

LERGP Crop Update

September 15, 2016



Harvest Season is upon us.
Happy and safe harvesting to all of our growers!



The Lake Erie Regional Grape Program



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Business Management

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

Planning Harvest to Maximize Returns

As phenology continues to show grape maturity closely tracking 2005, there are a couple of meaningful observations that present economic risk to the 2016 crop. Once again, careful planning offers an opportunity to reduce the risk of lower yields or lower quality.

Current brix samples from commercial vineyards vary from a low of 11.2 brix and a high of 17.1. Berry size is also highly variable. While average brix accumulation began to lag behind 2005, the variability presents a significant concern. Over-ripe grapes have a high probability of shelling well before the third week of October. Some shelling may even begin before all processing plants begin receiving grapes. The current delay imposed by the cooperatives should not be problematic as long as growers have a good understanding of the location of ripe and over ripe grapes. If harvested in the first 10 days, shelling will hopefully not present any significant economic loss.

Then we have the low brix Concord. Even samples gathered by CLEREL staff are highly variable. It is possible that despite the average to below average crop, a few growers may struggle with ripening. To maximize payments, growers should understand their market and the brix payment schedule. They should also understand the location and volume of under-ripe grapes their operation will be dealing with. With variability on farms and within an individual block high, growers do have some flexibility.

While field blending is a common practice, it is usually unnecessary for grapes above 15.0-15.2 brix. Cott has altered the penalty/premium structure for brix so pay close attention to that scale to understand how you'll be compensated for brix.

Overall brix accumulation is slightly behind average, relative to bloom date. Berry size remains below average as well. Assuming things continue to progress as they have since mid-August, a combination of brix and yield should remain about 10% - 20% below average. Drought stress really highlighted vineyards that were lacking care. It is easy to observe yields below 4.5 ton per acre. In those areas nutrient deficiencies and very low vine size may also significantly reduce brix in those blocks. While average vineyards will have a fairly average year, these blocks will continue to struggle in a price climate that further reduces their sustainability.

While the year isn't wrapping up to set any records, it certainly is exciting to see a harvest that has a fairly high chance of success for a great number of growers. Despite challenges with price and drought, this should buy some growers another year to hope for a healthier price market.

Cultural Practices

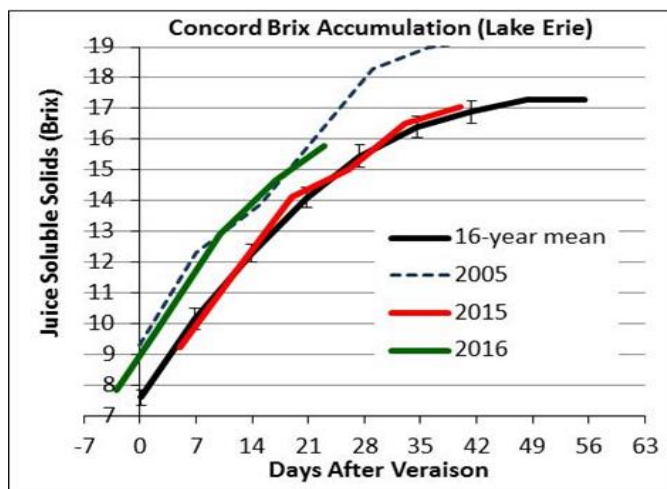
Luke Haggerty, Viticulture Extension Associate, Lake Erie Regional Grape Program

Research

Cain Hickey, Postdoctoral Research Associate, CLEREL

Ripening, Berry Curve, Sampling Considerations, GDD and Precipitations Levels

Ripening (Cain Hickey): It does appear that we are on that part of the °Brix accumulation curve where ripening rate is attenuated (see Fig. 1 for historical support), as soluble solids concentration ranged 9.9 to 15.4 °Brix *two weeks ago*, 12.1 to 17.9 °Brix *last week*, and 12.9 to 18.9 °Brix *this week*. These ranges encompass fruit samples taken from several vineyards across a 50-mile stretch (Sheridan, NY to Harborcreek, PA) of the Lake Erie Concord region. We are getting closer to harvest, and I have provided objective proof. However, from here forward, don't expect the huge jumps in °Brix that we have seen from veraison up to last week. We all know ripening rate slows at this point in time, and this is typical of many different *Vitis* cultivars,



regardless of post-harvest destiny (i.e. juice, wine, etc.) I am not sure exactly why soluble solids accumulation rate slows during the last 20% or so of the desired total soluble solids concentration, but it is at least partially due to berry enlargement (likely aided by recent rains on a local level), but also cooler air temperatures. Predicted air temperatures in the next week should aid in fruit maturation, but this will also be dependent on how much rain we get in the

immediate forecast (over the weekend). As shown in Fig. 1, soluble solids concentrations are currently most closely mirroring those of 2005.

