enters the winter stressed from disease and/or too much crop, then it may not be as hardy as a healthy, balanced vine. See Figure 1 above, the purple line indicates the Concord LT50 and you can note the acclimation to the cold temperatures as the line dips November into January.

The fact that we have had milder winter temperatures connects to the grapevine's maximum cold hardiness. For example, if our winter temperatures were gradually decreasing to below zero, the grapevine cold hardiness would be acclimated to those temperatures and able to withstand colder temps, conversely, if the winter lows never dropped below 25 degrees Fahrenheit, then they would experience damage if all of a sudden a subzero front hit because they would not be acclimated to those subzero temperatures.

Around mid-January through mid-February the grapevines reach their maximum cold hardiness, and this can be noted on Figure 1 above where the purple line levels off during this time. As the temperatures become milder, then grapevine buds begin to wake up or deacclimate. It is the reverse of the acclimation process. Warmer temperatures gradually wake up the dormant vine and the tissue gain water or rehydrates. As soils warm up, capillary action draws water up the trunk, and "sap flow" occurs.

Thus far, our cold hardiness research this year has not led for cause to be concerned with the bud cold hardiness as evident in Table 1. Most of our vines acclimated well and are in the deacclimation phase now. That is not to say that some of our more sensitive varieties did not experience cold damage. If you have less cold hardy cultivars, you should use the cold hardiness monitoring website to determine if you should cut buds to assess damage. Click Here for Cold Hardiness Monitoring Website. Figure 1 above was taken from the website and you can see that the purple line indicating the LT50 is on an upward trend as the buds deacclimate.

When the risk of winter bud injury has passed, it may be necessary to adjust the number of buds retained after pruning to compensate for buds lost to winter injury. Zabadal et al (2007) recommends the following:

- < 15% injury, no adjustment
- 15-35% bud mortality, retain 35% more buds
- 35-50% mortality, retain 100% more buds
- > 50% mortality, minimal or no pruning

Due to our milder temperatures and some unseasonably warmer days, this may lead to different causes for concern. There is potential of trunk splitting should we experience an extreme drop in

temperature in a short amount of time. The sap flow could potentially freeze in the trunk, expand, and cause damage. We have not recently endured that scenario across the region to cause worry (such as the extreme drop around December 25, 2022), however, should you find evidence of it please contact me so we can track it.

The rehydration of the dormant grapevine continues through bud swell. This is when we start to worry about lower temperatures and bud damage. Living, green tissue has water and water can freeze. The bud tissue is vulnerable to freeze injury at only a few degrees below 32 degrees Fahrenheit. Grapevines have compound buds made up of three buds: primary with a full crop, secondary bud with one-third to one-half of a full crop potential, and the unfruitful tertiary bud that contains vegetative material to ensure the vine can make food it needs to survive. Freeze injury in response to low temperatures typically affects the primary bud first because it is largest with more water. Our vines are deacclimating, but I have not witnessed bud swell at this point in the season.

For further reading:

Zabadal, T., I Dami, M Goffinet, T. Martinson, and M. Chien. 2007. Winter Injury to Grapevines and Methods of Protection. Michigan State University, Extension Bulletin E2930.

Pool, R. M. 2000. Assessing and Responding to Winter Cold Injury to Grapevine Buds, web page, Cornell University.

Walter-Peterson, H. 2010. Bud Injury Testing, two-part video. Finger Lakes Grape Program's YouTube channel.

Martinson, T., S. Hoying, H. Walter-Peterson and J. Creasap Gee. Bud Hardiness Page, Viticulture and Enology Outreach page, Cornell University.



Updates and Information

Kimberly Knappenberger, Viticulture Assistant, LERGP

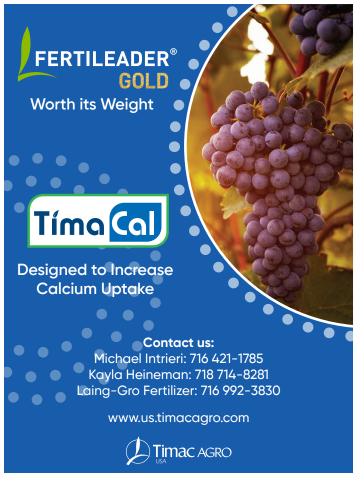
NEWA

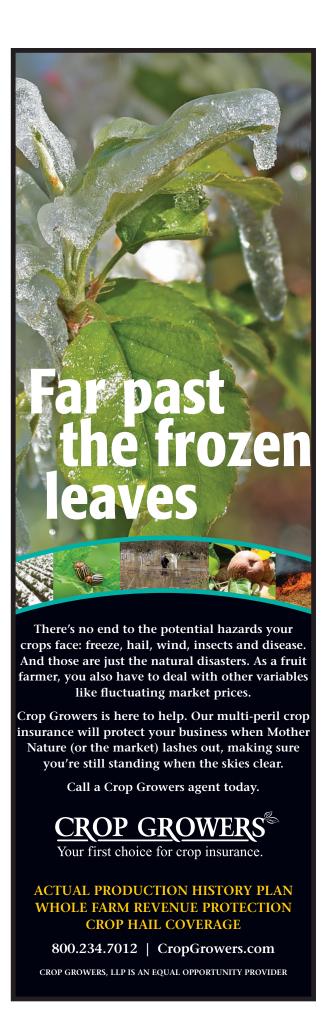
The Versailles station is about to get an upgrade from its original Rainwise station to a brand new KestrelMet 6000 station. We are excited about this new addition to our fleet of weather stations in the region. KestrelMet 6000 is a NEWA compatible weather station that is comparable to our original Rainwise AgroMet MKIII stations. The current station at Versailles has been sending data since February 2012. As a rule, NEWA does recommend replacing these stations after 5-10 years depending on the reliability of the data and, as if on cue, this station has just begun being less reliable in the past couple of weeks. This new station will be transmitting data via cellular connection which we are hoping will be a better fit for the location. The station should be set up soon (we are waiting for a monomount which is not a standard size... FYI), but you will notice that there will be estimated data on the NEWA website until the switch is complete in the NEWA system. Typically this takes anywhere from 1 to 2 weeks.



Figure 1 Versailles KestrelMet 6000 station awaiting installation







NYSDEC HOW TO GET CERTIFIED COURSE

WHEN:

March 23, 2023 10am - Noon

WHERE:

Cornell Lake Erie Research & Extension Laboratory 6592 W Main Road Portland, NY 14769

EXAM DATE:

March 30, 2023 9:30am Start Time Same Location

DISCUSSION TOPICS

NYS Pesticide Laws & Regulations

Certification Requirements

Certification Exam Process

EPA Worker Protection Standard (WPS)

SAME-DAY EXAM REG.

\$100 Exam Fee (Payable to NYSDEC)

Exam paperwork provided & completed onsite

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Kate Robinson 716-792-2800 x201