

Cornell Cooperative Extension
Lake Erie Regional Grape Program

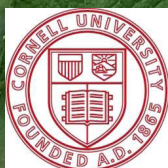


PennState Extension



Concords at CLEREL
7/6/2022-photo- Kate Robinson

LERGP July 2022 Newsletter



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Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.

In this issue:

Cover Crops in Perennials: 2022- *Kevin Martin*

Crop Estimation- *Jennifer Phillips Russo*

Spotted Lantern Fly Found Locally Announcement- LERGP

VIP & NEWA Updates -*Kim Knappenberger*

2022 LERGP Research Demonstration Day at CLEREL- *Registration open!*

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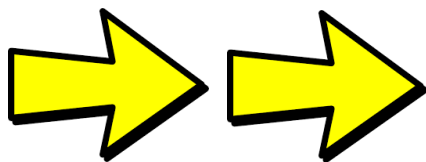
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The Lake Erie Regional Grape Program is a partnership between Cornell University, Penn State University and the Cornell Cooperative Extension Associations in Chautauqua, Erie and Niagara County NY and Penn State Extension in Erie County PA.



H-2A Meeting

Where: CLEREL

Time: 9:15am-12:30pm

July 11, 2022

LERGP will host an H-2A labor workshop at the Cornell Lake Erie Research and Extension Lab. Those interested in learning more about Ag-business labor challenges can attend the event at 9:00 a.m. on July 11th. The workshop provides an opportunity to share information on the H-2A program as the regional agricultural economy experiences challenges with labor supply and labor costs.

Ag service providers will be on-hand to share their expertise and services in the H-2A world. Growers looking to use this program for January of 2023 will need to start their application process now. When getting started, most growers seek out assistance to apply for, recruit or even manage and house H-2A labor.

As part of the event growers will share their experiences in transitioning to H-2A. Key to the success of the transition is changing management practices, recruiting labor and managing new recruits. The event will also focus on the challenges of an inexperienced workforce and techniques to control the costs associated with training and education.

The event will also provide an update on the current regional labor situation. The data that supports the forecast of future labor costs in the region as well as methods of sustainable agriculture that address the labor challenges without H-2A.

This is a free program but we ask that you register so we can prepare accordingly.

[REGISTER](#)
[Online](#)

or call Katie at 716-792-2800
ext 201 to let her know you will
be attending.



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2022 LERGP Coffee Pot Meeting Shedule

April 27, 2022	10:00am	Arrowhead Winery	12073 East Main St. North East, PA 16428
May 4, 2022	10:00am	Militello's Farm Supply	2929 Route 39 Forestville, NY 14062
May 11, 2022	10:00am 6:00pm	John Mason, Mason Farms Virtual Zoom Meeting	8603 West Lake Rd. Lake City, PA 16423
May 18, 2022	10:00am	Andrew Nichols	1850 Ridge Rd. Lewsiton, NY 14092
May 25, 2022	10:00am	Alicia & Zach Schneider	771 Bradley Rd. Silver Creek, NY 14136
June 1, 2022	10:00am	Knight Farms	18 Shaver St. Ripley, NY 14775
June 8, 2022	10:00am 6:00pm	TrolleyLine Vineyards Virtual Zoom Meeting	12029 Middle Rd. North East, PA 16428
June 15, 2022	10:00am	Dan Sprague Farm	12435 Versailles Rd. Irving, NY 14081
June 22, 2022		NO COFFEE POT MEETING	
June 29, 2022	10:00am	Betts' Farm	7365 East Route 20 Westfield, NY 14787
July 6, 2022	10:00am	Paul Bencal Farm	2645 Albright Rd. Ransomville, NY 14131
July 13, 2022	10:00am 6:00pm	Liberty Winery Virtual Zoom Meeting	2861 Route 20, Sheridan, NY 14135
July 20, 2022	10:00am	Beckman Farm	2386 Avis Dr. Harbor Creek, PA 16421
July 27, 2022	10:00am	Arrowhead Spring Winery	4746 Town Line Rd. Lockport, NY 14094



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Business Management

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

Cover Crops in Perennials: 2022

Sometimes the best place to start a discussion of cover-crops is with weed control and ooh man has this discussion changed. In 2016 we were discussing marestalk control, which is still a problem. Now, the economics of reducing round-up rates are the biggest issue in row middle management. What once was the cheapest game in town, if it worked, got turned inside out this year. Weather patterns can change quickly but when we talk about planning for cover crops in 7/1/2022, we are thinking this is going to be a dry year. The other theme of 2022 cover crops is consistent with the rest of the supply chain. Now that we are seeing prevented planting of corn due to weather, it is becoming possible that cover crop seeds will be in short supply. There was already concern that seed supplies might be low, but less cash crop acreage may intensify that pressure.

