

CROP UPDATE May 20, 2021

Photo-Jennifer Phillips Russo

Cornell Cooperative Extension Lake Erie Regional Grape Program



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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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Business Management

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

Many grower discussions this week were focused on the results of damage assessments. Growers and Extension have scouted and the results are in, sort of. High elevation damage was frequently cited at 80% - 95% of primary buds. Many blocks north of route 20 report 0% damage. South of route 20, things get complicated. Damage to primary buds occurred in many blocks. Damage was not severe enough to kill the entire primary shoot. As a result, these growers have concerns about yield and lateral shoot growth. It does appear that secondary bud development has been held back by some of this damage. If primary buds do not yield fruit, the impact to yield could be very severe. Many of these conversations revolved around the growers managing these three areas for prebloom disease control. Timing changes are an important part of effective disease control and the phenology of secondary bud development might be more important than primary buds for some growers.

We also touched on a potential problem that might impact as much as 15,000 acres of grapes in the region. Too much crop. I've always said the worst time for a crop to be out of balance is when the rest of the industry has a balanced crop. I stand corrected. The worst time could be when the rest of the industry is under-cropped. The damage to the escarpment was severe and dramatic but it was limited to a small enough percentage of the acreage that it will not impact schedules, harvest efficiency, or industry wide brix accumulation. Damage to south of 20 is a different ball of wax. The concentration of acreage will impact industry production if damage to yield turns out to be significant in that area. Growers with high yield estimates should continue to monitor the situation to see if it warrants changes in production practices.

Obviously thinning is an option and it is warranted when vines are over-cropped. Field blending damaged areas may somewhat reduce the need for thinning. I'm sure growers are looking to be aggressive with yields this year. Given current prices, it's probably a good strategy to be a bit more aggressive. This isn't an article on the economics of thinning, so read on.

One thing growers want to do is to make sure their daily harvest capacity is high. If the harvest season is one week shorter than average and begins one week early, high yielding vineyards will be under an extreme amount of pressure. To be honest, that example might be a bit extreme. Bulk harvesting can dramatically improve daily throughput on larger operations. When compared to loading boxes on trailers, load turn times can decrease by 30% when yields are high. This is particularly true with modern harvesters that are able to keep ground speeds high. Longer machines with bow rods and larger cups or larger belts make this possible. With slower harvesters, turn times can still be 15% faster.

Bulk harvesting can be a \$75,000 investment for a grower. Good thing grape prices are up, but what if you don't have that kind of money in the bank? USDA has a farm storage facility loan program that bulk harvest would qualify for. \$50,000 loans require just 5% down and waive 3-year production history requirements. A \$75,000 investment would require 15% down and annual payments of \$7,000 for 10 years. The tax benefit of accelerated depreciation would likely cover the down payment and first year of payments. The first year cost of the investment would be less than \$0. This is all made possible by the world of extremely low interest rates. You can find them here and also find out more information about the program. After that, contact USDA to apply. https://www.fsa.usda.gov/programs-and-services/price-support/facility-loans/farm-storage/

Viticulture Jennifer Russo, Viticulture Extension Specialist, LERGP

In the Vineyards



photo 1. Concord grape shoots

I have been driving around the belt to check on the phenology of the shoots and monitor frost/ freeze damage shoot progression. Last week's cool temperatures stalled out the growth and not much moved until the latter part of last weekend. The beautiful weather definitely stimulated the healthy primary shoots and the average shoot length in the vineyards that I wasn't sprayed out of was three and half inches. There were shoots out there that measured five inches and then there are still some that are just measuring three.

There are three flat leaves with the fourth unfolding on most as of Tuesday, May18th, and with the past two days' weather I anticipate that they are even further along.



photo 2. Photo of measuring shoot length progression

The blocks that experienced frost/freeze damage are exhibiting shoot, leaf, and cluster damage. Those shoots are not growing at the same rate of the unaffected vines. In some cases, the first couple leaves are curled with damaged edges or have fallen off completely. At last night's Virtual Coffee Pot Meeting, Andy Muza displayed a photo he took of the damaged shoots where lateral buds are pushing. It is going to be interesting to see what happens between the primaries with laterals and the secondaries as the season progresses. Below is a photo that a grower sent to me that shows the damaged first few leaves unable to flatten out. You can also see damage to the cluster, where half of it didn't develop. We talked about more damaged clusters with growers in attendance last night.



