

# VERAISON TO HARVEST

Statewide Vineyard Crop Development Update #7

October 10, 2014

Edited by Tim Martinson and Chris Gerling



Cornell University  
Cooperative Extension

## Around New York...

### Statewide (Tim Martinson)

Harvest is hitting the home stretch. In our samples taken last Tuesday, October 7, ripening continues, but numbers are reaching a plateau in varieties nearing harvest (see fruit maturation table pp. 5-7). Number of samples processed also went down, as the last Cayuga White block, 3 of 5 Chardonnay blocks, Corot Noir, one Lemberger, one Riesling block, and Vignoles was harvested. Two remaining Chardonnay blocks, one in FL and one on Long Island show very different brix (18.5 vs. 22.0 °Brix) and TA (10.9 vs. 5.9 g/l), but average is close to where the 5 blocks last week was. Cabernet franc gained 0.5 °Brix and lost 0.5 g/L TA, while Merlot gained a modest 0.3 °Brix and acids dropped by 0.1 g/l. For the first time, average TA in the 10 Riesling blocks dropped below the magic number of 10 g/l that many winemakers use as a benchmark for harvest. Concorde, at 16.7 °Brix are ready for harvest (see Luke Haggerty's summary and Terry Bates' final Concord berry curve), while the single Catawba block gained 1.5 °Brix and dropped 1.4 g/l of TA.

In this week's feature article (p. 3-4), Chris Gerling outlines different types of winemaking trials underway at the Vinification and Brewing Laboratory in Geneva.

### Lake Erie (Luke Haggerty)

The weather in the Lake Erie region shifted from nearly two weeks of warm days with lots of sunshine to a full week of rain accompanied by cool temperatures. The extended forecast is calling for more rain, but the temperatures are expected to rise out of the 50s and into the mid-60s. Warm weather is always a welcome sight in October.

Going into the third week of Concord harvest, we are seeing sugar accumulation slowing down... but still on the rise. The 'berry curve' indicates that °Brix have begun to plateau, so we are not expecting to see any large weekly increases in °Brix. Here at CLEREL the Concord harvest is underway. Last Thursday and Friday (Oct. 2 & 3) we picked two loads that came in at 16.0 °Brix.



*October 6. Viticulture professor Justine Vanden Heuvel (top photo left) took her "Grapes to Wine" class to Long Island to learn about the Long Island industry. Top: Vanden Heuvel (at far left) and Extension viticulturist Alice Wise (next to Vanden Heuvel) with 20 Cornell students who made the trip. Bottom: students learning about red blotch (on Chardonnay) at Alice's research vineyard at the Long Island Horticultural Research and Extension Center (LIHREC) in Riverhead. More photos on p. 8.*

photo by Camila Tahim

The area continues to see grape berry moth (GBM) damage which is now causing secondary problems in the vineyards. Openings left by the GBM allows easy access for fruit flies to lay eggs and fill the grape berries with larvae. The wet weather paired with GBM damage has also caused an increase of secondary rots. Many growers are scouting to determine the extent of their GBM damage. Blocks that have bad infections are getting picked before secondary problems get worse. .

## **Finger Lakes (*Hans Walter-Peterson*).**

The recurring theme we've been hearing over the past week or so has been "the best September ever." However you might define that, and however you measure it, the month of September was really good for the grape industry in the Finger Lakes.

Growing degree days (GDDs) were about average for the month overall, but it was the sunny and dry conditions that were the main story. On average, we receive our highest monthly rainfall in September with about 3.7" overall (at Geneva). This year, the weather station at Geneva recorded less than 1" of rain, which makes it the driest September since 1973, when our records begin (just FYI, the second driest September over that span was way back in 2013). Disease development continues to remain in check for the most part. While botrytis infections are certainly present in many blocks, we are still not seeing (or smelling) much development of sour rot in these spots. Most of the rot that we do find is in places where heavier canopies or overlapping clusters prevent sprays, sunlight and wind from helping to reduce pressure.

The tail end of this year's Chardonnay, Pinot gris and Pinot noir crop is coming in this week. We picked most of our Corot Noir at the Teaching Vineyard this week, which had a small amount of sour rot in it thanks to the fairly heavy canopies on many of the vines this year. We have also started to see some early picking of Riesling this week, but assuming the fruit remains in good condition I'm guessing much of it will be left to hang a little longer.