No analysis of 2022 cover cropping could start anywhere without acknowledging the challenges of post-emergent herbicide prices. The effective strategy of rely or cheetah type generic products for the control of marestalk has become more expensive. The cost of material was all over the place, ranging from \$30 – \$100 per acre sprayed. A cover crop program may reduce or eliminate the need for marestalk control in row middles. If prices continue at these levels two post emergent row middle applications using low rates of roundup vs typical roundup and cheetah would save at least \$60 per acre sprayed. These savings would not require the elimination of a spray, nor the avoidance of rely. It would only require using cover crops to eliminate vigorous weed growth that results in higher rates of herbicide used.

To increase the likelihood of realizing a savings by reducing marestalk problems it is probably necessary to plant a cover crop seed mix that is vigorous in early spring of 2023. One of the better blends to quickly

establish cover, control weeds and typically easier to establish is rye grass (\$15 Lb), radish (\$2.40 Lb), and clover (\$20 lb). This blend would cost about \$37.50 per planted acre or \$21 per grape acre. Switching rye grass to grain rye (\$10) would lower the materials cost to \$32 per planted acre or \$22 per grape acre. Buckwheat, at a \$2 per lb, can also provide a significant amount of ground cover and help



Picture 1: Seeding cover crops with a no-till seeder.

with weed suppression. It can be added to these mixes for no additional cost by reducing the amount of legume and other seed rates.

Clover, at traditional rates, remains the most expensive part of the mix. If cost is a concern, first reduce clover rates. If pH is below 5.5 or growing conditions are a concern, eliminating clover could be considered. Although they do not directly compete, seed rates of grasses or buckwheat should be increased slightly to compensate. These seed rates are fairly low and one concern without clover would be the general reduction in biomass. It costs very little to increase rye seeding rates.

The value of rye grass biomass is (at least) two-fold. Keeping the vineyard floor free of any competition between bloom and August 1st is very difficult. Many growers don't attempt to do this, other growers try and struggle. The costs of multiple round-up applications and the time required to cover acreage quickly enough creates challenges. Standing, chopped or crimped biomass that is thick enough continues to play a role in weed suppression.

Late termination of cover crops allows bio-mass to accumulate and also allows clovers to produce more than double the amount of nitrogen. Now that this year has turned dry it is an important reminder that pushing termination is a double edged sword. If we can use wet years to accumulate bio-mass, we can eventually increase water holding capacity. Delaying termination in dry years too long reduces water availability. This has the potential, depending on the severity of competition, to have dramatic costs. As applied extension research continues to evolve, hopefully we have a model to decrease the risk associated with delaying termination.

I haven't shown an economic benefit to cover crops, yet. We'll get there. In fact, we've already paid for most of it our net stands at: **-4.50** per acre in materials or nearly **-\$20.00** per acre when including planting costs. There is another herbicide area we have not looked at. The observations, as I mentioned before, is this system works better than other strategies that growers have tried. When cover crop termination is early in dry years, LERGP studies showed larger berries and bigger crops. As crop estimation looms, it would not be surprising to see vineyards with smaller berries. The benefit of superior weed control has previously shown an immediate impact of up to one ton per acre in yields, just in berry size. Modest increases in vine size also occurred, when termination was early. Potential yield for the following year improved due to increases in vine size. In previous research net revenue increased by \$216 per acre, it was very clear that these benefits were likely driven by specific weather conditions. In other words, we expect similar benefits once every 5-7 years to continue to justify making strong recommendations to use cover crops in vineyards.



Picture 2: Left vineyard has bare soil with full weed seed bank ready to grow in early spring. Right vineyard will have reduced weed pressure through terminated cover crop.

Grape trials looked at soil health benchmarks but discovered very little measurable change in the 3 years the trials were conducted. It remains challenging to place an economic benefit on improvements in soil health. We know in non-perennial systems cover crops show impacts on soil health that would have a real benefit on vine size. Trials in those crops lasted longer and are also planted over 100% of acreage rather than 60%. Cover crops also perform differently due to the length of growing season. Our potential to grow cover crops, without interfering with vine performance is a bit shorter than some other crops. While we do not have direct evidence of long lasting benefits in grapes, we have plenty of reason to suspect well managed cover crops can have long-term direct benefits.

Ernst seed supplies a lot of seed for grape growers in this region. They have about 11 choices of clover, 7 choices of perennial rye grass and 26 other legumes, among other choices. The internet and other seed providers have even more choices. Suffice to say the very basic seed mixes discussed above are only the tip of the iceberg. Things can get complicated quickly if you head down the rabbit hole. That rabbit hole can be beneficial and as growers learn more they tend to adapt to mixes that do best on their farm specific soil types. Sometimes these mixes will save growers \$1 - \$3 per acre. Oftentimes they'll get better results and spend a bit (or a lot) more.

Lessons learned: From Local Growers and Here at CLEREL

I would avoid legumes all together if soil pH is below 5.0. If soil conditions do not allow for successful stands a legume is not justified. Almost all cover crops will struggle in low pH conditions. Radish might help move lime down into the soil and remains inexpensive. Radish and an inexpensive grain or grass might be a better option. When soil pH falls below 4.7 it might make more sense to avoid cover crops altogether.

