LAKE ERIE REGIONAL GRAPE PROGRAM

Vineyard Notes

Newsletter #5- September 2014

Lake Erie Regional Grape Program

In this Issue:

Cornell University
College of Agriculture and Life Sciences
Cornell Cooperative Extension

Building Strong and Vibrant New York Communities

You Can't Manage What You Don't Measure

Tim Weigle, NYSIPM, LERGP Team Leader

This sentence is paraphrasing a poster I have seen from across the aisle as I worked at Empire Farm Days in past years. The general theme for the Dairy Business Management booth was "You Can't Manage What You Can't Measure". As those of you who have worked with me over the years know, I am a big proponent of record keeping and collecting all the information you can (I think this goes back to my college days when my major professor wisely told me that I should collect all the information I could during the growing season, as it is easier to store data that you don't use than it is to make up for data that you need but don't have.)

The term manage is a key component of IPM, as the goal of a vineyard integrated pest management strategy is not necessarily the elimination of a pest, but rather management of pest populations to levels that allow for the production of a quality crop that meets the buyer's specifications. Scouting and vineyard mapping are two 'tools' that allow vineyard managers to locate pests and then evaluate the need for control based on the likelihood of loss due to the pest compared to the cost of controlling it. While we are at a point in the season where the value of scouting information will be of limited use in 2014, pre harvest scouting (and the collection of information during harvest) will provide the best information on how well management decisions worked. Scouting for the presence of insects, diseases and weeds on a block-by-block basis will provide critically important information when planning next year's IPM strategy.

In the grape industry we are very fortunate to have the techniques in place to record any number of production, pest, and weather parameters that are important to our business. Need to know how many tons each block has? – And, yes, you do need to know how many tons each block has – It is as simple as stripping the fruit off a number of randomly selected vines throughout the block starting at 30 days post bloom and using Dr. Terry Bates' berry weight estimation table to get an idea of how much tonnage could be around at harvest. You can then collect tonnage information on a block-by-block basis at harvest to see how well the estimate correlated to actual harvest. Make sure to collect pest information during the immediate pre bloom period as well, so you are able to determine potential loss from a pest (i.e. late season grape berry moth damage can significantly reduce yield when present) and put that into your calculation. If you did not complete crop estimation for your blocks this year, you should, at a minimum, get harvest weights on a block basis. This will give you a start in developing the long term yield average of a block. Knowing the long term yield average of a block will help when making decisions on whether or not added inputs are economically feasible (extra grape berry moth sprays), as well as, point out blocks which need either; extra attention to remediate a major limiting factor to production (such as wet feet), or removal of the vineyard if remediation would not be cost effective.

Now is a good time to get your vineyard maps out and walk your vineyards to record what is there and what problems you might have to consider during the harvest period. This is particularly true in vineyards where weeds have become an issue due to the retraining of winter damaged vines. Many vineyards did not get their typical post emergent herbicide program as growers were trying to save suckers for retraining. Get good records on weed populations, and species of weeds for these areas. If we have a fall which allows for late season herbicide applications, knowing where to concentrate your weed management efforts will help when time is in short supply. This information should also be used to assist in the preparation of a pre- emergent weed management program for 2015. I suggest that you develop your vineyard maps on a block by block basis as this will help to give you greater detail to assist you in your decision making. If you have not worked with the LERGP to get your GIS maps done, put it on your schedule to come in after harvest to get them made. They are still available free to members of the Lake Erie Regional Grape Program. You can schedule an appointment by calling Kim at 716-792-2800 ext 210.

With the current economics of the grape industry, and the ever increasing costs of inputs, it is more important than ever to spend time managing your resources. The cost/benefit ratio for the time spent collecting the information needed to manage effectively makes this one of your most profitable practices.

Efficient Harvest

Kevin Martin, Business Management Educator, Penn State University

While the Concord market is struggling, the cash flow of grape growers is a bit more complex. While some growers are struggling others are seeing 2013 crop dividends now. Even with success, investments in the business need to be compared for an expected rate of return, as money unfortunately remains a finite resource.

August has growers looking for ways to increase harvest efficiency. In part, that may be for this year. Mostly, though, they're looking ahead to implement improvements by 2015. Planning ahead makes a great deal of sense. A capital-spending plan needs to be flexible in order to maximize tax efficiency. As mentioned in the Crop Update, the Congressional plan for 2014 accelerated deprecation will remain unknown until December. Under current law, it makes sense to divide capital investments between two years if such a division keeps total capital expenses under $200,000.

While it makes sense to pick and choose the month equipment is purchased for tax efficiency, tax efficiency rarely justifies an investment by itself. Many grape operations would be more profitable by realizing income, paying taxes, and decreasing the total amount of capital invested in the operation over time. Right sizing the capital investment for harvest depends on an individual's current and future business plan.

Most capital investments in harvest shift the expense from a labor-based expense to a capital one. Capital investments that reduce labor cost but demand long pay back periods reduce flexibility. Remaining flexible and changing your operation based on yields allows for the economical harvest of lower yielding vineyards. It also allows one to remain competitive when custom harvesting by the acre. However, improvements to a harvest operation with quick pay back periods, or improvements that allow a custom operation to expand often make sense.

Equipment

In many years the goal of the operator is to keep the harvester in motion, to maximize the number of acres that can be harvested with a single machine. Success allows for the justification of additional acreage, decreased labor costs and a narrower harvest window.