Fig. 1. Juice soluble solids accumulation in 2005, 2015, 2016, and as a mean over the last 16 years (thanks to Terry Bates for the figure).

Last week I said I would elaborate a bit more on standard deviation of Brix within vineyards, especially with respect to sensor-derived management zones. Due to time constraints, I am forced to lie about this (please forgive me). I am running out of time to get this crop update to Kate so that she can get it out to you kind folks. However, I'd like to convey the variation in fruit maturity that can often exist within a small vineyard block. Thus, what I will do is briefly lay out a case study of a vineyard in which we have created management zones from NDVI sensor scans of the canopy (Fig. 2). Using the management zone classification map in Fig. 2 as an example, soluble solids concentration ranged 11.0 to 14.7 °Brix across the vineyard, and the mean value was 12.3 in the purple zone, 12.7 in the green zone, and 13.2 in the red zone. Berry weight ranged 1.27 to 2.85 grams, and the mean value was 2.2 in the purple zone, 2.5 in the green zone, and 1.5 in the red zone. Thus, the small-canopy vines in the red zone also have

smaller berries, which may be partially responsible for the relatively greater juice soluble solids concentration in this compared to the two other zones. The red zone is likely under some soil water or nutrient stress, potentially due to physical limitation of root growth. Since this vineyard is still in “diagnostic phase”, the take home for now is that vine size, berry weight, and fruit maturity can be different across NDVI and soil sensor-defined zones; crop yield and pruning weight will also likely be different in this particular case. This generally means that sensors are effective at characterizing vineyard variation. It may be prudent for growers to evaluate variation within their own vineyards, and manage accordingly to optimize crop yield and fruit maturation uniformity. In light of the current stage of season, maps could be used to better inform growers of relative fruit maturation within a vineyard block(s). Fruit maturation does not necessarily follow the patterns chosen for planting vineyard rows and blocks, although wouldn't it make life easier if it did!?!?

Good luck with your early harvest – I may report next week, but domestic occurrences (i.e. a baby girl!!!) will hopefully keep me from this. Talk to everyone soon - Cain

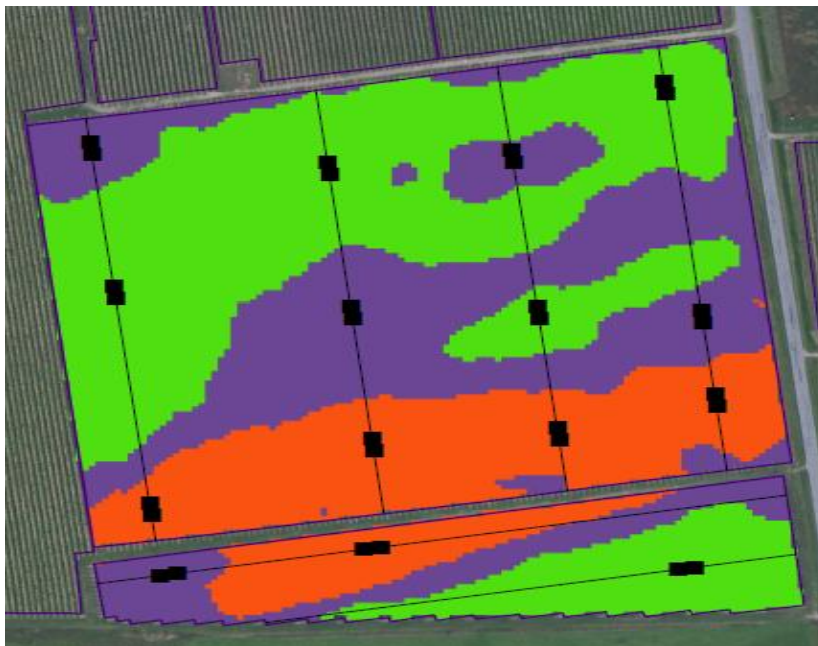
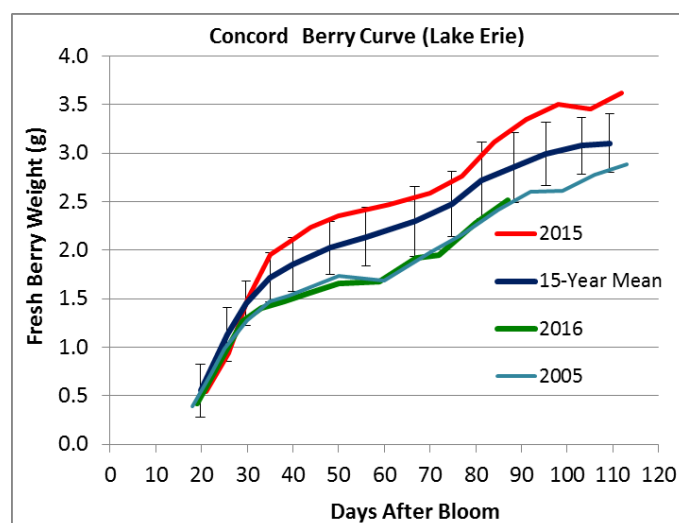


