Cornell Cooperative Extension
Lake Erie Regional Grape Program

PennState Extension

Crop Update - July 23, 2020

Concord grapes at CLEREL on July 8,2020 Jennifer Phillips Russo

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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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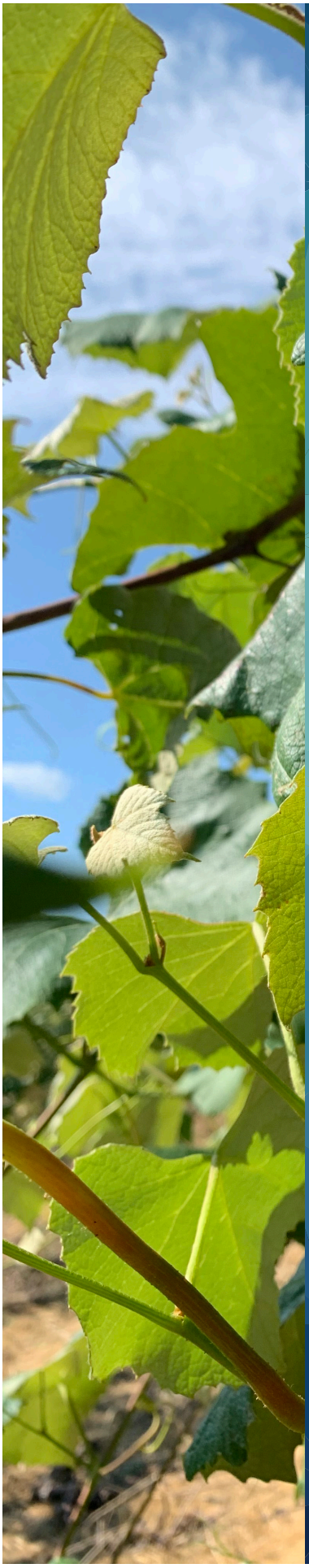
How to join a Zoom meeting video (1 minute):
https://www.youtube.com/embed/vFhAEoCF7jg?rel=0&autoplay=1&cc_load_policy=1

Joining and Configuring Audio & Video (1 minute):
https://www.youtube.com/embed/HqncX7RE0wM?rel=0&autoplay=1&cc_load_policy=1

Click here to watch recorded Coffee Pot meetings!



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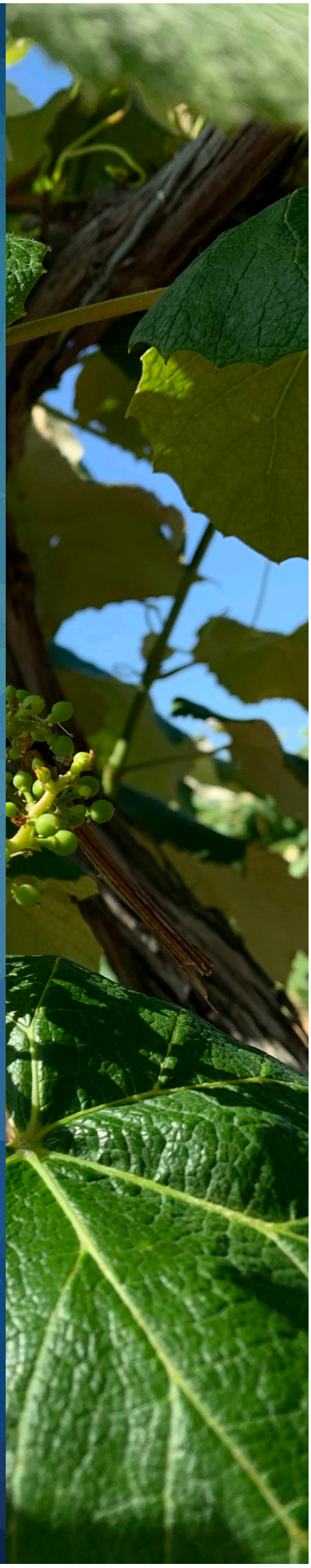

Business Management

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

Cover crops update

Just like that, soil moisture has turned around in many vineyard blocks. While we don't know if this trend will continue, the risks of more complex and expensive cover crop seed mixes has gone way down in many areas.

Grain rye will do better on well-drained soil, particularly when soil moisture is high. Rye grass and oats can be a good substitute on heavier soils. Unless you're solely focused on nitrogen, these cool season grasses typically are a good base for the mix. Seed rates can vary somewhat but keep them low as long as you're planting early with a good no-till seeder.

