





CROP UPDATE August 19, 2021

Photo credit- 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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<u>Click here to</u> watch LERGP Podcasts

Check out the video that Dr. Bates posted on MyEV on variable rate fruit thinning.







Eastern Viticulture and Enology Forum

Grower and Winemaker Town Hall: Questions From the Field and Cellar

A webinar series for Eastern Growers and Winemakers in collaboration with viticulture and enology extension programs at: Ohio State University, University of Maryland, Rutgers University, North Carolina State University, University of Georgia, University of Tennessee, Oklahoma State University, Mississippi State University, Texas Tech, Texas A&M, Colorado State University, New Mexico State University, University of Nebraska, Iowa State University, Purdue University, North Dakota State University, University of Minnesota, Michigan State University, and University of Wisconsin

September 7th @ 3:00 PM ET

Regional viticulture and enology specialists will present a Grower and Winemaker Town Hall virtual meeting series to give seasonal updates and answer pre-submitted and live questions from grape and wine industry stakeholders.

The structure of these meetings depends on pre-submitted questions. Use this link to pre-submit questions for viticulture and enology specialists to answer live during the meeting. <u>Please feel free to submit</u> <u>questions related to any topic by August 31st</u></u>. But please see below for the topic area suggestions for the September 7th meeting.

<u>Viticulture focus area</u>: pre-harvest and harvest decisions (pest management, berry sampling, fruit composition)

Enology focus area: post-fermentation treatments, wine stabilization and maturation

<u>Register using this link</u> and choose your breakout room (viticulture or enology) for the September 7th meeting. After registering, you will receive a confirmation email containing information about joining the meeting.

NOTE: Zoom updates may be required to ensure breakout rooms work efficiently. To update the client, with the Zoom desktop application open, do the following: (1) Click the initials/profile photo (upper right) and select *Check for Updates*; (2) follow the prompts to update and install the latest version.



Business Management

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

Grape Price Announcement

We've been talking all year about the shortage of Concord and its impact on price. Much of this occurred after harvest 2020, although even then things were looking good. Cooperative payments have been ticking up all year as has the price of bulk juice concentrate.

Full impact on the market takes more time as prices for cash market growers are announced on August 15th. The cash market producers mirror trends in the whole industry. Demand and profits are up, more dramatically for juice than wine overall. Average cash market Concord prices will exceed \$325 per ton in the cash market. Average Concord prices in the East may exceed \$350 per ton. There is a bit of forecasting that goes into play that is not as known, but all things do point in that direction.

For many growers' gross revenue will exceed \$2,500 per acre as these unusually high prices are not driven by a disaster in the tri-states. Many growers have already used higher prices and government subsidy to reinvest in depreciated capital investments (fancy way of saying harvesters, tractors and wire). We expect cash operating expenses to be much higher this year, likely approaching \$1,000 per acre for vineyards that are debt free and harvested by owner operators. That leaves a record \$1,000 - \$2,500 per acre to renew depreciating capital, realize profits and pay down expensive debt.

These are big numbers for Concord growers and I wouldn't plan on them lasting. The improved financial performance of Cooperatives will definitely help maintain higher returns for Eastern growers overall. However, demand for juice has established itself as inelastic. Consumers are shaking off these higher prices the same way they shook off lower prices. Changing the price does not significantly impact demand.

So, for growers that escaped the frost and hail, or emerged from such disasters with a reasonably sized crop, the investment opportunities will need to be carefully planned out to ensure that vineyards are better equipped to manage low prices with higher input costs when the next downward cycle hits this industry. That's not a prediction it will happen in 2022, I continue to remain optimistic that it will not. In all honesty, I don't have any idea. I am confident that labor will be expensive, fertilizer is likely to be expensive (we will know for sure in about 4 months) and other input costs are also likely to rise. Investments in the vineyard now, if capital is available and borrowing can be limited, set growers up for success, despite those challenges.