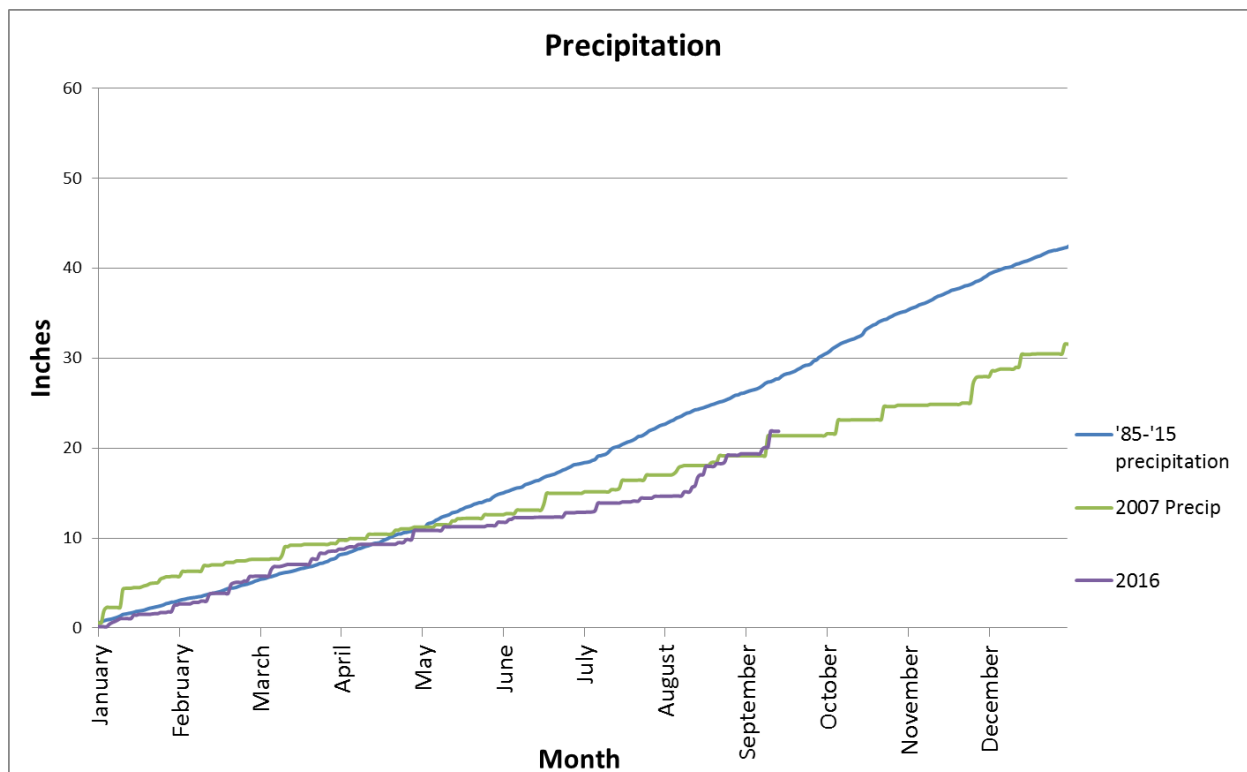
Figure 2. An NDVI-derived management zone classification map (with data plots for fruit maturity sampling, in black) of a Concord vineyard in the Lake Erie region (thanks to Rhiann Jakubowski for the figure).