photo 3. Photo of frost/freeze damaged shoot where leaf and cluster damage is visible

There have been questions about dialing back on nutrient amendment programs in the wake of severely damaged blocks. If any of your blocks have experienced this type of damage where 85-90% of your primaries are gone, then I would agree that dialing back on your nutrient amendments makes sense. You do not want to promote excessive vigor and potential bull wood. If you have pH ranging from 5.5-6.5 and sufficient organic matter ranges of 3-5% in those damaged blocks, then in theory, there should be adequate soil nutrient supply to support the vine growth that is not carrying a heavy crop.

I suggest that you can wait a bit to make this decision. The best time for nutrients applications is during the time of active shoot growth. This is two weeks before bloom and up to four weeks after. I will be touching more in depth on the research that supports this timing of application in our next Newsletter. Watch your questionable blocks and count clusters at bloom to get a better idea of what your crop potential is before making drastic nutrient amendment decisions.

NOAA's National Weather Service Forecast by 12 Hour Period

Notes: Weather forecasts are sourced from National Oceanic and Atmospheric Administration's (NOAA) National Weather Service.

National Weather Service Forecast (click to link)

NOAA's Disclaimer (click to link)

UTC Forecast Time: 2021-05-20T05:37:06+00:00

<u>Overnight:</u> Mostly cloudy, with a low around 62. South wind around 8 mph. Thursday: Partly sunny, with a high near 78. West wind 3 to 9 mph.

<u>Thursday Night</u>: Partly cloudy, with a low around 64. Southeast wind 2 to 8 mph. Friday: Mostly sunny, with a high near 75. Southwest wind 7 to 13 mph.

Friday Night: Mostly cloudy, with a low around 65. Southwest wind 8 to 12 mph.

<u>Saturday</u>: A slight chance of showers and thunderstorms after 8am. Partly sunny, with a high near 76. Chance of precipitation is 20%.

<u>Saturday Night</u>: A slight chance of showers and thunderstorms before 8pm. Partly cloudy, with a low around 62.

<u>Sunday:</u> A chance of rain showers between 8am and 2pm, then a chance of showers and thunderstorms. Partly sunny, with a high near 75. Chance of precipitation is 40%.

<u>Sunday Night</u>: A chance of showers and thunderstorms before 2am. Mostly cloudy, with a low around 53. Chance of precipitation is 40%.

Monday: Partly sunny, with a high near 68.

Historical Growing Degree Days (base 50)

Notes: Current season accumulation is reported as the thick blue line from January 1 through date of this report. Historical season data is reported between January 1 and December 31 of each year. The legend indicates how many GDDs had accumulated by the same date in previous years and the final total for the year on December 31.

Data is sourced from Cornell's Northeast Regional Climate Center (NRCC) high resolution gridded data service.



Figure 1. Historical Growing Degree Days for Cornell Lake Erie Research and Extension Laboratory in Portland, New York

As of May 20, 2021, the accumulative Growing Degree Days (GDD) for CLEREL are displayed on the graph above (Figure 1.) The GDDs were previously tracking higher than the five-year average to date, however, after the cooler temperatures last week, we are slightly above to the five-year average of 168.4 out of 2809.2 for the year. For 2021, we currently have accumulated 170.0 GDDs and as of today, we are below 2017's YTD of 248.0 GDDs out of 2817.0 for that year.

Historical Precipitation (inches)

Notes: Current season accumulation is reported as the thick blue line from January 1 through May

20, 2021. Historical season data is reported between January 1 and December 31 of each year. The legend indicates how many inches of precipitation had accumulated by the same date in previous years and the final total for the year on December 31. Data is sourced from Cornell's Northeast Regional Climate Center (NRCC) high resolution gridded data service.

As far as 2021 precipitation goes, the graph below (Figure 2.) depicts our accumulative precipitation as 11.6 inches (the thick blue line). This is 8.4 inches below the five-year average to date and 11.8 inches below 2017 of 23.4 inches.



Figure 2. Historical Precipitation in inches for the last five years at the Cornell Lake Erie Research and Extension Laboratory in Portland, NY

Article continued on next page.....