Concord harvest is continuing to roll along. Growers have been telling us that tonnage is high again this year, with yields around 10 tons/acre or more not unusual around Branchport and on Bluff Point. The concern now is that, after two years of bearing heavy crops, there would seem to be a good probability that yields will be down significantly next year. Of course, that's what many of us thought after last year's record crop, so who knows what things will look like next year.

## **Long Island (*Alice Wise and Libby Tarleton*)**

In Long Island vineyards, Chardonnay harvest was in full swing this past week. Fruit has been very flavorful this year with strong varietal character balanced with good acidity. In the research vineyard, Dijon clones (75, 76, 78, 95, 96) had more moderate yields than the California selections (4, 5, 15, 17). Chardonnay 809, a shy yielder compared to other clones, had wonderful

muscat/orange peel flavors. The Dijon clones tend to have slightly lower acids (in the 7's) and nuanced flavors of citrus, melon, even sweet almond. All other things such as crop level being equal (often not the case as the CA clones can have very large clusters), the CA clones tend to have more prominent fruit flavors of citrus, apple and melon with firm acids. Opinions vary on these qualities, so all of this is to be taken with a grain of salt. Clones 4 and 5, both large clustered, high acid CA clones (8's-9's for cl.5 this year), are usually the last of the Chardonnay clones to ripen. Clone 4 in the research vineyard is still hanging as of this writing (Oct. 9).

A few blocks of Merlot and Cabernet Franc were harvested this week for rosé wine. Merlot is Long Island's most widely planted red, ~800 acres. Harvest for table wine is still a few weeks off, especially true given the relatively cool October weather. Interestingly, Cabernet Franc is the father of Merlot, contributing high quality phenolic compounds to its progeny (Robinson, J., et.al. 2012. *Wine Grapes*. Harper Collins, New York, NY, pp.629-630). Merlot's other parent is Magdeleine Noire des Charentes. Vines of this unknown variety were first found (re-discovered?) in the 1990's in an abandoned vineyard in northern Brittany. It was later verified through DNA analysis as a parent of Merlot, contributing precocity and fertility to its more famous child.

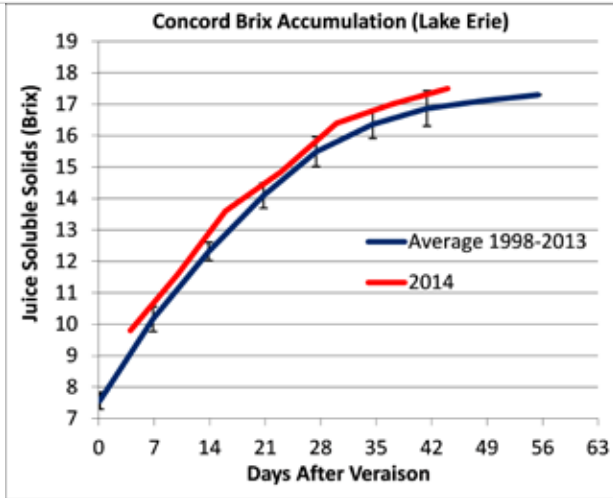
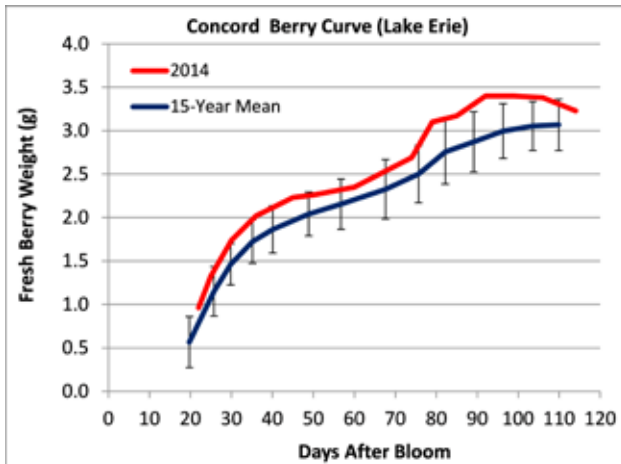
## **Hudson Valley (*Jim O'Connell*)**

Around the Hudson Valley, growers are harvesting Noiret, and Chambourcin. This past week at the Hudson Valley Lab, we harvested Landot noir, Syrah, Traminette and Concord. We plan to pick Noiret, and possibly Chelois next week. Riesling and Vidal blanc are still maturing with brix levels below 20. We will reevaluate them next week, though I suspect they still won't be ready to harvest. Cabernet sauvignon is close; however, the grapes still have a slight acidic and vegetal taste to them.

