



Finger Lakes Vineyard Update

'Polar Vortex' in Finger Lakes Vineyards

Hans Walter-Peterson

So - was it cold enough for ya?

While we really won't know just what kind of impact the recent blast from the Arctic had on the vines until this spring (or possibly later), I wanted to put together a summary of what we know so far, what we don't know, with perhaps a hint of "educated speculation" thrown in as well.

How cold did it get?

As with any temperature event in the winter, the answer is that it depends. Looking at the [NEWA weather stations](#) at vineyard sites around the Finger Lakes, low temperatures on January 3 and/or January 7 (different locations had their lowest reading on one night or the other) ranged from -3° to -11° (see table). While that's cold, most of those are warmer than the temperatures that grape growing regions in Ohio and Michigan had during that same time. Reports from our colleagues in Ohio are that lows got down below -10°F in many parts of the state.

Location	Low Temp (°F)	Date	Time
Dresden	-3.1	January 3	8:04 PM
Lodi	-5.8	January 3	8:21 PM
Dundee	-10.7	January 3	8:02 PM
Penn Yan	-11.0	January 3	8:53 PM
South Bristol	-6.8	January 7	8:30 AM
Hammondsport	-9.0	January 7	7:28 AM

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2014 Becker Forum: Building the Agricultural Workforce of the Future

January 20, 2014

Unified Grape & Wine Symposium

January 28 – 30, 2014

Pruning Workshop

February 14, 2014

B.E.V. NY 2014 – Save the Dates!

Thursday, February 27 – Saturday, March 1, 2014

'Polar Vortex' in Finger Lakes Vineyards (continue from page 1)

Because it was so windy, it obviously felt a lot colder to us than single digits below zero, and those wind chill values were what everybody was talking about and worried about, for good reason. The concept of wind chill doesn't apply to grapevines though, and therefore we only need to worry about the actual air temperatures that the buds, canes, cordons and trunks were exposed to.

But how fast did it get cold? Doesn't that make a difference?

It can, but this is where we venture into territory that we don't have a lot of information about, so we have to rely more on experience from past events and engage in some of that "educational speculation" that I mentioned earlier.

We know that the LT₅₀ values (temperatures that kill 50% of the buds) can fluctuate during the winter in reaction to air temperature - we've seen this in our own test results over the past several winters. If we get a

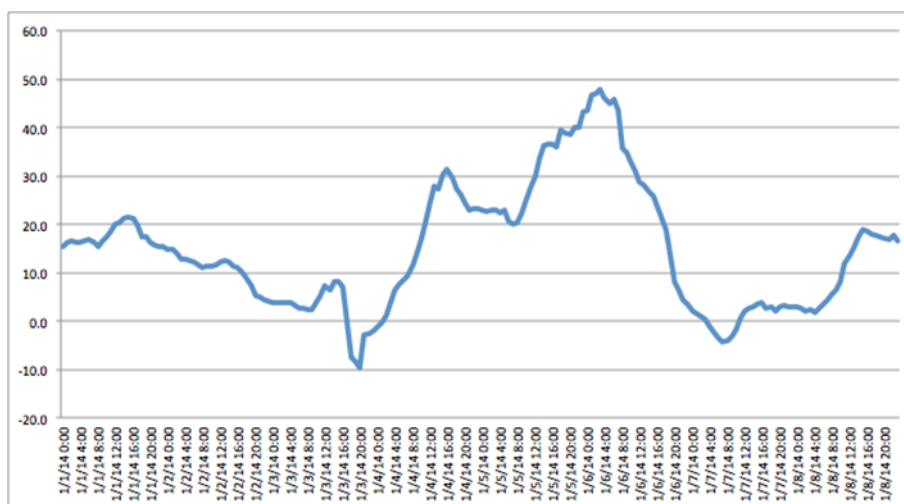


Figure 1. Hourly temperature readings from Dundee NWA station between 12:00 AM, January 1 and 8:00 PM, January 8. Temperature dropped from 47° to -4° in about 29 hours on January 6-7.

bit when the temperatures warmed up, but the other three - [Riesling](#), [Noiret](#) and [Concord](#) - had almost no change in their hardiness levels. You can also see in the Cabernet Franc graph that temperatures at Geneva went lower than the level where we would expect about 10% damage, but not for the other varieties.

So at this point, it looks like the rapid change in temperatures may not have had a major impact on bud hardiness, but some spots certainly got cold enough to cause some bud damage (more on that below) - as they say in the commercials, "your results may vary." We'll know more over the next few weeks as we get more data from our sampling.