It is important to keep in mind we have over 250 harvesters operating in our 30,000-acre region. The average harvester operates over 125 acres, harvesting less than 700 tons. Even with a condensed schedule, the harvester only needs to complete one load per day. Investing in capacity to increase speed makes little sense for the average grower. These average growers need to continue to use Chisholm Ryder and Mecca type harvesters. Smaller than average harvest operations should continue to analyze the practice as an enterprise business. Switching to custom hire may offer the opportunity to increase efficiency. Some smaller growers struggle with sizeable repair costs, tractor ownership costs, and trucking costs. The ability to harvest grapes at a cost below average custom rates for smaller growers is challenging, but not necessarily impossible. Generally speaking, minimized repair bills and minimal investment in capital are required.

Larger growers, particularly those running custom harvest operations can easily justify the harvest operation. It is not a question of whether or not to do it, merely how to complete it in the least costly way.

Equipment innovations, such as de-MOG units, bulk hauling, and modern harvesters have added additional capacity while reducing labor costs. A MOG makes sense when harvesting between 130 and 150 acres. A 120 acre operation harvesting 715 tons of grapes would require a bin attendant for 90 hours to complete harvest. The cost of that labor would be $1,300 per year. As a result, the cost of the MOG would be recouped within 8 years. The equipment has been shown to be extremely reliable and a long payback period would be acceptable as we can assume maintenance and repairs on a MOG unit to be fairly low. The grower would need to plan on keeping the harvester at least the length of the payback period, as the impact on resale value is debatable. Many growers will be able to recoup this investment much more quickly.

Bulk hauling would be in the same vicinity, except that most processors are not equipped to take bulk deliveries. A MOG's payback period would be much shorter, as it replaces labor costs. Bulk hauling payback is based on replacing capital expenses (boxes) as well as reduced labor cost. Newer harvesters can harvest more tons per hour. We've seen widespread adoption above 200 acres. The payback period on this would be the longest. However, since it is an exchange for one capital investment to another it is easier to plan than bulk hauling.

Labor

In harvest operations the use of labor varies greatly. Harvest operations can efficiently complete 50 tons per day with as few as three people. Most operations harvesting 100 – 125 tons per day use at least four individuals at a time. Others use as many as eight. This is where the amount and type of equipment are balanced by downtime and labor size. One advantage of a smaller workforce is that downtime is considerably less expensive.

Remaining flexible is particularly important. Small crop sizes allow for considerably more downtime. The efficiency of loading and hauling is far less important and justifies far less labor when there are simply fewer loads to be hauled. A typical grower might haul as many as 125 loads in a year. 20 minutes of tying down and an additional 30 minutes of delay in loading translates to an additional 3.5 hours per day. In a poor year, that same harvester may only haul 32 loads. The same inefficiencies in loading and tying down account for only 1.2 hours per day over a shorter season.

In general, custom harvest operations should plan diligently in an effort to minimize the amount of labor required. Paid harvest labor is typically the most expensive labor per hour. Not considered farming, insurance and workers compensation rates may rise. The hours and conditions may also lead to higher rates of pay for reliable temporary help. For a custom harvest operation the reduction of one skilled laborer will result in $15 of gross savings per acre.

While the mindset of the custom harvester is to harvest as many tons as quickly as possible, some accommodation for small crops should be made. Reducing the labor costs balanced with some reasonable delay makes a lot of sense. Gross savings should be as high as $200 per day, per employee. Fewer employees will cause harvest to stop more frequently. Reasonable delays in loading and tying down should cost less than $50. This reduces acreage cost by nearly $10. When charging by the acre most growers are on the cusp of breaking even. This change in harvest style should push the more efficient growers right to the line of breaking even.

Brix Testing

Brix testing before and during harvest can pay large dividends. The primary concern, of course, is to meet minimum quality standards. Not only are growers looking to avoid rejected loads, but also looking to avoid low payments. For some, maximizing average brix may be enough. National grape growers also benefit by avoiding particularly low brix loads. With various payment bands, two loads at 15.5 are typically much more valuable than one load at 15.4 and one at 15.6.
Increasing your average delivered brix by .05 will increase revenue for the 125-acre grower by $11,500. Such a moderate increase can be accomplished simply by harvesting grapes with more ripening potential later. Often this means harvesting the ripest grapes first. One note of caution for the cash market, simply delaying harvest to accumulate brix can result in both scheduling and allocation issues. That should be avoided whenever possible.

Brix testing also avoids cancelled loads. While a harvester may not pass that cost onto a grower, certainty grower owned harvester operations see a substantial cost to cancelled loads. At a minimum, a load cancelled after the crew shows up will cost $60. The cost of cancelled loads has been known to balloon well beyond $60 per acre. If the cancelled load necessitates a relocation of equipment, costs quickly exceed $100. Costs of cancelled loads last year typically ran as high as $2,000. A cancelled load was not rescheduled until after the first frost. A lost load is typically worth $8,000. More brix testing last year would have saved a few growers from a lost load or two.

Lake Erie Region Vine Damage and Crop Reduction Due to Winter Injury in 2014

Luke Haggerty, LERGP Viticulture Extension Associate, Tim Martinson, Senior Extension Associate, Hans Walter-Peterson, Finger Lakes Grape Program Extension Associate, Jim O'Connell, Eastern NY Horticulture Program Resource Educator

During the summer of 2014, Cornell Cooperative Extension conducted a statewide 30-vine survey to assess the damage and crop loss brought on by extremely low temperatures in early 2014. This report highlights the Lake Erie Region where temperatures ranged from of -7°F in Niagara County to -15°F in Chautauqua County. Now that we are closing in on harvest, the extent of the damage is evident. *Vinifera* wine grapes received the most vine damage and subsequent crop reduction. There was a variation of damage found in hybrid wine grapes and very minimal damage in 'Native' grape cultivars.