This past week, we received a total of 0.73" of rain at the Hudson Valley Lab. At first glance of the next week's forecast, it looked a bit gloomy. There is a chance of rain for almost every day next week. However, with the exception of midweek, which is predicted to be a morning shower, most events look like a passing shower. With some sunshine following the rain, it may not be all bad news. Certainly anything that is close to harvest may want to come down before the all morning shower. For us at the HVL, that would be Noiret and maybe Chelois.

FINAL REPORT:  
2014 LAKE ERIE CONCORD UPDATE:  
*Terry Bates*

October 9, 2014. Concord fresh berry weight in our phenology block at CLEREL decreased just slightly over the past week and the juice soluble solids continued to increase. The fruit in this block is fully mature and is next on the list for the picking schedule.



*A round of wines that is about to undergo malolactic fermentation.*  
photo by Chris Gerling

HARVEST AT THE LAB: RESEARCH  
WINEMAKING ACTIVITIES IN GENEVA  
*Chris Gerling*

Using the number of remaining *Veraison to Harvest* samples as a proxy, the 2014 wine-making season is nearing the halfway mark. Using the calendar as a guide, we can see October teens in the near future, so the grapes should be flying in most wineries or else will be flying shortly. If you're in the former category, you probably don't have the time or energy to read this newsletter, so it doesn't really matter what I'm writing now.



*Yeast inoculation at V&B scale*  
photo by Chris Gerling

If you're still reading and anticipating the bulk of the grape crushing action, however, you are probably expecting Riesling and the bigger reds. While you wait, I can fill you in on what's going on at the Vinification & Brewing (V&B) Laboratory.

We have quite a few projects underway, including trials we've been conducting for decades and those that we just cooked up in the last week or so (this is true, unfortunately). Of course, intense long-range planning that somehow winds up becoming last-second improvisation doesn't make us unique. It makes us a winery. Here are some of the things we're up to.

**Evaluation of grape breeding selections.** One major initiative that has been a part of the New York State Agricultural Experiment Station (NYSAES) for more than one hundred years is grape breeding. While the V&B lab doesn't go back quite that far, we continue to evaluate grape breeding selections for wine quality in collaboration with Bruce Reisch's program.

In the past ten-plus years we've been proud to be a part of the development of Corot Noir, Noiret, Valvin Muscat, Aromella and Arandell. Along with many "conventional" selections that show promising characteristics, Bruce, Steve Luce and the rest of the group have more no-spray candidates in the pipeline to possibly join Arandell.



The grape breeding process is a long-term commitment requiring plenty of patience (the original crosses from the above varieties were made between 1962 and 1995), and we're lucky to have such a productive working relationship.

**Vineyard trials.** Not everyone is interested in new grapes, however. Some vineyards are sticking with traditional varieties and are interested in the optimal management techniques for *vinifera* and established hybrids grown in eastern climactic conditions. Work by viticulturists from Nelson Shaulis to Justine Vanden Heuvel has dealt with training systems, rootstock, clones, canopy management, cropping levels and much, much more. We evaluate wine quality differences that might be found through these vineyard treatments.

This year's projects look at the influence of vineyard floor management and to what extent soil microbial communities affect fermentation. Just how we will be evaluating the soil microbes in a fermentation setting is going to be quite interesting, so stay tuned.

**Student projects.** We also have some enology student projects currently underway, and each of them is building on work done in the last few years across the research groups.

Right now Alex Fredrickson is looking at barriers to tannin retention in red hybrids. The basic question has revolved around the riddle of why hybrid grapes seem



*Fermentations from the hybrid tannin trial, including fermentation vessels with custom view ports.*

photo by Chris Gerling

to contain meaningful amounts of tannin but the wines perpetually lack it. Results from previous work in our lab and also concurrent work in Gavin Sacks' lab have helped to set Alex's course, and we are starting to form some pretty interesting explanations for and solutions to this problem.

We also continue to chase YAN in Riesling, and following on the heels of Mark Nisbet's work



*A flotilla of yeast getting ready for action.*

photo by Chris Gerling

is Camila Tahim, who will be looking at how YAN in the grapes and juice translates to volatile compounds (those we can smell) in the wine.