Cool Season Grass	Low Rate	High Rate	Low Cost	High Cost
Grain Rye	10	60	$5	$24
Rye Grass	7.5	18	$6	$16
Oats	35	60	$17	$27

For most growers 70% - 80% of the high rate will provide a healthy stand to reduce erosion and provide weed control. Soil health goals can be reached with moderate rates to low rates depending on the grass. Low rates of grass should always be used if goal is nitrogen. Growers can also mix cool season grasses to increase diversification and potentially lower costs. Oats as a base, or as a monoculture can be particularly expensive.

Daikon radish are a popular cover crop for good reason. With adequate soil moisture and nutrients, the radish excels at meeting multiple cover crop goals all at once. While it was specifically developed to break up compaction, it also recycles nutrients and controls for weeds. Seed rates for daikon radish were historically high. From my perspective the cost is too high. The cover crop experts also seem to advocate that less is more for the radish. 6 pounds is plenty for a monoculture, which isn't even a recommended practice. If you are really focused on compaction 3 pounds will work. It may also out compete other species in the mix, so avoid expensive and less competitive species for diversity when focused on compaction. Most growers should use between 1.5 and 2 pounds of radish. Costs will be less than $5 per acre.

After really pushing buckwheat last week in the newsletter, given the change in weather pattern it is no longer mandatory. It remains a great option that will effectively control fall weeds. I would continue to recommend it but particularly with soil health goals, seed rates for buckwheat could be scaled back now that soil moisture is available. Seed rates should be 5 to 10 pounds if it is included in your mix. Cost will be between $4 and $9 per acre.

That concludes the basic cover crop recommendations and leaves us with a cost of $20 - $30 per acre. Save yourself a row middle "Rely" application and reduce your rate of round-up by a pint in the spring. This cover crop investment is more than paid for.

Legumes, particularly the fancy ones will increase costs. Legumes are recommended once

experience with cover crop is higher. It is likely that an investment in legume will take longer to pay off. If pH is too low or soil is not well drained it is possible that legumes will never pay. Swimming in the deep end is more fun. The potential for generating available N is also exciting. The best way to proceed is with very low seed rates, around 5 pounds per acre for crimson clover. This limits any risk associated with poor legume growth. On a side note, it was very interesting to see crimson clover being rolled early in 2020. The superior weed control has the potential to turn this advice upside down if being used to control weeds effectively through rolling. I'll maintain that such a practice is best exercised in the 3rd to 5th year of cover crop planting.

Caption: With care cover crops can even assist young vines. Rye grass, radish, and grain rye planted in 2019. Terminated June 1st 2020

Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

In the Vineyard

The past week has been full of regional crop estimation. The last couple of Crop Updates have included the Concord Crop Estimation and Thinning Table along with instructions of how to use it. A podcast explaining how to use the table was recorded on 7/22/2020 and is located on LERGP Website. Please reach out to me if you need help deciphering how to use it. For a season where we thought that there was an average to lower than average crop out there due to frost events, I have been receiving reports of 10 and 12 ton/acre crops and you need to know what you are working with to insure you can meet quality standards at harvest.