Viticulture Jennifer Russo, Viticulture Extension Specialist, LERGP

73 Days Post Bloom

The Cornell Lake Erie Research and Extension Laboratory in Portland, NY has been tracking Concord grapevine phenology for over 40 years. Finding color in the vineyard is getting easier by the minute. Based off the phenology data veraison occurs 69 days after bloom +/- three days. This year we called bloom in Concords at CLEREL on June 7th and that puts veraison projections for August 16th (70 DAB). As of the afternoon of August 18th, we have not officially called Concord veraison. Veraison is called when 5% of the majority of the clusters (over 50%) are showing color. The clusters at the top of the canopy and exposed to the sunlight will most likely show more color than the ones shaded by the canopy. The month of July has been extremely wet and cloudy. I expect that cooler, dreary days have slowed the berry ripening and that we should hit veraison in



Photo 1. Concord grape cluster showing signs of color in Portland, NY

the warmer days ahead.

Detailed Forecast for Portland, NY August 19, 2021 Detailed Forecast

This Afternoon

A slight chance of showers and thunderstorms before 2pm. Partly sunny, with a high near 79. West wind around 9 mph. Chance of precipitation is 20%.

Tonight

Mostly cloudy, with a low around 68. Southwest wind around 7 mph.

Friday

Mostly sunny, with a high near 79. Southwest wind 5 to 7 mph becoming northwest in the afternoon.

Friday Night

A slight chance of showers after 2am. Partly cloudy, with a low around 67. Light and variable wind. Chance of precipitation is 20%.

Saturday

A slight chance of showers, then a chance of showers and thunderstorms after 2pm. Mostly sunny, with a high near 80. Calm wind becoming north 5 to 9 mph in the afternoon. Chance of precipitation is 30%. New rainfall amounts of less than a tenth of an inch, except higher amounts possible in thunderstorms.

Saturday Night

A chance of showers and thunderstorms before 8pm. Partly cloudy, with a low around 68. Chance of precipitation is 30%. New precipitation amounts of less than a tenth of an inch, except higher amounts possible in thunderstorms.

Sunday- A chance of showers and thunderstorms after 2pm. Mostly sunny, with a high near 82. Chance of precipitation is 40%.

Sunday Night- A chance of showers and thunderstorms before 8pm. Partly cloudy, with a low around 68. Chance of precipitation is 30%.

Monday- A chance of showers and thunderstorms after 2pm. Mostly sunny, with a high near 81. Chance of precipitation is 30%.

Monday Night- A chance of showers and thunderstorms before 8pm. Mostly clear, with a low around 66. Chance of precipitation is 30%.

Tuesday- Sunny, with a high near 82.

Tuesday Night- Mostly clear, with a low around 66.

Wednesday- Sunny, with a high near 82.





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PA Update

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

Weather: At our location by the lake, our August rainfall to date is 2.55". Growing degree day accumulations (gdds) for August are at 409, and we have accumulated 2053.5 gdds since April 1 (we are now only about 2 whole days ahead of last year at this time). Our short-term forecast is dry tomorrow (August 20), 20% chance for rain on Saturday, and 30-40% chance for rain on Sunday. Temperature highs will range from upper 70s on Friday, to low 80s on Saturday and Sunday.

Here by the lake, we are seeing color in Concord, but it is NOT at the 5% level yet. I anticipate we'll reach 5% color by Friday or Saturday (8/20-21).

Diseases: Weather conditions continue to be very conducive for downy mildew development. Scouting susceptible varieties here at our farm (Vidal, Niagara, any V. vinifera) has revealed downy mildew on leaves, mostly the younger, more vulnerable leaves. All this rain is like a shot of nitrogen, spurring continued new growth that also helps support greater grape pathogen population levels. It also enables vines to allocate more available potassium from the soil, especially needed in heavily cropped vineyards. Do your best to maintain a tight grip on downy mildew on susceptible varieties. I'm not really seeing any downy mildew on our farm's Concord at this point, nor am I concerned about it on Concord. For more information on this disease, I've reposted last week's update regarding downy mildew:

How do I tell downy mildew from powdery mildew on leaves?



Niagara leaves: upper left is powdery; upper right is downy; lower center is healthy.

Note that downy mildew lesions are more clearly defined, more vivid, sharper edges. Powdery mildew lesions have "blurry" or more diffuse edges.