The survey was requested by the New York State Department of Agriculture and Markets to provide documentation of potential crop loss for New York Farm Winery licenses. The commissioner of Ag and Markets is directed under NYS law to allow farm wineries to source fruit from out-of-state if projected crop losses exceed 40%. A list of varieties certified by Commissioner Richard Ball and application procedures is provided on the NYS Ag & Markets website.

Survey Method: To survey the damage in the Lake Erie Grape Region, we assessed 90 vineyard blocks. The surveyed area encompassed Niagara County, NY (17 blocks); Chautauqua County, NY (46 blocks); and Erie County, PA (27 blocks). Data was collected and recorded from thirty vines within each block. For each vine, we rated them on a 0-4 'Dami' scale (Figure 1-5) according to health/damage, and a 0-5 scale (Table 1) by estimating the number of clusters per vine. We used the two ratings to calculate '% Damage' and '% of a Full Crop'. Data collected was averaged for the entire region. The '% of a Full Crop' is based on the assumption that >40 clusters per vine (roughly equal to 8 lb/vine of fruit at 0.2 lb/cluster or 3.2 tons per acre at 6x9 ft spacing) would be the equivalent of a full crop.

Rating	Number of Clusters
0	0
1	1 - 10
2	11 - 20
3	21 - 30
4	31 - 40
5	>40

Table 1. Rating scheme to estimate % crop.

Figure 1. **Rating 0**: Vine is dead, no growth above the graft union.

Figure 2. **Rating 1**: Extensive trunk and cordon damage, likely collapse. Minimal or stunted shoot growth (left). Weak, stunted, or rootstock suckers (right).

Figure 3. **Rating 2**: Extensive damage, no crop, strong suckers above graft union. Full vine renewal from suckers likely.

Figure 4. **Rating 3**: Some cordon and bud damage, and holds reduced crop. Vine will likely survive.

Figure 5. **Rating 4**: No visible damage, full canopy and crop.

Survey Results:

Vinifera: 'Pinot gris' received the most damage losing nearly 40% of the vines and 95% of expected crop (Figure 9). Thirty percent of 'Riesling' were dead, but retained the highest percentage of expected crop for *vinifera* cultivars. 'Gewürztraminer' received the most trunk and cordon damage as we did not count a single vine that had a viable shoot on the cordon. 'Merlot' and 'Pinot noir' received the lowest percentage of dead vine. However, the majority of the blocks used for this assessment were taken from Niagara County where the temperatures did not drop as low as other assessed areas. 'Riesling', 'Cabernet Franc', 'Chardonnay', and 'Pinot noir' retained 45% to 60% of its canopy and had the best chance of full recovery for *vinifera* cultivars. *Vinifera* had the lowest expected crop of the three groups surveyed.

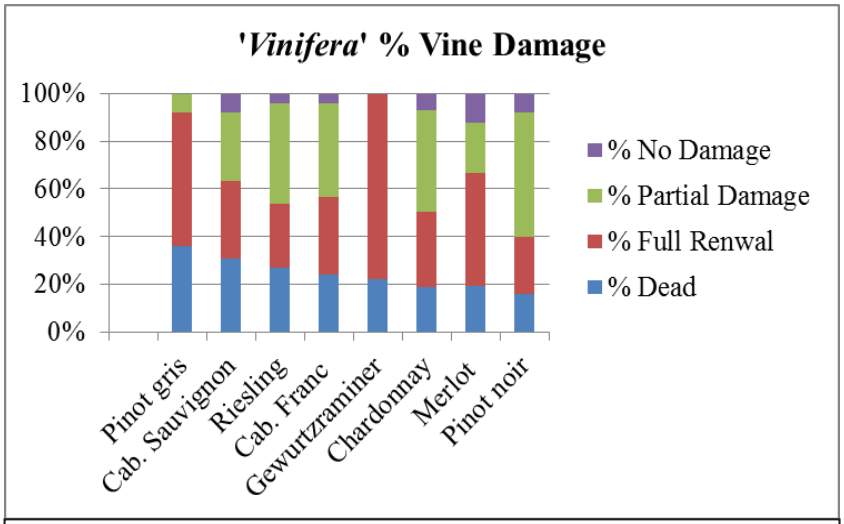


Figure 6. 30-vine survey showing *'Vinifera'* percent vine damage. Percent dead (blue), severe trunk damage with viable suckers for full vine renewal (red), partial cordon damage with reduced crop (green), no visible vine damage (purple).

Hybrids:
Of the three wine grape groups, hybrid cultivars had the most variation in damage with 'Edelweiss' and 'Frontenac gris' receiving no damage and 'Noiret' having 90% of its vines show some degree of damage. 'Traminette', 'Vidal', and 'Corot noir' received between 40% and 50% damage and are expected to have approximately 50% of their crop (Figure 9). 'Vignoles', 'Marquette', and 'Aurore' received very minimal damage and are expected to have 80% or higher of an expected crop. Of the hybrid cultivars, 'Noiret' received the most damage with 70% of the vine suffering cordon and or bud damage reducing the expected crop by 65%.