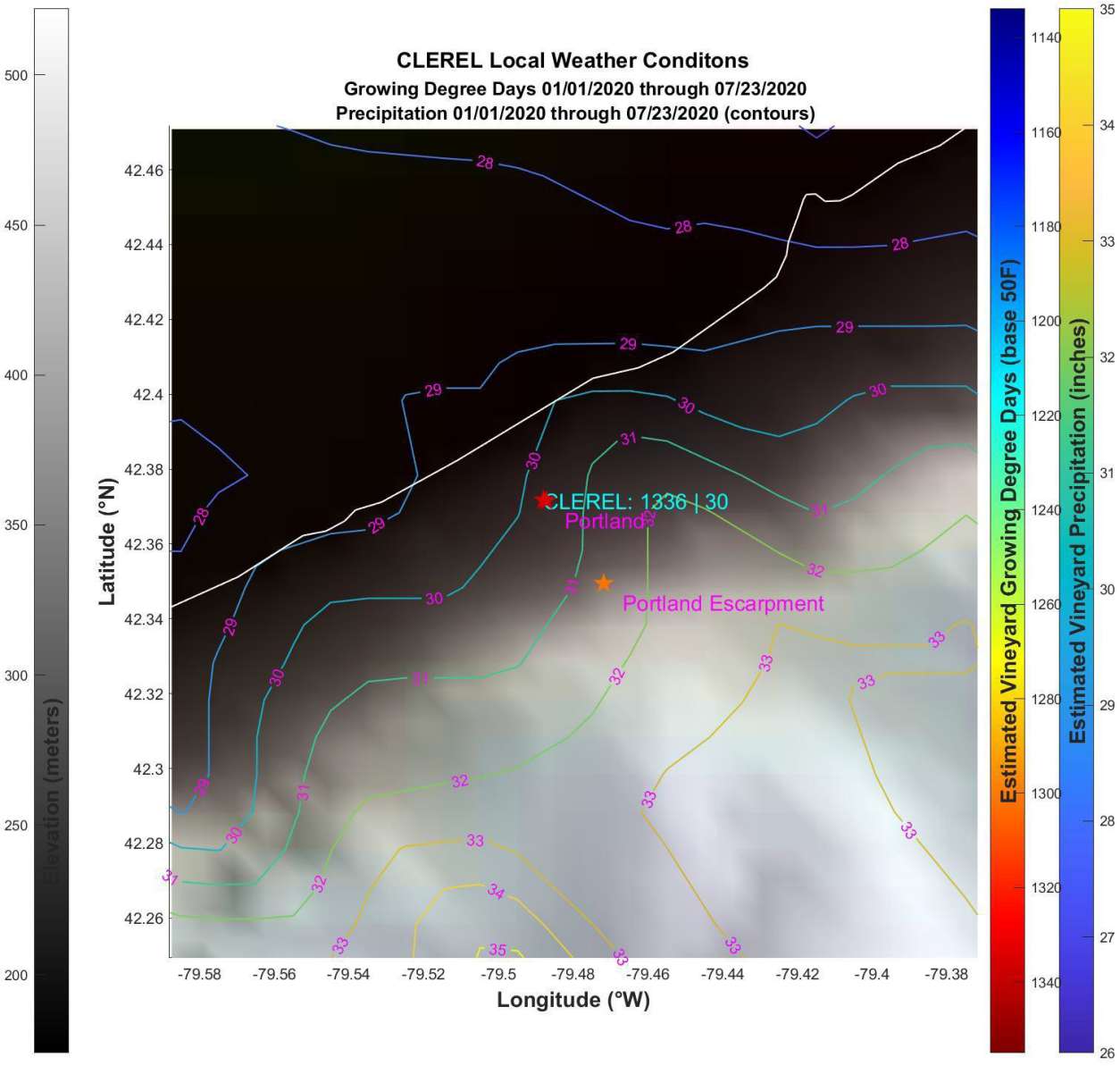

Figure 1. Cornell Lake Erie Research and Extension Laboratory Local Weather Conditions with Growing Degree Days and Precipitation from 1/1/2020 through 7/23/2020

Notes: Year-to-date Growing Degree Days (GDDs) are reported as color-coded symbols your vineyard (star), nearby vineyards(circles), and CCE offices (squares). Year-to- date precipitation is reported as color-coded contours. Site symbols are annotated with GDD and precipitation (e.g. 110 | 12 indicates 110 GDDs and 12 inches of rain). Yellow circles are NEWA stations closest to your site. GDDs and precipitation are sourced from Cornell's Northeast Regional Climate Center (NRCC) high resolution gridded data service which calculates **GDD using daily high/low temperatures, not hourly**. Elevation data is sourced from United States Geographical Survey (USGS) digital elevation model.

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: 2020-07-23T03:12:34-04:00

Overnight: A chance of showers and thunderstorms, then showers likely and possibly a thunderstorm after 5am. Mostly cloudy, with a low around 71. Southwest wind around 8 mph. Chance of precipitation is 60%. New rainfall amounts between a tenth and quarter of an inch, except higher amounts possible in thunderstorms.

Thursday: Showers likely and possibly a thunderstorm before 7am, then a chance of showers and thunderstorms between 7am and 3pm, then a slight chance of showers after 3pm. Partly sunny, with a high near 79. West wind 7 to 9 mph. Chance of precipitation is 60%. New rainfall amounts between a tenth and quarter of an inch, except higher amounts possible in thunderstorms.

Thursday Night: Mostly clear, with a low around 66. Calm wind.

Friday: Sunny, with a high near 78. Light east wind becoming north 5 to 9 mph in the morning.