The pathogen that causes downy mildew is dependent on wet conditions; without a wet plant surface through which spores need to swim to reach infection sites (stomates), no infection takes place. Fortunately, the fruit of most varieties are resistant to direct invasion by this pathogen by about 3-4 weeks after capfall. In other words, a developing berry is only susceptible to direct penetration of the pathogen from about the time the flower cap comes off (at the beginning of bloom) to about 3-4 weeks later (end of June/early July, on average). However, the cluster stems may remain susceptible for a couple weeks or more after fruit are resistant, and for this reason, fruit infection and loss can continue to occur from cluster infections 4 or 5 weeks after capfall. Once we get past the critical sprays for fruit protection, scouting for the distinctive white 'downy' sporulation on the undersides of leaves and on clusters and cluster stems is very important, and yields valuable information with regard to future need to spray. Growers of susceptible varieties do well to keep closely monitoring their vineyards for active sporulation and use that information in combination with the DMCast model on NEWA (http://www.newa.cornell.edu/) to determine if and when infection periods have occurred or will occur.

Leaves will remain susceptible all season, though they do become less susceptible as they age. For this reason, the limiting or elimination of new shoot growth by veraison, through good nutrient and/or canopy management, can help to reduce the supply of susceptible tissue in the vineyard during ripening, and make post veraison control of this disease more manageable. I have gone into vineyards in late August-early September and observed that downy mildew was largely present on new shoot growth, but not on mature leaves at older nodes. There were at least two reasons for this: i) new shoot growth is more susceptible than older, mature growth, and ii) new shoot growth, unless just sprayed, is unprotected or less protected by previous fungicide applications. Symptoms on mature leaves in late summer may appear different from those on young leaves in early spring.

The sight of active, white sporulation on green vine tissues (see Figure 2) means the downy mildew pathogen is capable of spreading quickly under wet conditions, and that sprays for downy mildew should continue, especially for susceptible varieties. Even humid nights that result in heavy dews by morning, can continue to fuel downy mildew development, generating fresh sporulation that can spread the disease rapidly when plant surfaces are wet. If you let downy mildew get out of control, it can strip vines of their leaves and in the worst cases, effectively end fruit ripening for the year, and shoot ripening for next year's crop. Your grapevines go into winter dormancy in poor condition, and are more vulnerable to damage by severe cold, leading to crown gall and expensive trunk renewal the following season, with little or no crop to pay for it; all that stuff is connected, so you want to keep downy mildew under very tight control, especially on Vitis vinifera.

Chemical control: Your list of chemical control options will start to dwindle as we get within 66 (Mancozeb products, Ridomil MZ), 42 (Ridomil copper), 30 (Ranman, Reason), 21 (Ziram), and finally 14 (Revus, Revus Top, Zampro) days of harvest. There is also the list of strobilurin containing fungicides that control downy, mainly Abound (not in Erie county PA) and Pristine. However, be aware that widespread resistance to strobilurins by the downy mildew pathogen has been documented in many places in the Northeast, and so this class of fungicides may not be among your best options. In the end you'll be left with Captan, copper, and phosphorous acid products (0-day pre-harvest interval), which have their own shortcomings, discussed below.

Products like Ridomil (the mefanoxam component), Ranman, Reason, Revus/Revus Top, Phos acid products, and Zampro, are more rainfast than the 'old standard' surface protectants like copper, mancozeb, ziram, and captan, but contain chemistries that are prone to the development of resistance. Therefore, they should not be used to put down an epidemic, which will only speed up the resistance development process. Even phosphorous acid products can be lost to resistance through repeated applications on a diseased vineyard, so keep downy mildew well under control. The resis-

tance prone materials (Ridomil, Ranman, Reason, Revus/Revus Top, Zampro, Phos Acid products) are best used to maintain a clean vineyard, NOT to put down an epidemic. Conversely, the surface protectants would be least risky in terms of the development of resistance and can be an effective means of controlling downy mildew late into the growing season. Just be aware of seasonal limits, so plan ahead as best you can.

Here are some precautions to consider with use of the 'old standard' surface protectants:

Captan is toxic to plants, and for that reason, is formulated to remain on the surface of the plant as a protectant. Tank mix partners, like oils, solvent based insecticides, and emulsifiable concentrates, may enable captan to penetrate into plant tissues which can lead to plant injury. Therefore, oils and some liquid insecticides should not be applied with Captan or within 14 days of a Captan application. Check out <u>this link</u> from Dan Ward: Always read the label carefully.