Forecasted Hourly Wind

Arrows denote direction of wind flow (e.g. a southern wind flows from south to north and indicated by an arrow pointing north). I am sharing the below forecasted hourly wind graph (Figure 3.) below that shows the potential wind speed on the Y axis (the vertical on the left of the graph) for this coming weekend. It is my hope that this information may help with your spray timing decision making.



Figure 3. Forecasted Hourly Wind Speeds for this coming weekend in Portland, NY

Phenological Resources:

- Grape Disease Control, Spring 2021 | Katie Gold, Cornell University
- Enterprise Tool for Eastern US Small Vineyard Management | Cornell University
- <u>Spotted lanternfly experts debunk myths about the prodigious, pestilent pest</u> | *Amy Duke, Pennsylvania State University*



PA Update

Andy Muza, LERGP Extension Team & Penn State Extension - Erie County

In the Vineyard (5-20-21)

For the third week in a row, I revisited many of the same sites reported on since the Crop Update on May 6, to determine the status of these vineyard blocks. This week, with the warmer weather, shoot growth is finally starting to progress.

Vineyard blocks (from Rt. 5 to midway to Rt. 20)

As reported previously, there was minimal to low levels of freeze/frost injury (at majority of sites) in these areas. Last week (5/11/21), most of the primary shoots ranged between $2^{\circ} - 4^{\circ}$. This week (5/17/21), most of the shoot growth ranged between $3^{\circ} - 6^{\circ}$.

Vineyard blocks (just south of Rt. 20)

For the last 2 weeks, shoot growth was stalled between 1.5° – 3.5° . This week, primary shoots in this area can be categorized into 2 groups.

- 1) <u>Primary shoots</u> (with no injury to the shoot tips) with the warmer weather, uninjured shoots progressed to 4° 6° stage.
- Primary shoots (with freeze/frost injury to shoot tips) these shoots remained stalled at 1.5" – 3.5", with lateral shoots just starting to grow from axillary buds at leaf axils (Figures 1 & 2). Secondary buds ranged from bud swell – budbreak stages.

Vineyard blocks (around Sidehill Road and up the escarpment)

The blocks with the highest injury levels were around Sidehill Road and up the escarpment. As reported last week, dead primary buds ranged from 88% - 94%. On May 17, shoots from primary buds that escaped injury were about 5" – 6" in length. Last week, secondary buds in this area were between bud swell – 1" range. **This week, secondary shoot growth ranged from budbreak – 3**".



Figure 1. Primary shoot tip injury (due to frost) on Concord, with lateral shoot development from axillary buds at leaf axils. Photo – Andy Muza, Penn State.



Figure 2. Frost injury to Concord shoot tip, with lateral shoot growth at leaf axils, and secondary bud development. Photo – Andy Muza, Penn State

PA Update

Bryan Hed, Research Technologist, Lake Erie Grape Research and Extension Center

<u>Weather:</u> The month of May has been very dry and, until about 5 days ago, also very cold. Consider that we had almost twice as many growing degree days (gdds) in the first half of April as in the first half of May. It's been 10 days since we've seen any rainfall, and we have accumulated just 1.07" of rainfall and 96 gdds for the month at our site by the lake. We have accumulated about 193 gdds as of April 1. In the short-term forecast, no rain today or Friday, but 20% chance on Saturday, increasing to 40% Sunday and 60% by mid-week next week.

<u>Phenology:</u> Comparing development on 3 different varieties at 3 different stages of development (Concord, Chancellor, and Vignoles) here by the lake, we are about 6 days ahead of last year. That could put trace bloom for Concord (here by the lake) at about June 10, about 3 weeks away. But, a lot can happen between now and then. Concord shoots are currently about 4.1", with 3 leaves unfolded at our site; right at 3-5" shoots. Farther inland, shoots will be a bit longer, with the exception of vineyards with frost-damaged primaries.

<u>Diseases:</u> At this time last week we were calling for growers to gear up for that first spray at 3-5" for Phomopsis, in light of the forecast for rain on the following Monday and Tuesday. The timing was going to be right on the money, for the first time in...forever. That rain threat quickly evaporated, the chance for rain fell to zero, and now we have blown through the 3-5" shoot stage without that first spray for Phomopsis, and it's too early for the 8-12" shoot spray. Growers were keeping a close eye on the weather, and understandably, the bone dry weather led most growers to take a 'wait and see' attitude; growers that didn't get whacked by frost, held off on that first spray until the next threat of rain (I must admit, we held off here at the North East lab as well).