Crimping and rolling offered a real promise to improve the efficiency of cover crops. For the most part integrating the practice into vineyards has been challenging. By the time crops are ripe enough to crimp, termination should have already happened. The lack of flexibility in termination timing is challenging. Using a crimper in wetter years or on healthier/heavier soils might make sense. Buckwheat is a good back up to rye grass. It's allelopathic effects can temper problematic weeds. It can also outcompete other seeds in the seed mix. It makes sense to lower seed rates with buckwheat, particularly legumes. This may allow you to control weeds less expensively. It may also reduce the progress

toward other goals such as soil health and nutrient recycling. Buckwheat is also an excellent stand-alone crop for modest erosion prevention. It can be used in June and July to hold tilled soil together. While that shouldn't be a regular practice we all know that occasionally a vineyard floor is disturbed. One additional comment on buckwheat for 2022 is



Picture 3: Crimper roller is an inexpensive tool that quickly terminates cover crop. Flexibility of timing has been a real issue for perennial crops.

that seed availability has become challenging. Prices are also significantly higher.

The “rabbit hole” of seed mixing makes sure that it’s difficult to write about the economics of cover crops. Growers find different prices through different supply channels, then there is good reason to change or experiment with seed rates. On top of that, as you start blending, seed rates will need to change. All of a sudden we have a ton of variables that change performance and costs. However, in the pursuit of bio-mass, these mixes will outperform single species. This will be particularly obvious when you start to have variable performance due to soil types, seeding dates and weather. Rye grass should technically excel at bio-mass but other grasses and grains can outperform rye grass in the right conditions.

Given the market conditions of high grape prices and extremely high post-emergent weed control costs, I fully expect to see a continued growth in the use of cover-crops. If post-emergent weed control costs remain elevated (even just 100% higher than 2021), it seems like a rapid adoption of the practice would take hold.

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Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

How Much Fruit is Hanging on Your Vines?

Happy 4th of July to you and your families! I hope that you were able to get to relax a little at this time, enjoy the great weather, and loved ones in a safe and healthy way.

It is Crop Estimation time of year again. Hopefully you have all been utilizing your LERGP Viticultural Planning Calendar to record phenological data from your own vineyard blocks. In terms of crop estimation, your bloom date in your blocks is used to determine when you should be taking crop estimation samples. Our bloom date at CLEREL was officially on June 8, 2022, which is 6 days before the historical average of June 14th. Dr Terry Bates' Juice Quality Project research gave us the Rule of Thumb that for every three days earlier than the average historical bloom date, your vines can ripen an extra ton per acre due to the longer growing season and available limiting factors. Growers love to adhere to this Rule of Thumb. LERGP is dedicated to provide you with research-based information for you to make management decisions in your vineyards for efficiency and sustainability, which hopefully translates into profitability. This is where it is crucial to crop estimate.

Historically, using the mean (average) fruit mass from random samples in a vineyard to arrive at a whole-field crop estimate predicts yield to within 15-20%. Accurate estimations are hindered by the inability of a relatively low number of random samples to capture the variation in vine growth and production. Improving the crop estimation accuracy by spatially stratified sampling captures the variation and provides the opportunity for vineyard managers to develop and implement a crop load management plan that maximizes fruit quality and promotes perennial vineyard health and crop potential. Improved crop estimations also increase the efficiency of harvest logistics for growers and processors alike.

For processors, errors in yield prediction have major effects for the planning of delivery schedules, allocation of tank space and fermentation or concentration equipment, staffing of personnel and negotiation of contracts with growers for the future. Crop load management is dependent on accurate spatial assessment of vine size and crop. For growers, making crop load management decisions that ensure adequate ripening of fruit and promote perennial vineyard health is futile without an accurate estimate of what harvest yield will be. This estimate must be made while there is still time in the season to see benefits from correcting crop imbalances.

I have asked many of you who attend our Coffee Pot meetings whether you do crop estimations. Many of you have reported that you do not crop estimate and the reasons for not doing so were many, but mostly it is time. I have been told that you have calibrated your 'eye-ball' method on the vines and have a pretty good guess as to how much fruit is hanging, which is a method that relies more on luck. However, many of you have also stated that with differences in pruning practices that have evolved overtime, it is getting increasingly difficult to 'eye-ball' it. The process of collecting information and doing the math can be daunting and there are so many other management decisions that have to occur during the growing season, but crop estimation can improve your understanding of the vineyard blocks, vine health, and future fruit quality. There is simply too much at stake financially to rely on luck.

The research has shown that the first two weeks after veraison is when most of the ripening occurs in Concord fruit. The best case scenario to ripen grapes in those two weeks is to have great weather that is warm and sunny and low crop load. The worst case scenario is when there is cold and cloudy weather and high crop load. This is where knowing what size crop is hanging on your vines can benefit your management decisions; knowing where that one block you can let the fruit hang longer is and another block you may need to crop thin is valuable information.