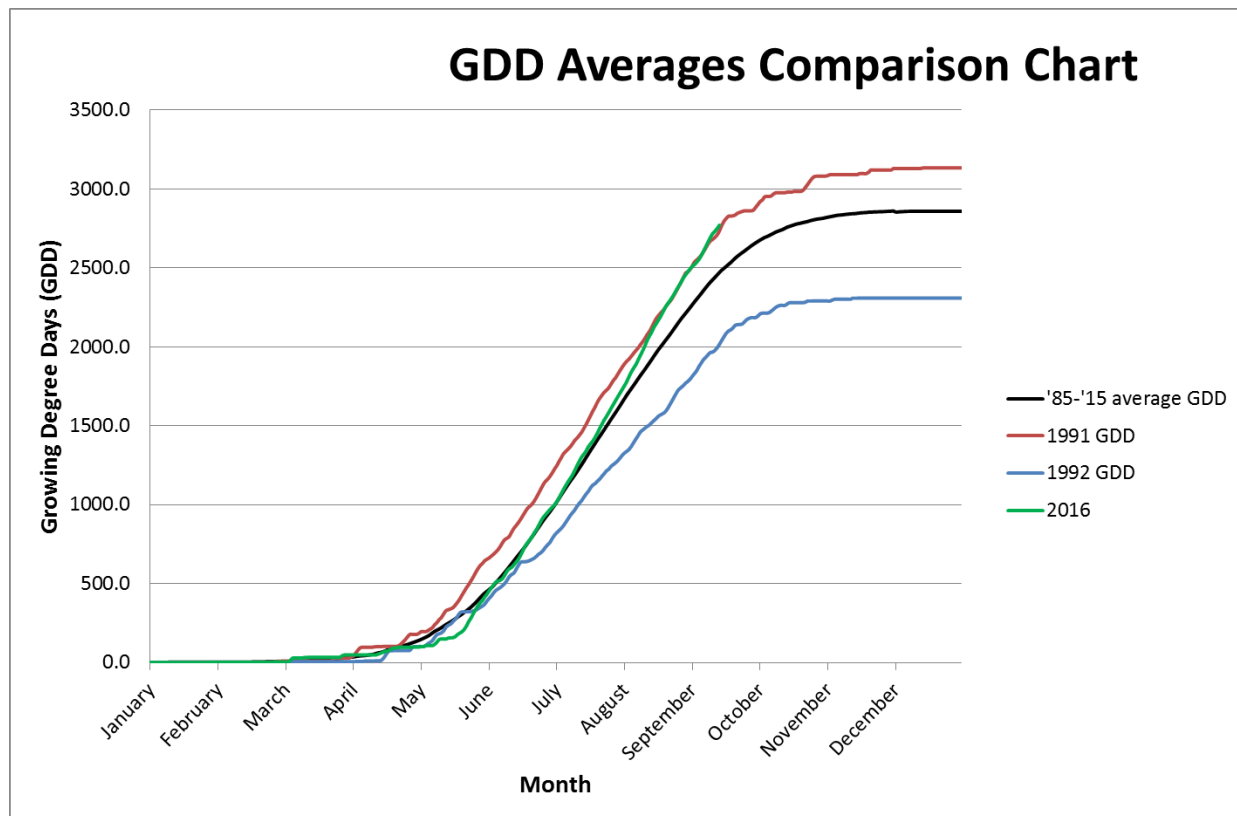
Berry Curve: Recent rains have contributed to another jump in berry



size. The increase last week has helped close the gap on the size deficit I have been reporting on since veraison. My early reports have put berry size ~20% below average. Currently we are **10% below average**. Again, we are still tracking very close to 2005.