According to NEWA, there are no infection periods predicted for the next 3 days. However, the chance of rain (and therefore, an infection period for Phomopsis, powdery mildew and black rot) increases again as we move into Sunday and next week. With that in mind, once again, it is time to protect inflorescences that are vulnerable to damage from Phomopsis, with an application of mancozeb or captan before the next rain, particularly for vineyards that did not get hit with frost damage and are growing out normally.

For vineyards hit with frost damage, the degree of damage can obviously affect your spray strategy from here. For vineyards that lost nearly all their primaries, which is the case for some vineyards in Erie county that are farthest from the lake, it would be prudent to follow the development of your secondaries, which in vineyards Andy and I have looked at, are at about 2-3" of shoot growth...approaching that 3-5" stage for the first spray over the next few days; get that first spray on before the next rain.

But in between the two extremes, there are lots of variations of damage that make the decision to spray, less clear cut. In some cases, we're seeing that most of the primary shoot and its inflorescences are fried, but axillary buds at the base of the primary, along with secondary buds, are just beginning to push. In these vineyards there may be little in terms of inflorescences (\$\$) to protect at this time, except for an occasional primary 'escape' that's 6-8" long. In this case, I would be less inclined to apply that first spray until the inflorescences on the axillary and secondary buds are vulnerable. However, it depends on what percentage of shoots are in this predicament of heavy damage, and it can change dramatically within the same vineyard block.

Then we're seeing cases where the primary shoot tip has not been killed, is still actively growing with primary shoots at 4-6" long. The shoot tip looks fine but the leaves and inflorescences behind it have been partially burned, leaving less than a full crop. Fruit set on what's left of the inflorescences is likely to be improved by this (fewer flowers to 'feed' with finite resources during bloom, fruit set increases), but it's impossible to say at this point, just how much that will compensate for the lost portions of the inflorescences. In such cases however, your inflorescences are exposed and vulnerable, there are shoots actively elongating, and it would be prudent to protect them from the next rain period.

All that said, keep in mind that the first mancozeb or captan spray does not have to be at full rates and gallonage. This is one of the least expensive sprays of the season and our focus should be to protect those inflorescences! Delaying that first spray may have also put us in an awkward position for timing that immediate pre-bloom for fruit protection, if we hit bloom in three weeks.

As for powdery mildew, the dry, cold weather should have kept early disease development to a bare minimum, and this disease is probably not much of a threat at this point.

For future sprays, especially around bloom, growers with a mix of primaries and secondaries are going to be looking at two bloom periods and very possibly an extra spray during that critical period for fruit protection, from immediate pre-bloom through the first post bloom. You can use mancozeb up to the beginning of bloom for your primaries, but you'll have to drop that out for the pre-bloom on your secondaries and go with something like Ziram for downy, black rot, and Phomopsis. As we near this period over the next 3 weeks, we'll probably have more adjustments to make, and more to talk over, as we get a clearer idea of the extent of damage for frosted vineyards.



Need help with pruning? Thinning, suckering, and tying? Canopy management in the summer? Harvest hands?

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Updates and Information

Kimberly Knappenberger, Viticulture Assistant, LERGP

NEWA

If you use the Sheridan station for your weather updates, I have good news for you! On May 6th we were able to replace the aging and failing Rainwise station with a new HOBO station from Onset. Rainwise weather stations are an excellent instrument to get local weather data and to connect to the NEWA network, but the experts there recommend replacing the units after 5 years. We have many of these stations in the network and have seen them work reliably for much longer in most cases. Onset is the "new kid on the block" as far as being NEWA compatible. Whereas Rainwise is more of a plug and play sort of station that comes assembled and just needs to be mounted in the proper orientation, Onset HOBO stations are comprised of multiple components that arrive in separate boxes and require the proper mounting and orienting of each sensor. Although



somewhat challenging, this does allow for the adding, removing and/or replacing of sensors as needed.

You probably will not notice much of a difference... except that there is accurate data to depend on. Previously the wind speed, gusts, temperature, relative humidity, leaf wetness and solar radiation on the Sheridan station were all having one issue or another. Moving forward we expect this information to be more accurate and reliable.