There is the concern for plant injury by copper applications, which will be exacerbated by application under slow drying conditions and application to wet canopies (for example, don't make applications to dew covered canopies in the early morning). The addition of lime to the application raises the pH of the spray solution, reduces the solubility of the copper, and reduces the chances for plant injury by copper.

Consider that copper is poisonous to yeasts and that excessive copper residues at harvest can interfere with fermentation, and wine stability and quality. Unfortunately, it's impossible to predict how high residues will be on fruit at harvest; that's going to depend on the copper formulation (some of the newer coppers utilize lower copper concentrations, but may also be more rainfast), rate of material used, number and timing of applications made, spray coverage, and amount of rainfall from application to harvest. I am not aware of any information that establishes a nice, clean cut-off date or pre-harvest interval for avoiding excessive copper residues at harvest, but I have heard that cut-ting off copper use about a month before harvest may be sufficient in most cases.

There is also evidence that late Captan sprays can delay fermentation and have negative effects on wine quality, but the consequences seem less severe and irreversible than those associated with copper use. For more on this, consider <u>this online article</u> by Annemiek Schilder, former fruit pathologist at Michigan State University.

If you are protecting a non-bearing, young vineyard from downy mildew (you're not selling/harvesting a crop), you can continue to use mancozeb products to control downy mildew past the 66-day pre-harvest interval. You can also consider using mancozeb after harvest to keep canopies clean of downy mildew and 'firing on all cylinders' until that first frost. The longer your vines can continue to produce and store carbohydrates after harvest, the better prepared they'll be to withstand winter cold without damage (and the crown gall that follows).

For powdery mildew on natives, it's all about keeping canopies fully functional to the point where the crop will get ripe on time. At this point in the season, I doubt there are many cases where continued protection of Concord (or Niagara) leaves from powdery mildew is still needed to ensure you get your crop ripe, if you've been taking good care of your canopies. I'm more concerned about poor ripening conditions (cloudy, wet weather) than anything else right now, and its critical for ripening of very large crops that we get some sunny, dry weather over the next 2-4 weeks. In overcropped vineyards, we cannot spray our way out of poor ripening weather.

In wine varieties, especially those that produce tight clusters, a Botrytis specific fungicide spray at veraison and about 2-3 weeks later can help manage bunch rots but will only be effective on Botry-

tis. In warm, wet harvest seasons, we can also see some sour rot caused by non-Botrytis microbes that cannot be controlled with Botrytis specific fungicides. Fruit zone leaf removal, applied earlier around bloom, can significantly reduce bunch rot development now in these varieties. However, research has shown that the benefits of leaf removal tend to diminish the later its applied.

Work by Megan Hall and Wayne Wilcox shows that controlling fruit flies (with insecticides) during the latter part of the ripening period (beginning around 15 brix) can significantly reduce sour rot development. Applying insecticides with sterilants or antimicrobials like Oxidate or Fracture can further improve control over insecticides alone. However, always rotate insecticide chemical classes to delay the development of resistance.

And now for something completely different: some of you may have noticed many of the Norway Maples in town with dying/blighted leaves and canopies. Some of these trees may have already dropped many of their leaves. I have one such tree in my front yard. Upon closer inspection, the blighted leaves show large black blotches, as if splattered with tar. This condition is caused by fungal leaf pathogens in the genus Rhytisma, and the disease is aptly called 'tar spot'. It generally affects Norway, Silver, and Red maples, but I mostly see it on Norway maple. To manage this disease, one of the simplest things you can do is rake up and destroy the infected leaves at the end of the season (I said simple, not easy), because that's the overwintering source of inoculum for new infections the following spring. However, unless your neighbors with infected trees do the same, there will be little benefit to this exercise. There are fungicides that could be used to protect small, young trees, but fungicide sprays would be impractical for larger trees. The good news is that the disease generally does not cause any lasting harm to otherwise, healthy trees.



PA Update

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

In the Vineyard (8 - 19 - 21) -

Grape Berry Moth

While scouting at a Severe Risk site this week, before rain showers began, I was still able to find GBM eggs and numerous newly injured berries from recently hatched larvae (Figure 1). However, rain droplets on clusters interfered with detection of any eggs at other High Risk sites which were examined.