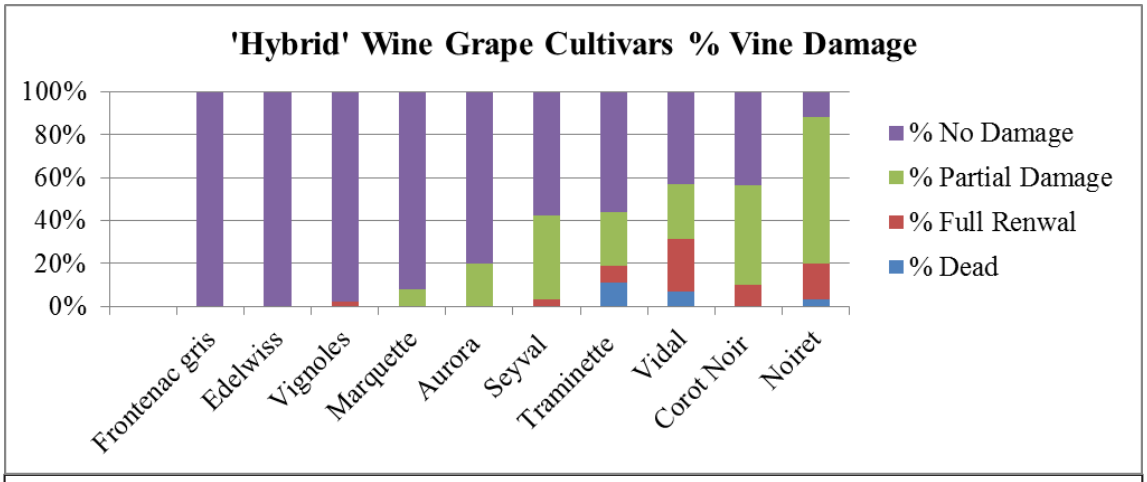


Figure 7. 30-vine survey showing hybrid wine grapes percent vine damage. Percent dead (blue), severe trunk damage with viable suckers for full vine renewal (red), partial cordon damage with reduced crop (green), no visible vine damage (purple).

Native: Native cultivars are shown to be the hardiest of the three groups. Of the blocks assessed there were no vines counted dead or any that received enough damage to call for a full-vine renewal.

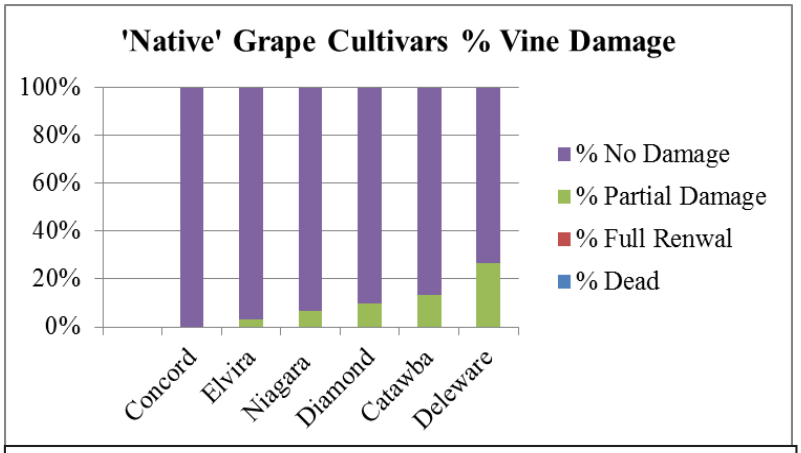


Figure 8. 30-vine survey showing 'Native' grape cultivars percent vine damage. Cultivars only received partial cordon damage with reduced crop (green), or no visible vine damage (purple).

Survey Discussion:
To effectively cover the number of cultivars, vineyard blocks, and area within the Lake Erie Region this method was used to give us a broad estimate of the winter damage the region received. There may be possible biases in this survey as the estimated percent crop was based on cluster counts with a full crop having a maximum at 40 clusters per vine. Fruit loads vary among cultivars, and 40 clusters may be more or less than the target fruit load for the 24 surveyed

cultivars. There also could be the possibility of an increase of cluster and or berry weight when the cluster number decreases per vine.

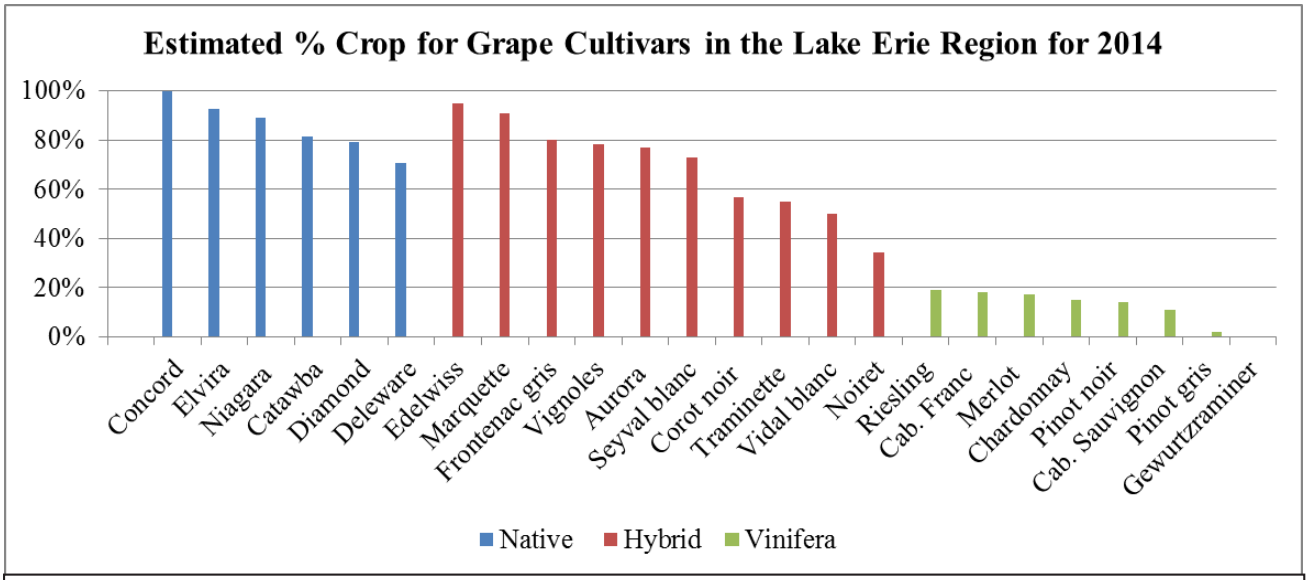


Figure 9. 30-vine survey showing estimated percent crop for cultivars in the Lake Erie Region. Native grape cultivars (Blue), hybrid wine grape cultivars (Red), vinifera cultivars (green).