Crop load can also affect vine health. Overcropping a vine has many well documented negative impacts on fruit and vine quality including reduced and delayed fruit ripening, potential vine stress that may lead to increased susceptibility to winter injury, disease problems especially late season rots and other significant problems. This is very evident this season in blocks that were overcropped last year with the large yields and in those blocks that never were harvested due to lack of quality standards. The vines came back weaker and the difference in canopy development from balanced vines was noticeable. Undercropping can also affect quality as well as cheat you of valuable revenue. For this reason, I am including the Crop Estimation article that Dr. Terry Bates wrote for our 2003 Newsletter. The research and science has not changed.

What has changed is the that now we have more tools in our toolbox to aid in a more accurate crop estimation. With the use of sensors, and early adoption of the sensor technology, growers are able to take crop estimation samples from data-driven management zones increasing accuracy. You do not need to go out and buy NDVI sensors to utilize sensor technology. With the MyEV tool, your eyes can be the sensor once more. No one has more knowledge of the vineyard or a greater incentive to achieve maximum sustainable production of ripe grapes than the vineyard owner and manager. Estimating your crop is essential to help make decisions for both the grower and the processor. Terry Bates created short tutorials on how to use the MyEV Data Collector Tool to guide you in your data collection efforts. Using this tool, you can walk your vineyards and make note of where the crop is heavy and where it is lighter then visualize it on a map. That map can guide your sampling efforts to capture the variation and improve your crop estimation as accurately as possible. A grower is usually familiar with variability in a specific vineyard block and knows that different portions could be categorized as “high,” “moderate” or “low” producing. It is very important to capture that variability for a better crop estimation. Randomly sampling your blocks may not capture the variation that occurs in your vineyards, however, stratified samples from known areas of high, medium, and low-vigor vines will increase your accuracy. With the MyEV Tool, you can drive down your vineyard row, use your phone to collect data, then visualize that data collected in the form a map to help guide your management practices. Please click the link for more information [Click Here](#). Use the maps that were created from your data collection to direct you to the areas of variation so that you can then employ the manual crop estimation technique provided in the included Concord Crop Estimation Guide or pick a region that represents all variation patterns and use the mechanical crop estimation portion of the guide.

The LERGP is committed to providing researched based management tools and guidance to aid our region stakeholders to get the most out of their vines in a sustainable way. This Concord Grape Crop Estimation How-To Guide is an applied science management tool that will walk one through the crop estimation process for manual sampling and mechanical sampling. Through the crop estimation work of Dr. Terry Bates, the Crop Estimation and Thinning Table provided below was developed. The “Crop Estimation Chart” referred to in these steps can be found under the Crop Estimation Table tab, [Click Here](#).

Bloom date and days after bloom:

This system is based on bloom date, and in order to be accurate you need to know when your grapes

were at 50% bloom. The 50-year average date for 50% bloom is June 14th, and this year CLEREL called bloom on June 8, 2022. Count off starting at your bloom date and accrue the respective days-after-bloom (DAB). On the chart the DAB is found in the shaded “Time of Season” and not to be confused with “% of Final Berry Weight” directly below.

Row Spacing:

Like bloom date, you need to know your vine spacing. When using your harvester to mechanical crop estimation, row spacing determines the length of a row that will equal 1/100th of an acre. The wider the row, the shorter the sampling length. For example, sampling a block with a 10' row you will need to clean pick 45.9 feet. If your rows are at 7.5' spacing, you need to clean pick 58.1 feet. If you have 9-foot row spacing and your panels are at 24 feet then this should be easy. However, it is best to determine your row spacing and cut a length of rope to guide your sampling lengths rather than rely on post lengths that have been changed out over the years.

Sampling:

Once the row spacing and sample distance is calculated, clean pick and weigh the samples. The more samples you take, the better your prediction will be. For manual crop estimation, it helps to take samples from areas of known variation across the vineyard. For example, take 2-3 samples from high vigor, medium vigor, and low vigor sections of the vineyard and apply your predictions appropriately to those sections. If you are using a harvester to clean pick panels walk behind afterwards to assess how many grapes are still on the vine/or that are on the ground.

Using the Chart:

Once you have the sample, the chart does the rest of the work for you. Follow the corresponding DAB down and the respective weight over and you have the estimated tons/acre at harvest. For example, let's say it's July 25th or 40 DAB (bloom on June 15th) and the average from 4 samples weighs 100 pounds. I would have an estimated 8.3 tons/acre potential crop.

Things to keep in mind:

If you have an accurate bloom date for your vineyard, follow the crop estimation chart to predict final harvest weight. If you're not and you are using the actual berry weight samples to come up with your multiplication factor, be reasonable in what you think your final berry weight will be. Some vineyards tend to have smaller average weights and some tend to be larger – and you should be starting to get an idea where your vineyard fits.

Getting it right is important. Underestimating crop potential can lead to delayed harvest waiting for the grape to ripen and the BRIX to rise. Overestimating a crop load may result in unwanted thinning or



Length of rope used to guide harvester on distance of sample (determined by row width).

Having an accurate crop estimation can help you make many cultural practice decisions through the rest of the season. The following is a break-down of the process.