According to the GBM Model, "**If 1620 DD occurs prior to August 5**, you can expect continuous pressure from grape berry moth through harvest. Model results are not good predictors of timing of population pressures. Multiple additional insecticide applications may be necessary in high pressure vineyards to address the extended egglaying and overlapping generations. Continuous coverage is necessary to avoid excessive crop loss. NOTE: Insecticide applications after mid September will have limited effectiveness in preventing damage."

Only one NEWA station (Sheridan) reached 1620 DD before August 5. However, 11 sites reached 1620 DD between 8/5 - 8/8 so there is a possibility of a fourth generation at some locations. (See the Table below of NEWA stations around the Lake Erie Region, that Kim Knappenberger provided for the Crop Update on 8/5, showing the Date when 1620 GBM DD was expected to be reached across the region).

Downy Mildew

The showers/thunderstorms, again this week, continue to increase the potential for downy mildew (DM) infections to occur throughout the region. Keep scouting vineyard blocks with DM susceptible varieties (i.e., Niagara, Catawba, Fredonia, Delaware, Chancellor, *V. vinifera* varieties) and look for yellow lesions on the upper surface of leaves (Figure 2).

Black Rot

In Concord vineyards that were scouted, I continue to find more berries expressing various stages of black rot development (Figure 3). The symptoms that are occurring



Figure 1. Grape berry moth larval entry hole injuries on a Concord berry. Photo – Andy Muza, Penn State.



Figure 2. Yellow lesions, caused by downy mildew infection, on upper surface of a Delaware leaf. Photo – Andy Muza, Penn State.



Figure 3. Black rot on Concord berries. Photo – Andy Muza, Penn State.

at this point are a result of infections that occurred at least 3-4 weeks ago, when Concord berries were close to the period of full resistance. (Concord berries reach full resistance to infections about 5 weeks postbloom).





insurance, and everything else related to H-2A compliance.

F. Brandon Mallory, CEO 510 Clinton Square, PMB 5010 Rochester, NY 14604 <u>contact@agri-placement.com</u> 315-986-4738

NEWA location	Wild Grape Bloom date*	GBM GDD total for	Date expected to hit 1620
		8/5/2021	
Ransomville	5/31/2021	1515	8/9/2021
Burt	6/6/2021	1366	8/15/2021
Corwin	6/2/2021	1467	8/11/2021
Brant	6/1/2021	1516	8/9/2021
Versailles	6/1/2021	1459	8/11/2021
Hanover	6/2/2021	1482	8/10/2021
Sheridan	5/22/2021	1711	8/1/2021
Silver Creek	6/3/2021	1474	8/11/2021
Silver Creek Double A	5/26/2021	1605	8/6/2021
Dunkirk Airport	5/29/2021	1594	8/6/2021
Forestville	5/27/2021	1529	8/9/2021
East Fredonia	5/31/2021	1480	8/10/2021
Fredonia	6/2/2021	1448	8/12/2021
Brocton Escarpment	5/31/2021	1476	8/11/2021
Portland	6/1/2021	1491	8/10/2021
Portland (LERGP West)	5/29/2021	1558	8/8/2021
Westfield	6/2/2021	1482	8/10/2021
Ripley	5/27/2021	1549	8/8/2021
Ripley Escarpment	5/26/2021	1542	8/8/2021
Ripley State Line	5/26/2021	1566	8/7/2021
North East State Line	5/26/2021	1513	8/10/2021
North East Escarpment	5/24/2021	1599	8/6/2021
North East Sidehill	5/25/2021	1553	8/8/2021
North East Lab	5/26/2021	1605	8/6/2021
Harborcreek	5/26/2021	1637	8/5/2021
Harborcreek Escarpment	5/30/2021	1438	8/12/2021
Lake City	5/26/2021	1594	8/6/2021

*Estimated date provided by NEWA website. Wild grape bloom occurs when 450 base 50BE degree days have accumulated from January 1st of the chosen year.

The difference in wild grape bloom between Portland and Portland LERGP is likely due to marginal differences in the readings coming off of respective sensors or even marginal differences in microclimate. A spread of 2 days falls within the margin of error and the models give advance messages that bloom is approaching."

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)