Precipitation and GDD: The Lake Erie region received between one and a half to three inches of rain over the past week. We are still very warm compare to average. According to our data this was the warmest August on record and on track for having one of the warmest Septembers.





Sampling Considerations: Even though we have pasted 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. This year's drought has caused a great deal of variation within many of the areas wine grape vineyard blocks making critical to sample. To plan harvest, every grower needs sound and adequate samples.

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

Tim is on vacation this week



In the Vineyards, PA

Andy Muza, County Extension Educator, Penn State, LERGP

In the Vineyard (9-15-16)

Did my spray program work this season?

Next week Concord harvest is scheduled to begin. At this point, many growers may think that vineyard pest management has ended for another season. Think again.

Scout your blocks for pest problems before harvest to determine the effectiveness of the season's spray program. This should be an important component of your vineyard pest management program.

While scouting, identify specific pest problems observed, rate the problem (e.g., low, moderate, high) and record on your vineyard maps the areas where problems occurred. **Compare this scouting information to your spray records.**

Determine from your spray records:

What blocks were sprayed?

What was the target pest(s) for each application?

What pesticides and rates were used?

When were pesticides applied?

Was every row or every other row sprayed?

What was the spray gallonage/acre used for each application?

What were the environmental conditions before, during and after each application?

Examining your spray records coupled with end of season scouting information should provide you with the answer to: **Did my spray program work this season?**

A final thought to consider: Disease pressure from phomopsis, black rot, and downy mildew (Figures 1 and 2) was unusually low this season due to prolonged hot, dry conditions. Therefore, a minimal fungicide program for these diseases may have worked this season. However, don't expect the same results in a wetter season.



Figure 1. Black rot mummies in a Concord cluster

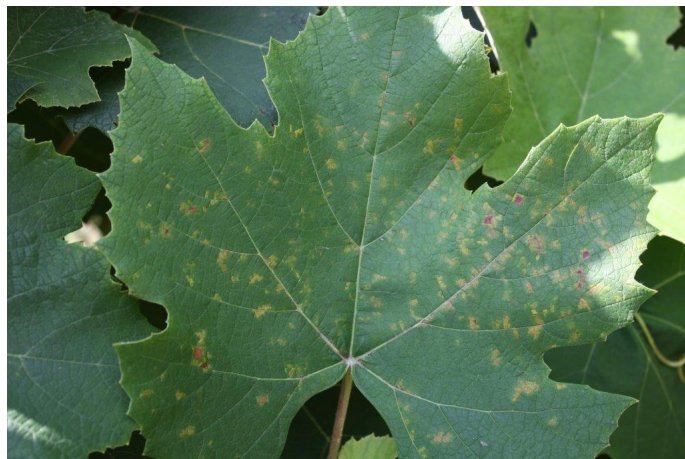


Figure 2. Downy Mildew lesions on Niagara leaf

North East, PA Update

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

Weather: We have recorded 2.64" rainfall so far in September at our site. Coupled with 4.45" in August, vines are in good shape for harvest. Other NEWA weather stations in Erie county PA are reporting 5-6 (escarpment) to 8-9 inches (Harborcreek) of rain over the past 5 weeks. Likewise in Western New York, rainfall has ranged from 5-7 inches along Erie lakeshore vineyards during this same period. Although berries may be on the small side this year, recent rainfall has alleviated much of the drought stress (and worry) for *most* juice grape growers. Unfortunately, that is not the case farther east, especially into west central New York (around the Finger Lakes) where some counties are considered to be under severe drought and qualify for disaster assistance.

Growing degree day accumulations since April 1 at our site will exceed 2600 by end of today, well ahead of average. The short term forecast predicts that temperatures will continue to remain above average, though we are finally feeling a welcome respite from the heat. There is a chance for precipitation over the weekend. Tropical depression 'Julia' appears to be moving back out into the Atlantic after heading up to the Carolina coast and is not predicted to have much impact farther north. Tropical storm 'Ian' is currently way out in the mid-Atlantic. So, no real immediate threats from Hurricane season so far.