The thing that could be more of a problem from this rapid change in temperatures is injury to trunks. Many growers remember the "Christmas Massacre" in 1980, when temperatures dropped from around freezing to -10° or colder within a day, causing a significant amount of cracking on trunks and a lot of dead vines. This usually happens when water moves into the vascular system, and then freezes inside the vines which results in cracking. As you can see in the temperature graph above, we had a pretty significant drop in temperature on January 6-7, going from 47°F to about -4°F in 29 hours. Is this enough of a drop to cause trunk injury? Possibly, but we don't really have a way of knowing until after bud break.

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Current status of vines

As I mentioned, we collected our first bud samples last week (January 6) to check their hardiness. You can see the results on the project’s webpage (<http://grapesandwine.cals.cornell.edu/cals/grapesandwine/outreach/viticulture/weather.cfm>), but here are the LT₅₀ numbers from our first run:

Variety	LT ₅₀ range (multiple sites)
Concord	-18.3 to -25.7°F
Cayuga White	-14.2 to -15.5°F
Cabernet Franc	-11.0 to -14.1°F
Riesling	-9.4 to -13.4°F

The next set of samples will be collected next Tuesday, and we will let you know when the results from those samples are posted.

We also wanted to start to get some idea of how much actual bud injury might have been caused by the cold. Earlier this week (Monday), Mike collected some canes from a few different varieties (all on the east side of Seneca Lake) to check for bud injury, and here’s what he found:

Variety	% bud injury (50 bud sample)
Concord	4%
Cayuga White	10%
Riesling	6%
Merlot (close to lake)	26%
Merlot (uphill from lake)	20%



Source: R. Pool, “Assessing Winter Cold Injury to Grape Buds”. <http://www.fruit.cornell.edu/grape/pool/winterinjurybuds.html>

Keep in mind that these samples were taken from one general area, so we don’t know yet just how indicative they are across the Finger Lakes. We will do a couple more of these injury assessments this winter and report back what we find.

Given the weather this year, it will be important for growers to make this assessment for themselves for different varieties and different locations before starting to prune, particularly for more sensitive hybrid and all vinifera varieties. Adjustments should be made to pruning formulas depending on how much injury is found. I think the guidance from Bob Pool still makes a good rule of thumb to follow:

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- ◆ 0 - 20% injury: No need to adjust number of buds retained.
- ◆ 20 - 80% injury: Increase the number of buds retained in proportion to the injury.
- ◆ 80%+ injury: Prune away only those nodes which will intrude into the space of adjacent vines or which will produce fruit so low that it hangs to the ground.

For information on how to collect and assess buds for winter injury, watch our YouTube videos on the subject:

Checking Grape Buds for Winter Injury, Part 1: Collecting Samples

http://www.youtube.com/watch?v=_RHJ5mY3fAs

Checking Grape Buds for Winter Injury, Part 2: Cutting Buds

<http://www.youtube.com/watch?v=eWtr0jzI2Dk>

Other resources:

[Assessing Winter Cold Injury to Grape Buds](#) (2000 Robert Pool, Revised 2011)

[Assessing Winter Cold Injury of Grape Canes and Trunks](#) (2000 Robert Pool, Revised 2011)

[How Grapevine Buds Gain and Lose Cold-hardiness](#) (2011, Appellation Cornell Newsletter)

[The Anatomy of Winter Injury and Recovery](#), by Martin Goffinet (2004)

[Winter Injury to Grapevines and Methods of Protection](#) (2007) - The FLGP office in Penn Yan has several copies of this book for sale, if you would like to purchase it from us directly. Cost: \$15.

Enrollment for 2014

The arrival of the New Year means that it's time to submit your enrollment for the Finger Lakes Grape Program for 2014. We trust that you continue to find that being a member of the FLGP is beneficial for your farm and your business, and look forward to working with you again this year.



In addition to using the paper form enclosed in your mailing (you can also [click here](#) to download and print a copy of the form from our website), we are now able to offer online option and credit card payment for enrolling in the FLGP as well (I know, welcome to the 21st century). Just go to our website, flgp.cce.cornell.edu, and click on the red 'Log In/Enroll' link in the upper right corner. On the right side of the panel that drops down, click on the 'Online Enrollment Form' link. Fill out the form with your information, indicate which county or counties you farm in, and select the membership options that pertains to you (in region or satellite enrollment), if you would like to receive hard copies of the Vineyard Notes newsletters or the Pest Management Guidelines. You can also choose to make an additional contribution to the Finger Lakes Grape Program and/or your local county Extension office. Fill in your credit card information at the bottom, click the button below the form, and you're done!