(Discussion continued): Some of the results do not follow what some readers may have expected. One reason for this may be that the location of vineyard blocks and number of blocks per cultivar varied for certain cultivars within this survey. Location made a difference. Vineyard blocks surveyed in Chautauqua County, NY and Erie County, PA reached lower temps than the surveyed blocks in Niagara County, NY. The result was some cultivars may show an increase or decrease in percent of damage or estimated percent crop depending on where they were surveyed. For example, there were 12 blocks of 'Riesling' surveyed, two from Niagara County, nine from Chautauqua County, and one for Erie County, PA, showing that Riesling results are strongly representative of Chautauqua County. 'Aurore', 'Catawba', 'Deleware', 'Diamond', 'Elvira', and 'Frontenac gris' only had one survey location each and results may not represent the entire region. Even with these possible biases, we're confident that our results are consistent and show a strong reflection of the winter damage within the Lake Erie Region

Acknowledgments: We would like to thank the CLEREL staff for helping to collect and process data and the growers who allowed us access to their vineyards. Tim Martinson organized the survey and developed the data collection system. Most of all we want to thank the New York Wine and Grape Foundation who made this report possible by funding the time and travel need to conduct the survey.

References:

Martinson, T. E., H. Walter-Peterson, M. Colizzi, L. Haggerty and J. O'Connell. 2014. Estimates of Wine Grape Crop Reduction due to Winter Injury in New York in 2014. Report to the NYS Commissioner of Agriculture and Markets. August 2, 2014. Posted at:

https://grapesandwine.cals.cornell.edu/sites/grapesandwine.cals.cornell.edu/files/shared/documents/Estimates%20of%20Wine%20Grape%20Crop%20Reduction%20due%20to%20Winter%20Injury%20in%20New%20York%20in%202014.pdf

Morrissey, J. 2014. Department of Agriculture and Markets Announces Actions to Assist FarmWineries Affected by Harsh Winter Conditions., NYS Department of Agriculture and Markets Press Release, August 18, 2014

Ball, R. 2014. Commissioner Ball Determines Grape Varietal Losses. NYS Ag& Markets Website, August 15, 2014 http://www.agriculture.ny.gov/AP/Farm_Winery_Application.pdf

Another Coffee Pot season has come and gone. Again, this year the Coffee Pots have had success in bringing growers and Extension experts together in a very informal setting to discuss what is going on in the vineyards and how to manage it. Add a hot cup of coffee, a fresh baked donut and some pesticide credits -does it get any better?

We would like to thank those who opened their doors to the LERGP Team and the growers this year to be a host location. Without your help, these meetings would not be able to be held, at least not comfortably. If anyone is interested in hosting for 2015, please give Kate a call at CLEREL, 716-792-2800 ext 201, and we can get you on the schedule for next year.

Ann & Martin Schulze
John Mason
Leo Hans
Bob & Dawn Betts
Clover Hill Farms
Brant Town Hall
The Winery at Marjim Manor
Chris Ortolano
Dan Sprague
Evan Schiedel
Tom Tower
Archer & Pratz Inc.
Peter Loretto
Kirk Hutchinson
Earl & Irene Blakely
Fred Luke
Carl Vilardo

Sampling

Luke Haggerty
Viticulture Extension Associate
Lake Erie Regional Grape Program

Purpose of sampling:

Even though we have passed veraison there is still a need to get out in the vineyard and sample your crop. Berry sampling is vital to tracking and plotting the traits of berry maturity. Each grape variety has its target soluble solid content and/or organic acid level. As these traits can differ within vineyard blocks and or between vineyard blocks it is necessary to collect samples from all areas of the vineyard. Berry traits can be affected by different soil types, elevation, and micro-climates changing the chemical composition and the rate in which grape berries mature. Having a well-represented sample set from your vineyard will help make sure there are no big surprises at harvest. This year's winter damage has caused a great deal of variation within many of the areas within grape vineyard blocks making it critical to sample. To plan harvest, every grower needs sound and adequate samples accompanied with the grape berry measurement you are interested in.

How to take berry samples

Veraison is a good time to start weekly samplings with more frequent sampling the closer you get to harvest. How many berries should you pick? The number of berries is directly related to the accuracy of your total sample set. For example, 2 samples of 100 berries each should get you within 1.0 ˚Brix, and 5 samples of 100 berries will increase your accuracy to 0.5 ˚Brix.

- Berry selection
  - Select from both sides of the cluster.
  - Select from both sides of the row (sun exposed and shaded).
  - Collect berries from all parts of the cluster (2 from the top 2 from the middle and 1 from the bottom).
  - Pick random berries and not just the ones that catch your eye.
  - Sample from all areas of the vine.
  - Stay away from border rows and the end panels.
  - Samples should be cooled until processed.