Length of rope cut to row spacing
(Ex. Row spacing at 9" this rope is 48.4")

1. Clean pick (harvester or by hand)
1/100 of an acre. Length of sampled area is determined by row spacing.



2. Weigh 1/100 acre sample
(Ex. Sampled weighed 68.5 lbs)

[illegible]

3. Use Dr. Bates: Crop Estimation and Thinning Table (Ex. Sample weighed 68.5 lbs 30 days after bloom estimation table show 6.85 tons/acre at final berry weight)

Crop estimating at 30 DAB for 'Concords' is common for most growers. When the berries are at 50% of the final berry weight (like the example shown above) all you needed to do for final estimation is shift the decimal point over one place. However, the estimation table will work throughout the season. One thing to keep in mind when using the chart is to double check you are using time of season (DAB) in the shaded area to match up the column below.

Crop Estimation Protocol

Collecting a little bit of information from the vineyard during the growing season can greatly improve your prediction of final yields with better accuracy than the eyeball method. Know your Bloom Date. Calculate how many vines equate to 1/100th of an acre (use the Table below) and Days After Bloom (DAB).

Yield Components

Information you need to collect for an accurate crop estimate include:

1. Vines per acre (real count, not an estimate)
2. Spatial Maps if Available to direct sample collection
3. Know how many Days After Bloom when samples were taken
4. Average lbs fruit per vine
5. Provided Concord Crop Estimation Table

The math is easy:

vines per acre x lbs of fruit per vine x multiplier (2 if 30 DAB)/2,000 (convert tons) = yield per acre

Example: Concord planted

- **Vines per acre.** If the number is not known already, simply multiply the distance between the vines by the distance between the rows, then divide 43,560 (number of square feet in an acre) by that number to get the number of vines per acre. **In 6' x 9' row spacing (9x8 = 72); 43,560/72 = 605**
- **Clusters per vine.** 30 DAB collect and count the clusters on samples from areas of known variation across the vineyard. For example, take 2-3 samples from high vigor, medium vigor, and low vigor sections of the vineyard and apply your predictions appropriately to those sections, spatial maps can direct you to management zones. Calculate the average number of clusters per vine based on these counts. If you are using a harvester to clean pick panels walk behind afterwards to assess how many grapes are still on the vine/or that are on the ground. **Let's say 50 clusters per vine.**
- **Average cluster weight.** Weigh each sample taken above, be sure to subtract the weight of the bucket or bin used from total weight. **Let's say our average sample weight is 4.134 lbs. Divide by 50 clusters = 0.08lbs/cluster**

Let's Do the Math:

vines per acre (807) x clusters per vine (50) x 30 DAB ave. cluster weight (0.08lbs) x 2 = 807 x 50 x 0.08 x 2 = 6,456 lbs/acre (2,000 lbs/ton)

Crop Estimation is 3.23 tons/acre

Other Cultivars: clusters per vine x vines per acre x lag phase cluster weight x multiplier = yield per acre

Mechanical Crop Estimation

Like bloom date, you need to know your vine spacing. Row spacing determines the length of a row that will equal 1/100th of an acre. The wider the row, the shorter the sampling length. For example, sampling a block with a 10' row you will need to clean pick 45.9 feet. If your rows are at 7.5' spacing, you need to clean pick 58.1 feet. If you have 9-foot row spacing and your panels are at 24 feet then this should be easy. However, it is best to determine your row spacing and cut a length of rope to guide your sampling lengths rather than rely on post lengths that have been changed out over the years.

Sampling:

Once the row spacing and sample distance is calculated, clean pick and weigh the samples. The more samples you take, the better your prediction will be. It also helps to take samples from areas of known variation across the vineyard. For example, take 2-3 samples from high vigor, medium vigor, and low vigor sections of the vineyard and apply your predictions appropriately to those sections. If you are using a harvester to clean pick panels walk behind afterwards to assess how many grapes are still on the vine/or that are on the ground.

Using the Chart:

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Dr. Terry Bates: Crop Estimation and Thinning Table: 7/16/2003