Why consider adding a donation to the FLGP with your enrollment? Let me ask - would any of the following statements be true for your farm?:

Enrollment for 2014 (continue from page 4)

- ♦ I used the free New York Grape & Wine Classifieds site to find a buyer or seller for some grapes (bulk wine, equipment, etc.).
- ♦ We changed a practice on our farm because of something I heard at a Tailgate Meeting.
- ♦ I changed my spray regimen because of a heads-up about disease development that I read in a Vineyard Update.
- ♦ Hans or Mike helped me to identify a problem and a course of action to resolve it when they came to visit my farm.
- ♦ The FLGP staff helped me to identify our new vineyard site and advised us on preparing and planting it.

If any of these are true, or if we've helped your business in some other way, we hope you will consider adding a donation to your enrollment. Any donations to the FLGP are used to support our existing work, like those things mentioned above, and other projects like the GIS Vineyard Mapping project and the new Teaching & Demonstration Vineyard. We appreciate the support of our program that you show by enrolling, but any additional amount you could afford in response for what the FLGP has done for you would be greatly appreciated as well.

If you need any assistance or have any questions about enrollment, please contact Karen Gavette in our office at kag255@cornell.edu or 315-536-5134.



Introducing B.E.V. NY :[Business. Enology. Viticulture.]

Thursday, February 27 – Saturday, March 1, 2014

Holiday Inn Waterloo

2468 Route 414, Waterloo NY

Registration and program information is available at <http://events.cals.cornell.edu/bevny2014>.

The New York Wine Industry Workshop and Finger Lakes Grape Growers Conference have a new name but the same focus: providing the New York grape and wine industry with the most current and relevant evidence-based information. This year, drink local and learn local as we showcase the expertise of wine researchers from your own backyard. Experts from Cornell, Penn State, Finger Lakes Community College, and Tompkins Cortland Community College will present on topics ranging from soil pH to tannins to social media use.

Introducing B.E.V. NY (continue from page 5)

Thursday, February 27 - Business

Topics covered will include regulatory issues, branding and marketing and current industry trends.

Friday, February 28 - Enology

Planned topics include spontaneous and co-fermentations, oxygen and sulfur management, wine acidity and more.

Saturday, March 1 - Viticulture

Scheduled subjects include management of weeds, viruses, canopies, soil pH and cover crops. Also on Saturday - the annual trade show and wine reception.

So drink local, and learn local by attending B.E.V. NY!

Upcoming Events

Don't forget to check out the calendar on our website (<http://flgp.cce.cornell.edu/events.php>) for more information about these and other events relevant to the Finger Lakes grape industry.



B.E.V. NY 2014

Thursday, February 27 – Saturday, March 1, 2014

Holiday Inn – Waterloo NY

Drink Local, Learn Local. Business, Enology and Viticulture information all in one event.
See above for more information.

2014 Becker Forum: Building the Agricultural Workforce of the Future

January 20, 2014

Doubletree Hotel

6301 Route 298, East Syracuse NY

Visit <http://nysvga.org> for program and registration information.

Unified Grape & Wine Symposium

January 28 – 30, 2014

Sacramento Convention Center – Sacramento, CA

Every January, the Unified Wine & Grape Symposium trade show is home to over 650 suppliers to the wine and grape industry. With more than 13,400 industry professionals attending and 730 booths, the Symposium is the largest wine & grape industry conference and trade show of its kind in North America.

Program, registration and lodging information is available at the event's website, <http://www.unifiedsymposium.org>.

Upcoming Events (continue from page 6)

Pruning Workshop

Friday, February 14, 2014 1:00 – 4:00 PM

Jordan Hall Auditorium, New York State Agricultural Experiment Station

630 W. North Street

Geneva, NY 14456

Are you interested in learning how to prune grape vines? Then you won't want to miss the Finger Lakes Grape Program's pruning class and hands-on demonstration. There will be a brief indoor session with plenty of time to get familiarized with proper techniques and ask any question you may have. Then we will go outside and all attendees will have the opportunity to prune vines on three different training systems.

Pre-registration is required and the cost is \$30 per person (class size limited to 25 people). You can register online at the [workshop's registration page](#), or call the Yates County Cooperative Extension office at 315-536-5134.

Additional Information

Got some grapes to sell? Looking to buy some equipment or bulk wine? List your ad on the [NY Grape & Wine Classifieds website](#) today!

Become a fan of the [Finger Lakes Grape Program on Facebook](#), or follow us on [Twitter \(@cceflgp\)](#). Also check out our website, "The Grape Lakes – Viticulture in the Finger Lakes" at <http://flg.cce.cornell.edu>.

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FINGER LAKES VINEYARD UPDATE
Is published by
Cornell Cooperative Extension
Finger Lakes Grape Program
Ontario, Schuyler, Seneca, Steuben and Yates Counties
417 Liberty Street, Penn Yan, NY 14527
315.536.5134