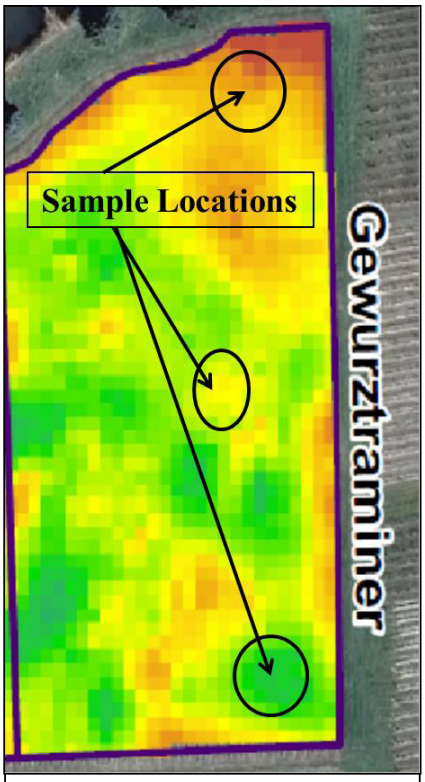
    Note: Randomization is key to a representative sample.
- Sample processing
  - Juicing can be done using a hand juicer, jelly juicer, fruit press, or simply crushing fruit by hand in a Ziploc bag.
  - Try to process your samples so all the berries are crushed (trying not to break the seeds if possible).

    Note: For more accurate readings, leave juice samples in a cool area long enough for particulates to settle out before taking measurements.

- Measurements
    - Make sure juice samples have reached room temperature before taking any measurements.
    - Common measurements include berry weight, soluble solids (˚Brix), titratable acidity (TA), and pH.
      Note: Timing and grape type will dictate which measurements are required.

Sampling Considerations

Having an elevation, soil, and or NDVI map of your vineyard block will help guide you in collecting samples from the many aspects of your vineyard. When collecting samples remember your eyes tend to zero in on the biggest and ripest berries. To avoid this, pick with your hands, not your eyes. It's best to keep looking down the row and simply reach in the canopy and let chance select the cluster you sample from. If single berry samples seem tedious, whole cluster samples can be used (20 clusters per sample). Regardless of the way you decide to sample, stay consistent and make sure your samples are random. Finally, it is good practice to keep records of where (row, panel, and block) you sample and the measurements that followed. Every year is different, and with good records you will better understand the variation within and between your vineyards and the effect that year had on the grape maturity process.



NDVI map showing variation of vine size within a vineyard block.

Is Cluster Thinning After Veraison Worth the Effort?

Hans Walter Peterson, Finger Lakes Grape Program

Cluster thinning is often done with the goal of reducing crop load in order to improve the quality of the remaining fruit at harvest. The practice is generally done sometime between fruit set and veraison, and is based on the idea that if there are fewer clusters and berries on the vine, the vine will concentrate more of the sugars, flavor and aroma compounds that it produces into the remaining fruit, and therefore produce wine of better quality.

Pinot noir clusters dropped at the end of veraison.

In some situations, however, growers will wait to drop fruit until the end of veraison and do what is sometimes called a "green drop" or "green thinning", where the last 10-20% of clusters that are changing color slower than the others will be removed from the vines, in order to improve the average ripeness of the remaining crop by reducing the number of under ripe clusters. Growers may also sometimes thin their crop after veraison simply because they weren't able to get to it before then because of lack of time or labor. But whatever the reason for doing it, the question should be asked whether the work necessary to do cluster thinning after veraison is ultimately beneficial in terms of quality (because it certainly isn't beneficial to the grower unless they are compensated for the extra work and loss of yields – just sayin').

There have been several studies that have looked at how cluster thinning at different points in the season impacts the fruit. While there are some fairly consistent effects that are found in these studies when thinning is done before veraison – larger berries, heavier clusters (both due to yield compensation by the vines), improved color or sugar accumulation in some cases – the evidence of any significant impacts to the fruit from thinning after veraison is, well – thin.

As I mentioned above, one of the primary reasons that growers will drop fruit at, or after, veraison is to improve the uniformity of the remaining crop by performing a green drop. While the idea of the practice would certainly seem to make some sense, there is very little evidence that it actually accomplishes that goal by the time harvest rolls around.

In some work done on Cabernet Sauvignon in California, the researchers removed 20% of the crop at veraison either by removing the upper clusters on a shoot or those that were lagging in color development. By the time harvest rolled around, there were no differences in Brix levels between either of the thinned treatments and the unthinned vines (Calderon-Orellana et al. 2014). In addition, they also found that the remaining fruit in the thinned vines had just as much variation in Brix levels as that from the unthinned vines. Another California study done several years earlier also found similar results – that while fruit uniformity was greater in the thinned vines about 7 weeks before harvest, there was no difference in ripeness or uniformity of ripeness between the thinned and unthinned vines at harvest (Anderson et al. 2007).

This is not to say that there aren't certain situations where dropping clusters between now and harvest might be a good thing to do. For example, removing underdeveloped clusters just before mechanical harvesting would help to improve the uniformity of the remaining crop, as the machine doesn't discriminate between ripe and under ripe fruit. This may be especially true in a year like this where there may be a significant number of secondary clusters in some blocks this year due to winter injury to primary buds.

As with any practice in the vineyard, the only way to really know if it works in your situation or not is to set up a small comparison for yourself. If you are going to cluster thin before harvest, I would suggest leaving a few unthinned rows to compare to those that you thin in order to see what impact, if any, that the practice has. Based on what we know about how the vine works and the results from research trials like those mentioned here, though, those impacts might be hard to find in the end.

References:

Anderson, M., H. Heymann, J. Benz, G. S. Howell, and J. Wolpert. 2007. Effect of Crop Load Adjustment on Fruit Ripening, Uniformity, and Sensory Characteristics. Abst. Am. J. Enol. Vit. 58:415A.

Calderon-Orellana, A., L. Mercenaro, K. Shackel, N. Willits, and M. A. Matthews. 2014. Responses of Fruit Uniformity to Deficit Irrigation and Cluster Thinning in Commercial Winegrape Production. Am. J. Enol. Vit. 65: 354-362.