Pounds of Fruit Removed in 1/100th of an Acre	Time of Season														
	20DAB	25DAB	30DAB	40DAB	50DAB	Veraison					Harvest				
	% of Final Berry Weight														
	20	25	30	35	40	45	50	55	60	65	70	75	80	90	100
10	2.5	2.0	1.7	1.4	1.3	1.1	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5
20	5.0	4.0	3.3	2.9	2.5	2.2	2.0	1.8	1.7	1.5	1.4	1.3	1.3	1.1	1.0
30	7.5	6.0	5.0	4.3	3.8	3.3	3.0	2.7	2.5	2.3	2.1	2.0	1.9	1.7	1.5
40	10.0	8.0	6.7	5.7	5.0	4.4	4.0	3.6	3.3	3.1	2.9	2.7	2.5	2.2	2.0
50	12.5	10.0	8.3	7.1	6.3	5.6	5.0	4.5	4.2	3.8	3.6	3.3	3.1	2.8	2.5
60	15.0	12.0	10.0	8.6	7.5	6.7	6.0	5.5	5.0	4.6	4.3	4.0	3.8	3.3	3.0
70	17.5	14.0	11.7	10.0	8.8	7.8	7.0	6.4	5.8	5.4	5.0	4.7	4.4	3.9	3.5
80	20.0	16.0	13.3	11.4	10.0	8.9	8.0	7.3	6.7	6.2	5.7	5.3	5.0	4.4	4.0
90	22.5	18.0	15.0	12.9	11.3	10.0	9.0	8.2	7.5	6.9	6.4	6.0	5.6	5.0	4.5
100	25.0	20.0	16.7	14.3	12.5	11.1	10.0	9.1	8.3	7.7	7.1	6.7	6.3	5.6	5.0
110	27.5	22.0	18.3	15.7	13.8	12.2	11.0	10.0	9.2	8.5	7.9	7.3	6.9	6.1	5.5
120	30.0	24.0	20.0	17.1	15.0	13.3	12.0	10.9	10.0	9.2	8.6	8.0	7.5	6.7	6.0
130	32.5	26.0	21.7	18.6	16.3	14.4	13.0	11.8	10.8	10.0	9.3	8.7	8.1	7.2	6.5
140	35.0	28.0	23.3	20.0	17.5	15.6	14.0	12.7	11.7	10.8	10.0	9.3	8.8	7.8	7.0
150	37.5	30.0	25.0	21.4	18.8	16.7	15.0	13.6	12.5	11.5	10.7	10.0	9.4	8.3	7.5
160	40.0	32.0	26.7	22.9	20.0	17.8	16.0	14.5	13.3	12.3	11.4	10.7	10.0	8.9	8.0
170	42.5	34.0	28.3	24.3	21.3	18.9	17.0	15.5	14.2	13.1	12.1	11.3	10.6	9.4	8.5
180	45.0	36.0	30.0	25.7	22.5	20.0	18.0	16.4	15.0	13.8	12.9	12.0	11.3	10.0	9.0
190	47.5	38.0	31.7	27.1	23.8	21.1	19.0	17.3	15.8	14.6	13.6	12.7	11.9	10.6	9.5
200	50.0	40.0	33.3	28.6	25.0	22.2	20.0	18.2	16.7	15.4	14.3	13.3	12.5	11.1	10.0

Row Spacing determines length of 1/100th of an acre
10.0 feet row spacing = 43.5 feet = 1/100th of an acre
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7.5 feet = 58.1 feet = 1/100th of an acre

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43, 560 square feet per acre
Divide by row spacing and then
divide by 100 to get 1/100th of an acre

Example:
A grower has 9 foot row spacing and clean picks 48.4 feet at 25 days after bloom.
The fruit weighs 80 pounds and the grower estimates that the berries are between
35% and 40% of final berry weight. According to the table, the crop estimate is
between 10.0 and 11.4 tons per acre.

Disclaimer:
This table gives the relationship between time of season and % final berry weight on
an average year. Year to year variability in weather related berry growth adds error to
this table. Information on current year berry growth can be obtained from the
Fredonia Vineyard Lab (or) it is strongly suggested that individual growers start
collecting berry weight information from their own individual vineyard blocks.

Figure 1. Dr. Terry Bates Concord Crop Estimation and Thinning Table 7/16/2003

Clear and accurate knowledge of vineyard conditions can result in long-term sustainable cultivation of grapes for juice and wine production. As you are all aware, these conditions vary due to inconsistent weather from season to season and within seasons, especially in the eastern viticultural regions of North America. Predicted climate change may increase this variability through increased chances of late spring and early fall frost events; increased and variable summer heat accumulation (or GDD); and increased frequency of rain and drought events. The future economic survival and success of the grape and wine industries depends on the ability to understand the variability of these conditions, and to take them into account when making management decision to maintain economic yields and continue to improve fruit quality.

Important: Follow up your crop estimates with accurate harvest estimates to confirm your accuracy. To further help guide you through this process, there are many LERGP podcast videos located on YouTube. I have listed many of them on the next page.

Berry Curve - a vital piece of the Crop Estimation puzzle - LERGP Podcast #81

Jackie talks about how knowing how the berries develop through the season will help you to predict what your final yield will be at harvest.

Crop Estimation at 30 Days After Bloom in Concord Grapes - LERGP Podcast #77 - youtube.com

It's approximately 30 days after bloom for Concord grapes in the Lake Erie Region. Terry encourages growers to go out and get an estimation of your crop. Here's how! For more information visit ...

Crop Estimation Financials - LERGP Podcast #27

Kevin and Tim discuss the financials of Crop Estimation

Terry Crop Estimation - LERGP Podcast #25 - YouTube.com

Terry explains the process of crop estimation. This video is unavailable. Watch Queue Queue

Please visit our website www.lergp.com for more information, or feel free to call at (716)792-2800, or email me at jjr268@cornell.edu.

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Spotted Lanternfly Found in West Seneca-

On July 5th, a report of a dead adult Spotted Lanternfly was made in West Seneca. We are working on gathering a full report and accurate information on this. However, in the interim, please remain diligent in your scouting efforts in and around your vineyards.