Friday Night: Mostly clear, with a low around 65. North wind 5 to 7 mph becoming light and variable after midnight. Saturday: Sunny, with a high near 80.

Saturday Night: Mostly clear, with a low around 68. Sunday: Mostly sunny, with a high near 84.

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.

The Cornell Lake Erie Research and Extension Laboratory's 2020 GDDs are tracking right along the five-year average line (dotted line on the figure below). We are lagging behind 2018 and 2016 GDDs, but above the other three seasons.

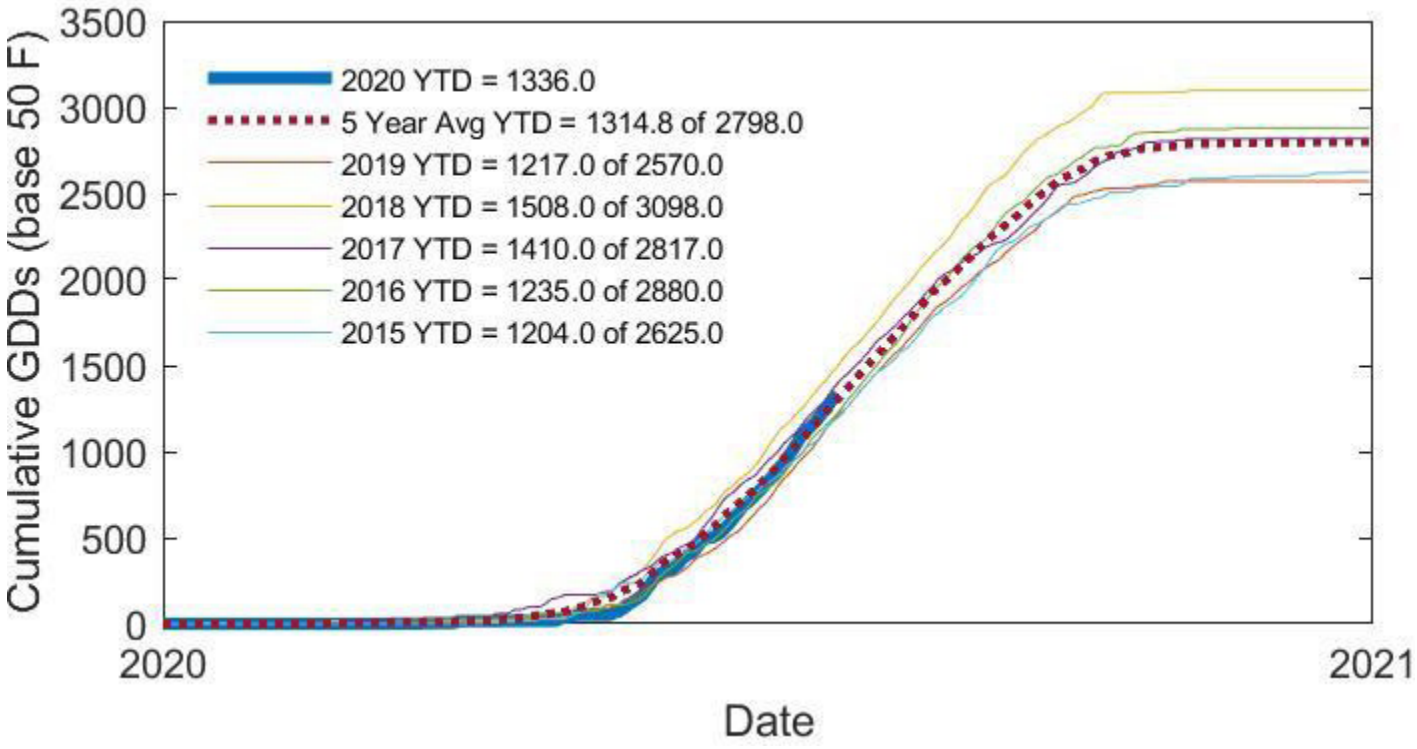

Figure 2. Cornell Lake Erie Research and Extension Laboratory Historical Growing Degree Days (base 50) from 1/1/2015 through 7/23/2020

7-Day GDD Forecast

Future GDD total accumulations are estimated using temperature forecasts sourced from National Oceanic and Atmospheric Administration's (NOAA) National Weather Service. If you report a date (send me an email) for wild grape bloom near you the GBM model will use it, otherwise wild bloom date will be estimated.

