

Cornell Cooperative Extension Lake Erie Regional Grape Program





Crop Update - July 2, 2020

Concords on July 2, 020 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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Kevin Martin, Penn State University, LERGP, Business Management Educator

Debt: Capital Shopping During Unusual Times

Extremely low interest rates are the new normal. "New normal", those are famous last words for any business analyst. I prefer to look at trends of the last decade in historical context. Rather than assuming interest rates will be historically low forever, it is safe to say long-term fixed rates will eventually revert to the mean. What to do about that right now is a different question.

Agricultural loans from SBA are new. The advance has been great, providing up to \$10,000 to farms to deal with COVID and any expenditures that owners/managers see value in. The advance, as we have mentioned is not repaid. After getting an advance farms and other business qualify for loans. Interest rates seem low but still are higher than originally advertised. Combined with current market conditions, growers looking for additional access to credit should shop around. Fixed rate loans backed by real estate are extremely inexpensive right now.

For many growers this might mean cooperative lending through Farm Credit. At this time loans for the longest possible term at a fixed interest rate are generally recommended. Restrictions on early pay-back might change that calculation and recommendation. If it can be paid back anytime the grower wants to pay it back, this is the best deal for additional capital right now. These recommendations do speak to broad market conditions. Individual results for variable rate loans may be different. Currently, the difference in rates is too small. Furthermore, we all know which way rates are headed eventually. In the short-term it is always possible that rates continue to fall. In the long-term we know rates will rise. In the medium term it is much more likely they'll rise than fall.

Chart 1 shows how small the variation in rates is between short and long-term borrowing. The spread between the 10-year and 2-year treasury notes is a good illustration of the deal in long-term borrowing right now. That spread can hit zero, or even fall below 9 during a recession. Right now we are below .5. Typically, anything above 2 is when short-term borrowing might make sense.

Take a look at chart 2 and you can see similar trends on the consumer side. 5/1 adjustable mortgages command virtually the same interest rate as a 30 year fixed. In fact, 5/1 mortgages have occasionally been more expensive than 30 year fixed rate loans. These trends are supported in government debt, corporate debt, small business debt and consumer debt. This kind of inexpensive debt can dramatically increase opportunities for next generation farms. Vineyards and farms are capital intensive. If capital is inexpensive, risk is reduced for growing operations and expansions are much more likely to be successful.

Whether you're looking to borrow through SBA, USDA, personal debt or business debt make sure you think critically about why you are borrowing money and how that debt will grow the ROI of your operation. Once you can justify that, the next step is to find the most efficient debt you can. Right now, your instinct might be wrong because the cheapest debt available is not what is normally the cheapest debt. Take advantage of these unusual times, rather than passing up historic opportunities.





Chart 2





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Using the Concord Estimation Chart

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

I wanted to give you a heads up on crop estimation. At the Cornell Lake Erie Research and Extension Laboratory in Portland, NY, we called bloom (50 % cap fall) on June 14, 2020. It is important to record your bloom date each year to know when to get out and take measurements for crop estimation, which is an important component of commercial grape production. I, and others, have written on this topic a few times and you can find articles in the archived versions located here: https://lergp.com/archived-newsletter-and-crop-updates.

I am simply copying and pasting the Concord Grape Crop Estimation Guide, based off of Dr. Terry Bates' research, and the information on how to use that guide. We have all of this information listed as a resource on https://lergp.com/. At CLEREL we need to do our crop estimations on July 14th, 2020 and that date will creep up on us fast. So I wanted you to be armed with the tools you need before your 30-days post bloom date creeps up on you. Please note that if you do not know your bloom date, you can estimate it using our information and your recollections of when bloom was happening in your blocks. I would suggest keeping Viticultural records this season to begin to recognize trends in your own business.

The "Crop Estimation Chart" referred to in these steps can be found under the Crop Estimation Table tab, <u>https://lergp.com/crop-estimation-table</u>, as well as at the end of this article which can also be found at <u>https://lergp.com/using-the-concord-estimation-chart</u>.

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 14, 2020. 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. 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:

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. Be reasonable – it is unlikely (highly unlikely) that your Concord vineyard will average 4.0g berries at harvest even if your 30 DAB weight was 2.0 g.

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 unnecessary expensive chemicals being used to care for a crop that is not there.

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

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.

Concord Crop Estimation Guide

Collecting a little bit of information from the vineyard during the growing season can greatly improve your prediction of final yields wit better accuracy than the eyeball method. Know your Bloom Date, Space Between Vines, and Space Between Rows. Calculate how many vines equate to 1/100th of an acre, and know how many Days After Bloom (DAB) samples were collected.

Example:

- **Row and Vine Spacing.** If 9' between rows the table provides the 1/100th acre calculation for you which equals **48.4 feet**.
- How many vines are in 48.4 feet if vines are spaced 8 feet apart? 48.4/8=6.05 vines (round down to 6)
- Use Spatial Map to direct Sample locations to capture vineyard variation.
- Clean Pick Fruit from Calculated 1/100th Acre (In this example it equals 6 vines form 48.4/8). Clean pick fruit from 2 vines from high vigor zone, 2 vines from medium vigor, and 2 vines from low vigor.

- Total Weight of Ibs of Fruit Collected. Weigh each sample taken above, be sure to subtract • the weight of the bucket or bin used from total weight. Sum weights from all 6 samples to get total weight.
- Consult<u>Table</u> to Find Corresponding Crop Estimation.