If you find that the station you use does not seem to be sending data that is correct, please contact Kim at <u>ksk76@cornell.edu</u>.

Also, don't forget to try out the <u>NEWA 3.0 website</u>. The programmers have been working hard to get the Grape Berry Moth and Grape Disease models available. You can click on these links to access them directly or go to the bottom of the page and click on them under the IPM & Crop Tools header. <u>https://dev.newa.cornell.edu/grape-berry-moth</u>

https://dev.newa.cornell.edu/grape-diseases

As always you can still access these models on the old website as well at newa.cornell.edu.

VIP

Just a quick reminder that this grant money is still available for removal of Concord vineyards. If you have one or know of someone that has one contact Kim at <u>ksk76@cornell.edu</u> to get started. This opportunity will be here for a little while longer but don't wait too long. It's a great opportunity to get assistance to make an underproductive/abandoned vineyard a more



productive part of your operation.

PPE

The Cornell Cooperative Extension of Chautauqua County still has plenty of hand sanitizer and masks if you need them. These supplies are available to agricultural producers and their employees. We now have 2 ounce spray bottles in addition to the gallon jugs. Contact Kim at <u>ksk76@cornell.edu</u> or fill in the survey at this link. <u>https:// cornell.qualtrics.com/jfe/form/SV_7QGUNMNCn7ofvDf</u> Distribution will be from CLEREL in Portland.





Information for you

Kate Robinson, Administrative Assistant, LERGP

2021 Coffee Pot Meeting Schedule

May 26, 2021	10:00am	2021 LERGP Coffee Pot Meeting #4	Virtual Platform - Zoom
June 2, 2021	10:00am	2021 LERGP Coffee Pot Meeting #5	Virtual Platform - Zoom
June 9, 2021	10:00am	2021 LERGP Coffee Pot Meeting #6	Virtual Platform - Zoom
June 16, 2021	7:00pm	2021 LERGP Coffee Pot Meeting #7	Virtual Platform - Zoom
June 23, 2021	10:00am	2021 LERGP Coffee Pot Meeting #8	Virtual Platform - Zoom
June 30, 2021	10:00am	2021 LERGP Coffee Pot Meeting #9	Virtual Platform - Zoom
July 7, 2021	10:00am	2021 LERGP Coffee Pot Meeting #10	Virtual Platform - Zoom
July 14, 2021	10:00am	2021 LERGP Coffee Pot Meeting #11	Virtual Platform - Zoom
July 21, 2021	7:00pm	2021 LERGP Coffee Pot Meeting #12	Virtual Platform - Zoom
July 28, 2021	10:00am	2021 LERGP Coffee Pot Meeting #13	Virtual Platform - Zoom

Registration Requirements- Please Read!

To receive DEC and PDA pesticide credits, you are required to register for <u>each of</u> the coffee pot meetings you plan to attend. You do this at the <u>LERGP web-site</u>.

Choose the coffee pot meeting you would like to attend-

Click on "view details"

Click on "Register for this event now"

Then send a copy of your pesticide license to <u>kjr45@cornell.edu</u>, In the e-mail include your Date of Birth. This step only needs to be done one time, but continue to register for subsequent meetings.

Registration is open until 8:00am the day of morning meetings and 4:00pm on evening meetings.

Other links of interest:

LERGP Web-site:

Cornell Cooperative Extension website:

Cornell CALS Veraison to Harvest Newsletter:

Efficient Vineyard:



Appellation Cornell Newsletter:

COVID-19 resources:

Need information? View the following Cornell CALS and CCE Resource Pages Updated Regularly

General Questions & Links:

https://eden.cce.cornell.edu/

Food Production, Processing & Safety Questions:

https://instituteforfoodsafety.cornell.edu/coronavirus-covid-19/

Employment & Agricultural Workforce Questions:

http://agworkforce.cals.cornell.edu/

Cornell Small Farms Resiliency Resources:

https://smallfarms.cornell.edu/resources/farm-resilience/

Financial & Mental Health Resources for Farmers:

https://www.nyfarmnet.org/

Cornell Farmworker Program

www.farmworkers.cornell.edu

www.trabajadores.cornell.edu (en espanol)