Date	Phenology (GDD base 50F)	Grape Berry Moth Model (GDD base 47F, after wild bloom) New Generations (start scouting at 750 and 1470)
7/23/2020	1360	1165
7/24/2020	1382	1191
7/25/2020	1405	1217
7/26/2020	1433	1247
7/27/2020	1460	1277
7/28/2020	1485	1305
7/29/2020	1507	1330

Table 1. 7-Day Growing Degree Day Forecast and Grape Berry Moth Model Growing Degree Day Forecast for Cornell Lake Erie Research and Extension Laboratory 7/23/2020 through 7/29/2020

Historical Precipitation (inches)

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 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.

CLEREL precipitation for 2020 through 7/23/2020 equals 29.6 inches, which is tracking along the year 2015 at this point in the growing season and slightly below 2017. The five-year average rainfall by this same date is 27.1 inches, so we are 2.5 inches above the average.

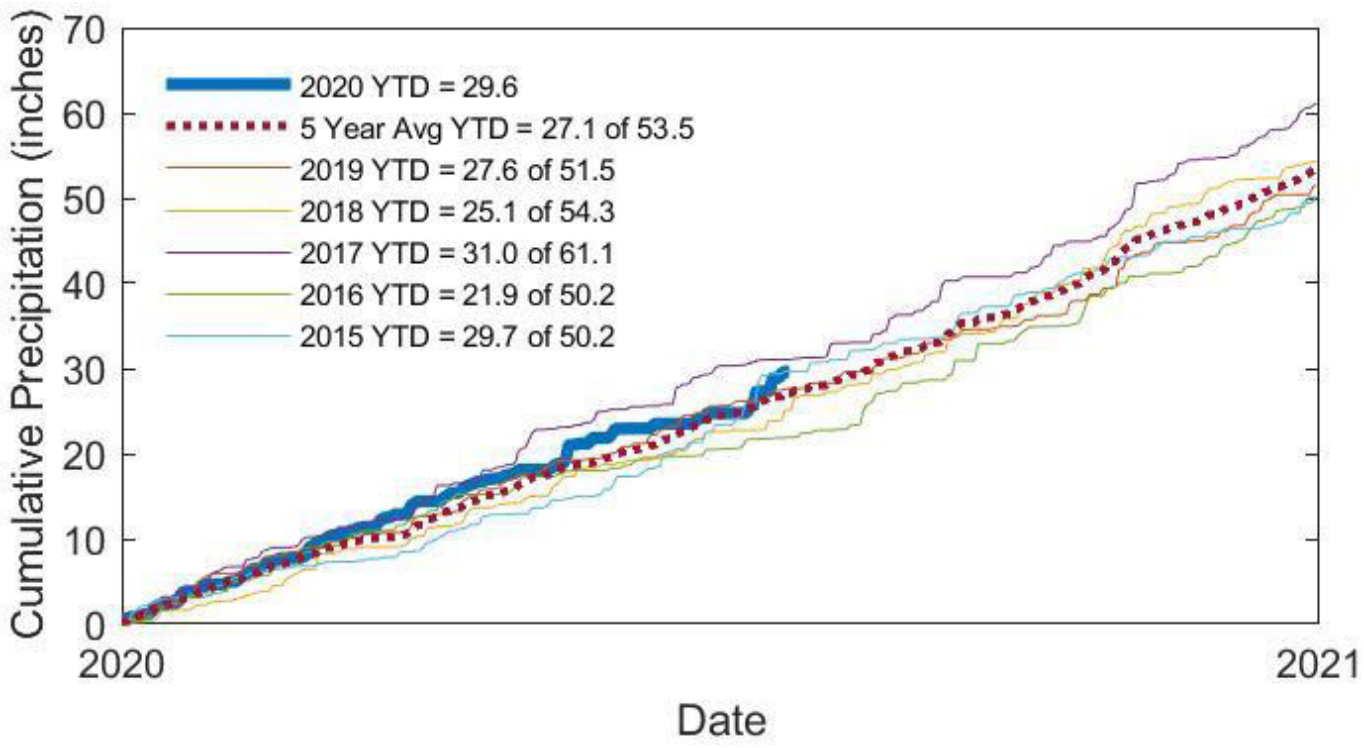

Figure 3. Cornell Lake Erie Research and Extension Laboratory Historical Precipitation in Inches from 1/1/2015 through 7/23/2020