MECHANICAL CROP ESTIMATION

Cut a length of rope to guide your sampling lengths, lay it down along the row, clean pick with the harvester the length of the rope, weigh lbs of fruit collected. 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 fruit weighs 100 pounds. Crop estimated 8.3 ton/acre potential crop.

Click here for a pdf of this information.

Crop Estimation and Thinning Table

	Dr. Terry Bates: Crop Estimation and Thinning Table: 7/16/2003														
						Time of Season									
	20DAB 25DA		AB		30DAB	4	40DAB	50DAB	1	Veraison		ł	larvest		
	% of Final Berry Weight														
Pounds of Fruit															
Removed in 1/100th of					+										
an Acre	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
10.0 feet row spacing = 43.5 feet = 1/100th of an acre 9.5 feet = 45.9 feet = 1/100th of an acre 9.0 feet = 48.4 feet = 1/100th of an acre 8.5 feet = 51.2 feet = 1/100th of an acre 8.0 feet = 54.45 feet = 1/100th of an acre 7.5 feet = 58.1 feet = 1/100th of an acre Calculation 43.560 square feet per acre				Disc Disc This an a this	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										
Divide by row spacing and then divide by 100 to get 1/100th of an acre				Free	Fredonia Vineyard Lab (or) it is strongly suggested that individual growers start collecting berry weight information from their own individual vineyard blocks.										

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

In the Vineyard (7-2-20) -

<u>Grape Berry Moth</u> – Webbing in clusters was not difficult to find while scouting vineyards this week in high risk Concord sites and a Delaware and Fredonia block. Red discoloration of injured berries is also visible now in Concords (Figure 1). The ability to easily find GBM webbing in clusters this early in the season is a red flag indicating that GBM pressure is likely to be high this season. In addition, if the temperatures are higher than average throughout the season, like this week, then a fourth generation of GBM is expected.



Figure 1. Grape berry moth larva entry hole and red discoloration of berry due to injury. Photo – Andy Muza, Penn State.

TIME to SPRAY

Over the next week, temperatures will range

from 85-91degrees F. from Thursday (7/2) through next Wednesday (7/8). During this period GBM degree day accumulation per day will be between 27 - 34 DD. Examining the information provided by Kim Knappenberger (see **Grape Berry Moth DD Model information from NEWA stations in the LERGP**) indicates that by next week most of the NEWA sites in the region (with the exception of the Burt site) will reach 810 GBM DD. The NEWA site with the most GBM DD so far (Silver Creek – Double A) is projected to reach 810 DD by Tuesday (7/7). The site with the fewest GBM DD (Fredonia) is projected to reach 810 DD by Monday (7/13). Check the GBM Degree Day Model in NEWA http://newa.cornell.edu choosing the closest station near your vineyard for more specific timings.

According to the GBM DD Model, "Control measures should be timed to coincide with 810 DD in high risk vineyards. For materials that must be ingested, e.g. Intrepid, Altacor, Verdepryn it is important to get materials on as close to 810 DD as possible". I suggest that insecticide applications could begin between 730-750 DD which is only about 2-3 days before 810 DD thus providing a few days cushion ensuring that the application is achieved before the 810 target.

Don't neglect scouting your low and intermediate risk sites to determine if injury levels indicate that a spray may also be needed in these areas. The GBM DD Model also advises that, "For low and intermediate risk vineyards, scout between 750-800 DD for damage and apply control measures, timed to coincide with 810 DD, if more than 6% damaged clusters are found. For materials that are contact insecticides, e.g. pyrethroids and carbamates, apply between 811 and 900 DD".

Since temperatures will be in the mid 80's – 90's next week, spray applications should be applied (if possible) during the cooler parts of the day (late evening – early morning).

<u>Diseases</u>

This week I began finding powdery mildew on berries and pedicels and small colonies of PM starting to appear on some leaves (Figure 2). If the season turns out to be drier than normal, then powdery mildew may be the only disease that we will have to worry about. However, since the weather can't be predicted, then ideally, a second Postbloom fungicide spray should be applied (within 14 days of first Postbloom spray) to ensure that fruit is protected from infection throughout the susceptible period for black rot, powdery and downy mildew. This fungicide application is a must if black rot leaf lesions, which are sources of inoculum for berry infections, are evident.



Figure 2. Powdery mildew on young Concord berry. Photo – Andy Muza, Penn State.



Grape Berry Moth DD Model information from NEWA stations in the LERGP *Kim Knappenberger, Viticulture Extension Aide, LERGP*

	Wild grape	DD total	Forecasted
	bloom	on July	DD for
NEWA Location	date*	1, 2020	July 6
Versailles	June 5	577	728
Hanover	June 6	561	713
Sheridan	June 4	629	780
Silver Creek	June 6	553	692
Silver Creek (Double A)	June 4	634	786
Dunkirk Airport	June 4	633	777
Forestville	June 5	591	741
East Fredonia	June 5	593	744
Fredonia	June 6	478	630
Brocton Escarpment	June 6	548	700
Portland Escarpment	June 5	586	735
Portland	June 5	581	730
Portland (LERGP West)	June 4	619	766
East Westfield	(offline)		
Westfield	June 7	522	666
Ripley	June 5	589	740
Ripley Escarpment	June 6	546	698
Ripley State Line	June 5	586	739
North East State Line	June 7	522	662
North East Escarpment	June 5	591	737
North East Sidehill	June 6	552	698
North East Lab	June 5	595	739
Harborcreek	June 5	597	746
Harborcreek			
Escarpment	June 7	512	667
Lake City	June 6	557	708
Ransomville	June 6	579	735
Burt	June 10	438	585
Corwin	June 7	548	704
*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 1, 2020.

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)