**Cider Fermentations.** One new activity in the V&B this year will be cider fermentations. We do lead regular cider workshops and students have done cider work, but this will be the first year that we have outside funding and an "official" research project focusing specifically on fermented (aka "hard") cider. There are quite a few wineries producing cider now to go along with the new standalone cideries, and the fermentation characteristics are quite similar. The NYSAES also has a long and important history with apples, so we think this is a natural fit. Finally, it's always interesting to see what we can learn about wine when seen through the lens of other products. Get ready for research ciders alongside the research wines next spring.

**Northern Grapes Project.** That's not all, of course. The Northern Grapes project continues, and this year in Geneva we have transitioned out of acid reduction and are looking into nitrogen, specifically the fate of nitrogen added to cold-climate varieties. Because of the exceptionally high sugar (and resulting alcohol) concentrations in the Minnesota varieties especially, recommendations call for very high YAN levels. Current work will do post-fermentation measurements to see how much nitrogen remains in the wine.

We also have a few trials going on where we have partnered with commercial wineries, and some spontaneous fermentation trials. It should be enough to keep us out of trouble until at least Halloween. For now, I hope your grapes are great and your machines are running smoothly. I'd also love to hear what you've got going on in your cellar—after you're a little more rested, of course.

## FRUIT MATURATION REPORT - 10/07/2014

Samples reported here were collected on **Tuesday, October 7**. Where appropriate, sample data from 2013, averaged over all sites is included. Tables from 2013 are archived at <http://grapesandwine.cals.cornell.edu/newsletters/veraison-harvest>

We are again reporting berry weight, brix, titratable acidity and pH, and yeast assimilable nitrogen (YAN). Graduate students Alex Frederickson and Camila Martin Tahim and Ben Gavitt are running the fruit composition and YAN assays.

### Cabernet Franc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	10/7/2014	E. Seneca	1.63	22.0	3.21	7.0	80
Finger Lakes	10/7/2014	W. Seneca	1.64	20.1	3.09	9.3	23
Finger Lakes	10/7/2014	Cayuga	1.84	20.3	3.25	7.6	40
Finger Lakes	10/7/2014	W. Seneca	1.80	20.1	3.20	7.4	35
Finger Lakes	10/7/2014	Teaching Vyd	1.77	21.5	3.31	5.7	54
Hudson Valley	10/7/2014	HARVESTED					
Long Island	10/7/2014	LI-05	2.09	22.2	3.42	6.0	27
Long Island	10/7/2014	LI-07	1.72	19.9	3.28	6.9	24
<b>Average</b>	10/7/2014		1.78	20.9	3.25	7.1	40
<i>Prev. Sample</i>	9/30/2014		1.71	20.4	3.22	7.6	45
<i>'13 Average</i>	10/7/2013		1.63	20.7	3.42	5.9	84

### Catawba

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	10/7/2014	Keuka	3.02	17.1	2.90	17.5	101
<i>Prev Sample</i>	9/30/2014	Keuka	2.95	15.6	2.81	18.9	158
<i>'13 Sample</i>	10/7/2013	Keuka	2.39	16.4	2.98	11.9	28

### Cayuga White

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/30/2014	HARVESTED					
Finger Lakes	9/30/2014	HARVESTED					
Finger Lakes	9/30/2014	HARVESTED					
<b>Final Sample</b>							
<i>Prev Sample</i>	9/30/2014		2.86	18.7	3.03	10.2	143
<i>'13 at Harvest</i>	9/16/2013		2.82	18.5	3.05	9.0	170

### Chardonnay

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	10/7/2014	HARVESTED					
Finger Lakes	10/7/2014	W. Seneca	1.73	18.5	2.99	10.9	52
Finger Lakes	10/7/2014	HARVESTED					
Finger Lakes	10/7/2014	HARVESTED					
Long Island	10/7/2014	LI-03	2.00	22.1	3.41	5.9	123
<b>Average</b>	10/7/2014		1.86	20.3	3.20	8.4	87
<i>Prev. Sample</i>	9/30/2014		1.66	20.7	3.18	8.2	81
<i>'13 at Harvest</i>	9/30/2013		1.61	20.4	3.35	7.4	135

### Concord

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	10/7/2014	Keuka	3.61	16.1	3.22	10.4	151
Finger Lakes	10/7/2014	W. Canandaigua	3.72	17.3	3.28	6.8	104
Lake Erie	10/7/2014	Portland	3.57	16.6	3.22	9.0	234
<b>Average</b>	10/7/2014		3.64	16.7	3.24	8.73	163
<i>Prev Sample</i>	9/30/2014		3.61	16.4	3.14	9.0	145
<i>'13 Sample</i>	10/7/2013		3.38	15.9	3.34	8.7	319