Date	Avg Air Temp °F	Max Air Temp °F	Min Air Temp °F	Total Precip (inches)	Leaf Wettness Hours	Avg Wind Spd (mph)
7/1/20	72.1	80.1	62.7	0	0	2.9
7/2/20	74.5	81.9	65.4	0	0	4.7
7/3/20	75.8	80.5	69.9	0	0	4.1
7/4/20	73.1	80	62.1	0	1	2.5
7/5/20	73.2	84.4	60.2	0	0	2.3
7/6/20	74.6	82.3	64.6	0	0	2.6
7/7/20	78.4	87.2	66	0	0	3.1
7/8/20	77.6	82.9	72	0	0	3.4
7/9/20	80.6	90.1	71.3	0.44	3	2.4
7/10/20	79.2	92.5	70.7	0.24	8	4.5
7/11/20	71.8	75.4	69.8	1.34	13	5.5
7/12/20	71	74.9	64.6	0	0	4.7
7/13/20	68.9	73.4	61.3	0	0	5.8
7/14/20	67.6	73.4	60.8	0	0	2.8
7/15/20	72.2	81.4	59.2	0	0	2.5
7/16/20	74.9	77.9	71.8	1.46	12	6.1
7/17/20	73.2	78	68.4	0	0	4.6
7/18/20	76.5	81.9	67.3	0	0	3.4
7/19/20	78	86.6	70.9	0.6	4	6.6
7/20/20	74.8	78.1	70.2	0	0	6.7
7/21/20	73	80.8	63.9	0	0	2
7/22/20	74.6	78.9	69.6	0.21	5	4.1
7/23/20	71.4i	71.7i	71.0i	0.08i	2i	3.5i
Monthly summary	74.2	92.5	59.2	4.37	48	3.9

NEWA Weather Data

Table 2. Network for Environment and Weather Applications (NEWA) weather data for Portland, NY station in the month of July

Updates and Information

Kimberly Knappenberger, Viticulture Assistant, LERGP

Vineyard Improvement Program at the Virtual Coffee Pot Meeting

This past week the Vineyard Improvement Program was presented to the attendees of the virtual coffee pot meeting. This was in an attempt to give information to potential applicants about this cost share program available to owners of Concord vineyards.

Some of the highlights may sound familiar, but just in case you were hoping to see it in print again, here it is:

This is a cooperative project led by the Lake Erie Regional Grape Program through the **New York State Department of Ag and Markets** with funding through the **Southern Tier Agricultural Enhancement Program**and is available for Concord vineyards in New York State. Eligible counties include: Chautauqua, Erie (NY), Niagara, Cattaraugus, Allegany, Steuben, Schuyler, Chemung, Tompkins, Tioga, Broome, Chenango, and Delaware.

This was a proposal from the Concord Grape Summit held in April 2018 aimed at assisting Concord grape growers in their efforts to respond to the challenges they face through processor closings, contract reductions and overall reduction in demand for grapes. These challenges have led to a significant number of acres that have essentially been abandoned due to the cost prohibitive nature of removal. This program offers partial reimbursement for removal of that acreage as well as for replanting* to improve the economic viability of their production operations.

VIP is a reimbursement program that offers 50% of removal costs up to $1,200* per acre and 25% of replant costs up to $1,500 per acre, with a maximum reimbursement of $50,000 per applicant.

To date we have had 22 applicants who collectively represent 322 acres. 93.28 acres are intended to be replanted to vineyards, almost 118 are to be cover crops or field crops, and the remainder to apples, strawberries, rhubarb, asparagus, vegetable crops and solar. Four of those applicants have completed the process and have collectively received over $113,000. There are 2 more in the final stages amounting to almost $27,000.

My point here is that there is money available if you find yourself in need of removing a vineyard. To learn more and/or apply visit the LERGP Web-site. Applications are submitted online. If you have more questions or need help with a budget or business plan please contact Kevin Martin, Jennifer Phillips Russo or Kim Knappenberger.

An Aurore replant from the VIP program with cover crop in row middles-
Kim Knappenberger

Update to Distribution of Hand Sanitizer and Masks:

On Monday, July 27th we will be having another distribution day at CLEREL in Portland from **11:00 AM to 12:00 noon**. If you are interested in picking up some supplies please **sign up for your free product here**. If wearing masks and having hand sanitizer available for your employees or visitors is a part of your NY Forward plan, make sure you get your free supplies!