Disease management for juice grapes was relatively easy this season. Downy mildew never got off the ground (literally) and powdery mildew was the only disease with much of an impact this year (we will ALWAYS have powdery mildew to deal with EVERYWHERE, EVERY YEAR). And, there is only a trace of black rot to be found in clusters of unsprayed vines, even where we hung infected fruit mummies in the trellis. All this is an indication that overwintering inoculum levels will be relatively low for starting disease cycles next spring. However, for wine grape growers with bunch rot susceptible varieties, Botrytis and sour rot are still continuing threats. I am seeing rots developing in Pinot Gris and Vignoles so far, but not to the extent I would expect in an average year. Our latest rot assessment in our Vignoles (currently at about 20 brix) shows an average severity of only about 4-5%, far below what we were seeing last year at this time. Bird damage in Pinot gris has lead to some sour rot development that has been difficult to control.



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FOR IMMEDIATE RELEASE

September 2016

Contact: Megan Burley, Farm Business Management Educator

Hoptoberfest 2016

Cornell Cooperative Extension of Erie County (CCE) is offering a workshop on October 20th for individuals who are interested in learning more about growing hops.

East Aurora, NY. Cornell Cooperative Extension of Erie County will host the 3rd annual Hoptoberfest, a growing hops workshop. This year's workshop will be taught by regional Cornell Specialists and experienced Erie County growers and brewers. This workshop will assist individuals in learning how to grow hops commercially.

In July 2012, Governor Cuomo signed legislation to support and strengthen New York's craft breweries with the goal of increasing demand for locally grown products as well as expanding economic development and promoting tourism by showcasing exceptional food and beverage products through the Taste NY initiative. Under the new law, in order to receive a Farm Brewery License in New York State, the beer must be made primarily from locally grown farm products; 20% local by 2018, 60% local by 2023 and after 2024, 90% of the hops and other ingredients used must be grown or produced in New York.

To help with this initiative, Cornell Cooperative Extension of Erie County has continued to offer Hoptoberfest the past three years. Hoptoberfest 2016 will begin at the Roycroft Printshop (formerly CCE Erie), parking lot with participants loading a bus to travel to Koester Hops in Eden, NY. The Koester's, previous Hoptoberfest alumni, will give participants an overview and lead a discussion about their successes and challenges as hops farmers and their expanding hops acreage. Following the tour and discussion at Koester's, the group will travel to Big Ditch Brewing Company in Buffalo, NY. Matt Kahn, partner in Big Ditch Brewing Company, will describe their new brew, a NYS Pale Ale, which will be made with local ingredients grown by Erie County farmers. He will also discuss what kind of product he and other brewers look for when purchasing brew products. To complete the evening, Tim Weigle, IPM specialist for the Lake Erie Regional Grape Program, will give a presentation about hops Integrated Pest Management (IPM).

The cost to attend is \$55 per person, and if enrolled in the CCE Erie Agriculture Program the cost is \$50 per person. The cost covers bus travel and appetizers at Big Ditch Brewing. Alcohol is available for purchase only by participants at Big Ditch Brewing Company.. For more information and to register please go to:

<http://erie.cce.cornell.edu/events/2016/10/20/hoptoberfest-2016>

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Table for: Insecticides for use in NY and PA:

<http://lergp.cce.cornell.edu/submission.php?id=69&crumb=ipm|ipm>

Crop Estimation and Thinning Table:

http://nygpadmin.cce.cornell.edu/pdf/submission/pdf65_pdf.pdf

Appellation Cornell Newsletter Index:

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Veraison to Harvest newsletters:

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Lake Erie Regional Grape Program Team Members:

Andy Muza, (ajm4@psu.edu) Extension Educator, Erie County, PA Extension, 814.825.0900

Tim Weigle, (thw4@cornell.edu) Grape IPM Extension Associate, NYSIPM, 716.792.2800 ext. 203

Kevin Martin, (kmm52@psu.edu) Business Management Educator, 716. 792.2800 ext. 205

Luke Haggerty, (llh85@cornell.edu) Grape Cultural Practices, 716.792.2800 ext. 204

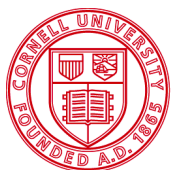
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