2014 Finger Lakes Grape Price Survey

Prices/ton

finger lakes grape program	Anthony Road	Bully Hill Vineyards	Casa Larga Vineyards	Constellation Wines	Cott (Cliffstar)	Fox Run Vineyards	Fulkerson Winery	Glenora Wine Cellars	Hazlitt 1852 Vineyards	Heron Hill Winery	Hunt Country Vineyards	Inspire Moore	Keuka Spring Vineyards	Lakewood Vineyards	Lucas Vineyards	Spring Ledge (Royal)	Swedish Hill Vineyard	Average	Low	High	2013 Avg Price	% change
Aromella																	750	750	750	750	750	0.0%
Aurore		440		415			420									285		390	285	440	360	8.3%
Baco Noir		650		510			600	600		600				600	650			601	510	650	555	8.4%
Cabernet franc, high	1200	800					1400	1200		1475	1350	1500	1500	1300			1650	1338	800	1650	1317	1.6%
Cabernet franc, low																	1350	1350	1350	1350	1300	3.8%
Cabernet sauvignon		1200	1800				1400	1700		1650	1800	1850	1800	1400			1800	1640	1200	1850	1645	-0.3%
Castel		700		385			700											595	385	700	595	0.0%
Catawba		290		280			340	350	355		350		400	400	344	250	350	337	250	400	334	0.8%
Cayuga White	650	600	560	415		600	500	575		600	600	550	600	550		500	475	555	415	650	548	1.3%
Cayuga White (Night)																	550	550	550	550	550	0.0%
Chambourcin		700					800				700						860	765	700	860	799	-4.3%
Chancellor		700					600											650	600	700	667	-2.5%
Chardonel		750																750	750	750	750	0.0%
Chardonnay, high	1400	1200	1275			1175	1100	1200		1400	1300	1250	1500	1250	1200		1450	1285	1100	1500	1271	1.0%
Chardonnay, low																	1050	1050	1050	1050	1000	5.0%
Chelois		900																900	900	900	788	14.3%
Colobel		700		425			600											575	425	700	606	-5.2%
Concord		340		260	240		300		355		275			450		260	285	307	240	450	318	-3.4%
Corot noir				425			600				600						600	556	425	600	585	-4.9%
De Chaunac		650					450				450			475				506	450	650	484	4.6%
Delaware, high				295			350							675		225		386	225	675	403	-4.1%
Delaware, low														475				475	475	475	475	0.0%
Diamond							460										440	450	440	460	478	-5.8%
Diamond (Night)																	500	500	500	500	500	0.0%
Dornfelder							1200											1200	1200	1200	1200	0.0%
Dutchess				415														415	415	415	415	0.0%
Edelweiss							700											700	700	700	0	N/A
Elvira		290		300												250		280	250	300	280	0.0%
Foch		700					600			600				600				625	600	700	625	0.0%

2014 Finger Lakes Grape Price Survey

Prices/ton

finger lakes grape program	Anthony Road	Bully Hill Vineyards	Casa Larga Vineyards	Constellation Wines	Cott (Cliffstar)	Fox Run Vineyards	Fulkerson Winery	Glenora Wine Cellars	Hazlitt 1852 Vineyards	Heron Hill Winery	Hunt Country Vineyards	Inspire Moore	Keuka Spring Vineyards	Lakewood Vineyards	Lucas Vineyards	Spring Ledge (Royal)	Swedish Hill Vineyard	Average	Low	High	2013 Avg Price	% change
Frontenac														900				900	900	900	700	28.6%
Geneva Red (GR7)		650		510				550										570	510	650	585	-2.6%
Gewurztraminer, high	1600	1200					1600	1600		1650			1500	1600			1600	1544	1200	1650	1510	2.2%
Gewurztraminer, low																	1500	1500	1500	1500	1400	7.1%
Golden Muscat							400		375								375	383	375	400	363	5.7%
Gruner Veltliner							1500					1700						1600	1500	1700	1600	0.0%
Himrod							700											700	700	700	700	0.0%
Hybrid - Red								450	500		450					285	350	407	285	500	424	-4.0%
Hybrid - White								450			500					280	350	395	280	500	383	3.3%
Isabella				425				475									450	450	425	475	455	-1.1%
Ives		350												450				400	350	450	400	0.0%
Lakemont							500											500	500	500	500	0.0%
Labrusca - white																	175	175	175	175	0	N/A
Landot noir																	600	600	600	600	600	0.0%
Lemberger	1300						1400			1400		1500		1500			1500	1433	1300	1500	1417	1.2%
Leon Millot		700					625							600				642	600	700	635	1.0%
Marechal foch																	700	700	700	700	675	3.7%
Melody																	550	550	550	550	550	0.0%
Merlot	1700	1500					1700	1700		1900	1700	1850	1800				2000	1761	1500	2000	1810	-2.7%
Native - Red								400									225	313	225	400	275	13.6%
Native - White								400									275	338	275	400	292	15.7%
Niagara		340		250	235		300	400	355		350			375	344	220	335	319	220	400	332	-4.2%
Noiret		650		425			600		500		700	675					860	630	425	860	626	0.6%
Organic Blend																550		550	550	550	550	0.0%
Pinot blanc								1300		1525								1413	1300	1525	1300	8.7%
Pinot gris	1700	1500					1550			1525	1700	1500		1650			1725	1606	1500	1725	1604	0.2%
Pinot noir	2000	1650				1600	1550	1650		1600	2200	1750		1700				1744	1550	2200	1682	3.7%
Pinot noir, sparkling																	1700	1700	1700	1700	1900	-10.5%
Riesling, high	1750	1300	1500			1500	1500	1475		1475	1500	1450	1400	1500			1550	1492	1300	1750	1479	0.9%