Cornell Cooperative Extension Chautauqua County is distributing free hand sanitizer and face masks to producers in Chautauqua County. Sanitizer and face coverings from the NYS Department of Agriculture have been brought to Chautauqua County through a partnership with CCE Chautauqua and Chautauqua County department of Building and grounds.

Production farms of **any type** are welcome to come pick up hand sanitizer. These farms can include **dairy, livestock, grapes, vegetables, farm stands, U-Pick, nursery, equine, and craft beverage**. If you know of anyone that still needs some please send them the link to register.
Once registered you will be contacted at the number left on the online request form to confirm pick up time.

For those of you who have already picked up gallon jugs of hand sanitizer with the hand pump, I'm sure you have noticed how fast and how much comes out. A simple trick that some have tried is to put a piece of a pool noodle or pipe insulator on the pump to keep it from pressing all the way. This will reduce the amount of sanitizer dispensed.

NEWA Location	Wild grape bloom date*	DD total on July 23, 2020	Forecasted DD for July 28
Versailles	June 5	1167	1303
Hanover	June 6	1168	1306
Sheridan	June 4	1248	1387
Silver Creek	June 6	1161	1298
Silver Creek (Double A)	June 4	1267	1405
Dunkirk Airport	June 4	1268	1405
Forestville	June 5	1201	1340
East Fredonia	June 5	1189	1328
Fredonia	June 6	1141	1280
Brocton Escarpment	June 6	1145	1284
Portland Escarpment	June 5	1188	1325
Portland	June 5	1182	1318
Portland (LERGP West)	June 4	1241	1379
East Westfield	(offline)		
Westfield	June 7	1123	1259
Ripley	June 5	1201	1341
Ripley Escarpment	June 6	1142	1282
Ripley State Line	June 5	1192	1332
North East State Line	June 7	1115	1244
North East Escarpment	June 5	1197	1330
North East Sidehill	June 6	1149	1282
North East Lab	June 5	1211	1352
Harborcreek	June 5	1230	1374
Harborcreek Escarpment	June 7	1089	1232
Lake City	June 6	1163	1302
Ransomville	June 6	1211	1359
Burt	June 10	1099	1247
Corwin	June 7	1183	1332
*Estimated date provided by NEWA website			

Table 1. Phenology-based Degree Day model results for Grape Berry Moth by NEWA station location in the Lake Erie Region on July 23, 2020.

PA Update

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

In the Vineyard (7-23-20) –

Grape Leafhopper **–** Leaf feeding injury (stippling) observed on interior leaves in a Concord block (Figure 1).
The greatest risk for economic losses due to grape leafhopper feeding occurs during hot, dry years in vineyards with heavy crop loads and high leafhopper populations. An insecticide application is recommended if a threshold of 5 nymphs/leaf is reached by the third week in July or 10 nymphs/leaf in late August. A scouting procedure for leafhoppers was designed by Tim Martinson (Senior Extension Associate, Cornell University) to determine threshold levels (see: "Bulletin 138, Risk Assessment of Grape Berry Moth and Guidelines for Management of the Eastern Grape Leafhopper").

Figure 1. Feeding injury (stippling) on Concord leaf caused by grape leafhoppers. Photo – Andy Muza, Penn State

Japanese Beetle – beetle populations and feeding injury was still low in Concord and Niagara vineyard blocks that I checked this week. Research has shown that grapevines (especially Concords with large canopies) can tolerate a fair amount of leaf area loss without detrimental effects. However, no economic threshold level has been established for leaf injury on grapes caused by Japanese beetle. Therefore, growers must rely on their judgement and experience to determine leaf injury levels they can tolerate.
Before deciding if an insecticide application is needed in any of your vineyard blocks consider these factors: Japanese beetle population levels, varietal susceptibility, age of vineyard (i.e., young or mature), canopy size, and crop load. Frequent scouting of vineyards is necessary to determine if heavy infestations are occurring which may warrant an insecticide application. Many wine varieties, young vineyard blocks and vines in grow tubes are especially vulnerable to serious leaf loss by Japanese beetle feeding so consistent monitoring is required.

Downy Mildew – I have still not found downy mildew in any Concord or Niagara vineyards. But, for the first time this season, a few downy mildew leaf lesions were found in a Delaware block (Figures 2 & 3). An increase in thunderstorms/rain showers elevates the likelihood of downy mildew infections occurring, particularly in Niagara, Catawba and other susceptible wine varieties. However, downy mildew problems in Concord vineyards this season are not expected.