We have Spotted Lanternfly traps set out in Sheridan, NY and other sites around Chautauqua County near vineyards that are close to high traffic areas to monitor for the invasive species. We have yet to find one. That does not mean that it isn't here. The life cycle of this planthopper at this point in the season can be found in the 2nd to 3rd instar. Please see the pictures below of the various stages of Spotted Lanternfly for reference.

If you find Spotted Lanternfly in New York:

*Take pictures of the insect, egg masses, or infestations.

*If possible, collect the insect. Place in a bag and freeze, or in a jar with rubbing alcohol or hand sanitizer.

*Note the location (street address and zip code, intersecting roads, landmarks, or GPS coordinates)

*Send the information to NYS. Dept. Agriculture and Markets in one of these ways:

-[Spotted Lanternfly Sighting Report Form](#)

-Email pictures and location to spottedlanternfly@agriculture.ny.gov



Updates and Information

Kimberly Knappenberger, Viticulture Assistant, LERGP

Vineyard Improvement Program

We are in the last year of the Vineyard Improvement Program which means that any removals/replants need to be finalized this year and all expenses reported by January 2023. If you are thinking of removing a Concord vineyard please contact Kim at ksk76@cornell.edu or 716-792-280 ext 209. Currently we will be able to reimburse 50% of removal expense, but it is unlikely that we will be able to reimburse replant expenses (25%) due to the time limitation. To learn more about how the program works visit <https://lergp.com/about-vip>. If you would like to apply click on VIP Application or click this link <https://lergp.com/vip-application>.



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NEWA

As we are flying through this growing season just a quick reminder to keep an eye on newa.cornell.edu. Here you can not only find the current weather conditions, but you can find historical weather data, the growing degree days for grape berry moth, and the models for Phomopsis, powdery mildew and black rot with suggestions for disease management. Just click on Grape Diseases or Grape Berry Moth to view the models. Be sure to enter the nearest station in the station selection bar and for the Grape Berry Moth model check to see if the wild grape bloom is correct for your location.

Find a Weather Station
for up-to-date IPM forecasts and weather data.

Select or search by weather station
Portland, NY

Portland Overview
Courtesy of Lake Erie Regional Grape Program

At 8:08 AM today
74°F
Brew 80°F Degree Days since January 1: 942
Relative Humidity: 55%
Dew Point: 57°F
Wind Speed: 5 mph

5-Day Weather Forecast

Thursday 6/30/2022	Friday 7/1/2022	Saturday 7/2/2022	Sunday 7/3/2022	Monday 7/4/2022	Tuesday 7/5/2022
81 / 59	82 / 71	75 / 66	76 / 65	77 / 69	76 / 68

IPM & Crop Tools
All Tools →

[Grape Berry Moth](#)
[Grape Diseases](#)
[Cachinolate Thinning](#)
[Calyptrocline](#)
[Leaf Spot](#)

Weather Tools
All Tools →

[About Weather Stations](#)
[Weather Data Query](#)
[DD Calculator](#)
[Regional Radar](#)
[Buy a Weather Station](#)
[Drought Monitor](#)

Results for Portland, NY
Latitude: 42.38 Longitude: -79.49 Elevation: 738 ft
Last download: 6/30/2022, 9:00 AM

Wild Grape Bloom
06/09/2022

Wild Grape Bloom date above is estimated based on degree day accumulations or user input. Enter the actual date for blocks of interest and the model will calculate the results more accurately.

Accumulated degree days (Base 47.14°F SA) wild grape bloom through 6/30/2022: 669

Results Table
Download CSV

DATE 2022	Degree Days			
	Rain	DD	DD	DD
June 28	11	962	15	624
June 29	15	977	20	644
June 30	20	997	25	669
July 1	26	1023	29	696
July 2	20	1044	24	722
July 3	21	1064	24	745
July 4	23	1087	25	770
July 5	22	1109	25	795

Results for Portland, NY
Latitude: 42.38 Longitude: -79.49 Elevation: 738 ft
Last download: 6/30/2022, 9:00 AM

Grape Disease Infection Events
Download CSV

DATE 2022	Phomopsis	Powdery Mildew	Black Rot
June 28	No	No	No
June 29	No	No	No
June 30	No	No	No
July 1	No	-	No
July 2	No	-	No
July 3	No	-	No
July 4	No	-	No
July 5	No	-	No

Phomopsis - calculates when weather conditions may allow spores to infect susceptible tissue.
Powdery Mildew - calculates primary infection when weather conditions may allow overwintered, primary spores (inoculum) to infect susceptible tissue. (any from bud break) and pre-bloom. Once primary infections have occurred, secondary infection (spores) are possible every day. The threat is greatest when temperatures are between 65 to 95 degrees F and is particularly high when conditions are cloudy.
Black Rot - calculates when weather conditions may allow spores to infect susceptible tissue.

Phenological stage: 1st Portland 2

Choose the phenology stage for the grape variety of interest to display management messages. Concord grape phenology is estimated by the model from historical records for the variety.

Disease
Disease Management

Phomopsis
Fruit infections can occur from early bloom through the post-bloom period. They remain dormant until severe frost or deep frosts in late autumn. Black rot also remains dormant during this period. Monitor infection events and manage fungicide protection, especially on susceptible varieties, in light of forecasts, in tandem with a history of Phomopsis.