2014 Finger Lakes Grape Price Survey

Prices/ton

finger lakes grape program	Anthony Road	Bully Hill Vineyards	Casa Larga Vineyards	Constellation Wines	Cott (Cliffstar)	Fox Run Vineyards	Fulkerson Winery	Glenora Wine Cellars	Hazlitt 1852 Vineyards	Heron Hill Winery	Hunt Country Vineyards	Inspire Moore	Keuka Spring Vineyards	Lakewood Vineyards	Lucas Vineyards	Spring Ledge (Royal)	Swedish Hill Vineyard	Average	Low	High	2013 Avg Price	% change
Riesling, low																	1100	1100	1100	1100	1100	0.0%
Riesling, sparkling																	1400	1400	1400	1400	1400	0.0%
Rosette							375	525										450	375	525	450	0.0%
Rougeon	650	650		425			500	525					450				500	529	425	650	526	0.4%
Sangiovese								1825										1825	1825	1825	1825	0.0%
Sauvignon blanc							1500					1700						1600	1500	1700	1500	6.7%
Seigfried				415														415	415	415	415	0.0%
Seyval		550		415			700	600		600	600							578	415	700	608	-5.0%
St. Croix		800																800	800	800	800	0.0%
St. Vincent				435			500											468	435	500	468	0.0%
Syrah								1750										1750	1750	1750	1875	-6.7%
Traminette - high		950				700	900		800	900		675					900	832	675	950	871	-4.4%
Traminette -low																	700	700	700	700	667	5.0%
Valvin muscat				415			900			1000	750			1000			700	794	415	1000	754	5.4%
Valvin muscat (Night)																	800	800	800	800	768	4.2%
Verdelet		700		415			400											505	400	700	505	0.0%
Vidal blanc		600					600	600		600			700	550			700	621	550	700	625	-0.6%
Vidal blanc, late harvest		1650																1650	1650	1650	1650	0.0%
Vignoles (Ravat)	900						800	650			750			700			750	758	650	900	772	-1.8%
Vignoles Late Harvest	1600																	1600	1600	1600	1600	0.0%
Vincent							600	525					600	600		600		585	525	600	592	-1.1%
Vinifera - Red								1000										1000	1000	1000	0	N/A
Vinifera - White								1000										1000	1000	1000	0	N/A
Vinifera (other)						700				1100	1200						400	850	400	1200	760	11.8%
Viognier																	1725	1725	1725	1725	1725	0.0%
Zweigelt							1500											1500	1500	1500	1500	0.0%

2014 Finger Lakes Grape Price Survey

Prices/ton

	Anthony Road	Bully Hill Vineyards	Casa Larga Vineyards	Constellation Wines	Cott (Cliffstar)	Fox Run Vineyards	Fulkerson Winery	Glenora Wine Cellars	Hazlitt 1852 Vineyards	Heron Hill Winery	Hunt Country Vineyards	Inspire Moore	Keuka Spring Vineyards	Lakewood Vineyards	Lucas Vineyards	Spring Ledge (Royal)	Swedish Hill Vineyard	Average	Low	High	2013 Avg Price	% change

Color Key:

= Avg price increased more than 0.5% over previous year

= Avg price within ±0.5% of previous year

= Avg price decreased more than 0.5% over previous year

Note:

1. Some 'premium' prices may not be listed. Some processors may have sliding price scales, based on brix.
2. Where there are multiple prices for a variety, the high and low prices are listed. Higher prices may have different quality standards, harvesting methods, etc.
3. If in doubt, check with the buyer. We have made every effort to be accurate, but the range of price categories was edited.
4. The 'average' price listed is merely an average of the stated prices. It is not weighted based on tons purchased at each price.

LaPorte

Farm Equipment

"Large and small, we sell them all"

Sales - Parts - Service

Westfield NY (716) 326-4671

CASE IH AGRICULTURE

www.laportefarmequipment.com

Custom Built 2 Tank Weed Sprayer

We sell and service CaseIH tractors, Oxbo Harvesters, and Turbomist sprayers. We also custom manufacture single and dual tank sprayers, pre-pruners, brush sweepers, wire winders.

Clover Hill Sales LLC.

10401 Sidehill Road
North East, PA 16428
814-725-3102
www.cloverhillsales.com

WOODS Woods Equipment Company

DURAND WAYLAND SPRAYING, PACKING & LABELING SYSTEMS

STOLTZFUS Spreaders

EDWARDS EQUIPMENT COMPANY

Now Offering Harvester
Parts and Belting
Plus Much More!!

Z&M AG AND TURF YOUR JOHN DEERE DEALER

Western New York and Northern PA.'s Premier John Deere Sales, Parts and Service Solution for New and Used Agriculture, Lawn & Garden, Equine and Vineyard Equipment.

www.ZahmAndMatson.com

North Collins	Falconer	Clymer
10838 Main St.	1756 Lindquist Dr.	8926 W. Main St.
716-337-2563	716-665-3110	716-355-4236

6592 West Main Rd., Portland, NY 14769 (716) 792-2800
662 North Cemetery Road, North East, PA 16428-2902 (814) 725-4601
850 East Gore Road, Erie, PA 16509-3798 (814) 825-0900

This publication may contain pesticide recommendations. Changes in pesticide regulations occur constantly, and human errors are still possible. Some materials mentioned 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.

Cooperatively yours,

Timothy Weigle
Statewide IPM
Senior Extension Associate

Andy Muza
County Extension Educator

Kevin Martin
Business Management Educator

Luke Haggerty
Area Viticulture Extension Associate

PENNSTATE
College of Agricultural Sciences

Building Strong and Vibrant New York Communities

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.

Cornell Cooperative Extension
LERGP
6592 W Main Rd
Portland NY 14769

Helping You Put Knowledge to Work