Black Rot – again this week, only a scattering of leaf lesions and infected berries were found in vineyard blocks.
Although Concord berries are near the end of their susceptibility to infection, *Vitis vinifera* varieties will remain susceptible to infection for about 2 more weeks.

Figure 2. Downy mildew lesions on upper surface of Delaware leaf. Photo – Andy Muza, Penn State.

Figure 3. Downy mildew sporulation on lower surface of Delaware leaf. Photo – Andy Muza, Penn State

Powdery Mildew – Only low levels of leaf infections observed again this week. However, leaves can be infected throughout the season. The need for additional fungicide applications in Concord vineyards will depend on the amount of powdery mildew leaf infections in **your** vineyard(s) and crop load. It is important to continue scouting vineyards and to conduct crop estimations to determine potential crop size. (See: **Using the Concord Estimation Chart,** pages 5-8 in Crop Update – July 9, 2020). Jennifer Russo has also recorded a podcast on 7/22/2020 explaining how to use the Crop Estimation Table (LERGP Podcast #176).

PA Update

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

Weather: As of July 22, we have recorded nearly 4" of rainfall for the month at our location, all of it occurring within the last 2 weeks. We have accumulated about 548 growing degree days so far during July and we are on track to end up quite a bit ahead of average in gdds for the month. In fact, if we maintain the current pace of heat accumulation to the end of the month, we will have racked up the hottest July in at least 20 years, at this location. We now have 1386 gdds as of April 1. The three-day forecast looks like there's a chance of some showers today and Friday, with high temperatures hovering around average. Saturday and Sunday look to be dry.

Phenology and Diseases: Conditions have turned wet since July 10th, but the dry weather we had during the last week of June and the first 9 days of July have made fruit disease control relatively easy for most growers in the Lake Erie region. That first 2-3 weeks after capfall is the period during which fruit of ALL varieties are super susceptible to the major diseases, but the weather simply didn't provide the conditions needed for epidemics to develop in most places in the Lake Erie region. As a result, the grape crop should be relatively clean this year, especially for native varieties like Concord and Niagara.

We should be pretty much done worrying about Phomopsis at this time; spore sources should reasonably be expected to be 'milked out' with the rainfall we've had. Fruit of all varieties should be resistant to direct attack by powdery and downy mildew at this point, but cluster stems of susceptible varieties may still retain a little susceptibility to downy mildew. We should be nearing the end of the period of black rot susceptibility for natives, while *Vitis vinifera* may retain susceptibility to black rot through July into early August. Black rot that got a jump start on July 10th should be showing up on fruit right about now and into the weekend, so scout your vineyards if you're concerned about this disease. Rainfall last night has generated another black rot infection period that probably won't manifest itself for another 3 weeks or so. If your scouting efforts reveal more than a little black rot out there, you can still go in with a tebuconazole spray NOW and neutralize most or all of the infections that got started last night. This is especially important if you're growing vinifera.

As I mentioned, powdery mildew fruit disease is done and any more sprays should be targeting the leaves and should be based on the size of the crop that you will be working to get ripe. If you'll be trying to ripen an above average (or way above average) crop, keeping canopies clean and 'firing on all cylinders' is a good insurance policy. There is no formula for just how long you need to continue leaf sprays for powdery mildew; it depends on how much above average your production is on a block by block basis (which a good estimate and your cropping history records will tell you), and how much good ripening weather we have left (which is the million dollar question). The more 'above average' your crop is, the more affordable are the extra leaf sprays (if you can get the crop ripe) and the longer protection will be needed to keep canopies clean.

As for downy mildew, consider that we've had 4 inches of rain over the past 2 weeks, with warm temperatures; perfect conditions for this disease. Fortunately, the bone-dry weather in early July left little for these conditions to build on. Nevertheless, make sure you scout your susceptible varieties regularly during this wet weather, and be prepared to apply a spray for downy mildew if you see sporulating lesions. If wet conditions persist and you have active inoculum in the vineyard, this disease can spin out of control quickly. A full-blown case of downy at this time can be treated with

something like copper and lime. I would avoid the resistance prone materials like Ridomil, Revus, Ranman, Zampro, and even phos acids if you're seeing a fair amount of disease out there. For protectants only, mancozeb products (if you can still use them at this time) are going to be better than Captan or Ziram.

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)