The Cornell Lake Erie Research and Extension Laboratory Research Demonstration Day

Agenda

8:30 AM – Registration and Check In

9:00-10:45 AM – Welcome and Indoor
Flash Talks



Dr. Terry Bates, Director of the Cornell Lake Erie Research and Extension Laboratory, will give the Welcome Opening, history of CLEREL, and Research Overview.

- Dr. Lynn Sosnoskie, Assistant Professor, School of Integrative Plant Science Horticulture Section Cornell AgriTech, will discuss her work with the weed precision spot sprayer.
- Dr. Rob Chancia, Post Doctoral Researcher, Rochester Institute of Technology, Chester F. Carlson Center for Imaging Science, to discuss work on sensor imaging for nutrient deficiency detection.
- Dr. Abhisesh Silwal, Carnegie Mellon University, Robotics Institute Project Scientist, will introduce his work with the robotic pruner.
- Nick Gunner, CEO, Chief Platform Engineer & Lead Designer for Orbitist, to discuss the [Efficient Vineyard Project](#) and the [MyEV tool](#).
- Dr. Debbie Aller, New York Soil Health Alliance Extension Associate, will discuss sustainable soil management practices.
- Nicole Kubiczki, Resource Soil Scientist for the Natural Resources Conservation Service (NRCS), will discuss what to expect at our soil pits.

10:50-12:30 PM - Vendor Show and Lunch

12:30-4:00 PM – Afternoon Tour of Research Blocks and NRCS Gravel and Heavy Soil Pit
Presentations

[Register On-line Here](#)

or mail in the hard copy form on next page.

2022 SUMMER DEMONSTRATION CONFERENCE REGISTRATION FORM

to be held at CLEREL
on Tuesday, August 2, 2022

Deadline for registration is Friday, July 29, 2022

Name (1st attendee) _____ \$ _____

Farm Name _____

Address, City, State, Zip Code _____

Phone _____ E-mail _____

Are you enrolled in Lake Erie Regional Grape Program (LERGP)? Yes _____ No _____

REGISTRATION FEES	
LERGP Member attendee	\$ 25.00
Non- member	\$50.00

Additional Attendees: (Member/non-member fees apply)

*Please add a **\$10.00 late fee** for each reservation made after July 29, 2022.

TOTAL \$ _____

Please make check payable to **LERGP (Lake Erie Regional Grape Program)** and mail to: Kate Robinson
(US funds only) LERGP
6592 W Main Rd
Portland NY 14769

Name _____ NY DEC/PA PDA NUMBER _____

Name _____ NY DEC/PA PDA NUMBER _____

Name _____ NY DEC/PA PDA NUMBER _____

<u>Date Ck. Rec'd</u>	<u>Amount</u>

Call Kate at 716-792-2800 ext 201 with any questions,
Or e-mail at kjr45@cornell.edu.

Dr. Terry Bates: Crop Estimation and Thinning Table: 7/16/2003

Pounds of Fruit Removed in 1/100th of an Acre	Time of Season															Harvest
	20DAB		25DAB		30DAB		40DAB		50DAB		Veraison					
	20	25	30	35	40	45	50	55	60	65	70	75	80	90		
% of Final Berry Weight																
10	2.5	2.0	1.7	1.4	1.3	1.1	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5	
20	5.0	4.0	3.3	2.9	2.5	2.2	2.0	1.8	1.7	1.5	1.4	1.3	1.3	1.1	1.0	
30	7.5	6.0	5.0	4.3	3.8	3.3	3.0	2.7	2.5	2.3	2.1	2.0	1.9	1.7	1.5	
40	10.0	8.0	6.7	5.7	5.0	4.4	4.0	3.6	3.3	3.1	2.9	2.7	2.5	2.2	2.0	
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130	32.5	26.0	21.7	18.6	16.3	14.4	13.0	11.8	10.8	10.0	9.3	8.7	8.1	7.2	6.5	
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180	45.0	36.0	30.0	25.7	22.5	20.0	18.0	16.4	15.0	13.8	12.9	12.0	11.3	10.0	9.0	
190	47.5	38.0	31.7	27.1	23.8	21.1	19.0	17.3	15.8	14.6	13.6	12.7	11.9	10.6	9.5	
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Lake Erie Regional Grape Program Team Members:

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This publication may contain pesticide recommendations. Changes in pesticide regulations occur constantly, and human errors are still possible. Some materials mentioned may not be registered in all states, may no longer be available, and some uses may no longer be legal. Questions concerning the legality and/or registration status for pesticide use should be directed to the appropriate extension agent or state regulatory agency. Read the label before applying any pesticide. Cornell and Penn State Cooperative Extensions, and their employees, assume no liability for the effectiveness or results of any chemicals for pesticide usage. No endorsements of products are made or implied.

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Contact the Lake Erie Regional Grape Program if you have any special needs such as visual, hearing or mobility impairments.

CCE does not endorse or recommend any specific product or service.

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