## Corot Noir

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	10/7/2014	HARVESTED					
<i>Final Sample</i>	9/30/2014	Teaching Vyd	2.34	18.2	3.22	7.9	73

## Gruner Veltliner

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes		HARVESTED					
<i>Final Sample</i>	9/16/2014	Teaching Vyd	1.63	18.0	3.20	6.8	139

## Lemberger

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	10/7/2014	Keuka	1.92	22.5	3.11	7.8	26
Finger Lakes	10/7/2014	HARVESTED					
<b>Average</b>	<b>10/7/2014</b>		<b>1.92</b>	<b>22.5</b>	<b>3.11</b>	<b>7.8</b>	<b>26</b>
<i>Prev. Average</i>	9/30/2014		2.00	21.3	3.15	8.3	96
<i>'13 Sample</i>	10/7/2013	Keuka	1.83	22.7	3.32	5.5	86

## Malbec

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island	10/7/2014	LI-06	2.69	21.0	3.54	6.0	47
<i>Prev Sample</i>	9/30/2014	LI-06	2.58	20.9	3.38	6.5	59
<i>'13 Sample</i>	10/7/2013	LI-06	2.33	22.1	3.70	6.4	149

## Marquette

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
<i>Final Sample</i>	9/2/2014	Teaching Vyd	1.09	22.7	2.98	12.9	

## Merlot

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Hudson Valley	10/7/2014	HV Lab	2.06	21.5	3.58	6.0	125
Long Island	10/7/2014	LI-04	2.31	19.5	3.67	4.6	49
Long Island	10/7/2014	LI-08	1.73	20.0	3.40	6.4	24
<b>Average</b>	<b>10/7/2014</b>		<b>2.03</b>	<b>20.3</b>	<b>3.55</b>	<b>5.7</b>	<b>66</b>
<i>Prev. Average</i>	9/30/2014		1.94	20.0	3.47	5.8	81
<i>'13 Average</i>	10/7/2013		1.79	20.9	3.76	4.5	116

## Niagara

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Lake Erie	9/30/2014	HARVESTED					
<i>Final Sample</i>	9/23/2014	Portland	4.40	15.1	3.21	6.6	172
<i>'13 FinalSample</i>	9/23/2013	Portland	4.01	14.8	3.28	6.8	335

## Noiret

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Hudson Valley	10/7/2014	HV Lab	2.02	20.1	3.40	7.7	104
Lake Erie	10/7/2014	Fredonia	2.05	18.4	3.21	10.8	179
<b>Average</b>	<b>10/7/2014</b>		<b>2.03</b>	<b>19.3</b>	<b>3.31</b>	<b>9.3</b>	<b>142</b>
<i>Prev Sample</i>	10/7/2013		1.82	17.2	3.44	8.8	267
<i>'13 Sample</i>	9/30/2013		1.78	17.9	3.49	9.6	252

## Pinot Noir

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/30/2014	HARVESTED					
<i>Prev Sample</i>	9/23/2014	E. Seneca	1.39	20.5	3.12	8.9	88
<i>'13 at Harvest</i>	9/23/2013	E. Seneca	1.58	20.6	3.13	8.0	94

## Riesling

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	10/7/2014	E. Seneca	1.66	19.0	3.00	11.6	37
Finger Lakes	10/7/2014	E. Seneca	2.04	19.4	3.08	9.7	71
Finger Lakes	10/7/2014	W. Seneca	1.36	19.6	2.98	10.8	36
Finger Lakes	10/7/2014	E. Seneca	2.01	19.8	3.16	10.1	140
Finger Lakes	10/7/2014	CL 90 Cayuga	1.77	19.9	3.07	9.8	84
Finger Lakes	10/7/2014	Keuka	1.41	18.8	3.09	8.8	68
Finger Lakes	10/7/2014	W. Seneca	1.96	19.1	3.06	10.3	104
Finger Lakes	10/7/2014	W. Seneca	1.80	18.7	3.04	10.2	91
Finger Lakes	10/7/2014	W. Canandaigua	1.87	17.9	3.05	11.2	117
Finger Lakes	10/7/2014	Teaching Vyd	1.54	18.2	3.05	8.4	41
Hudson Valley	10/7/2014	HV Lab	1.96	19.0	3.40	6.9	139
Lake Erie	10/7/2014	Portland	2.00	17.3	3.12	8.9	129
Long Island	10/7/2014	HARVESTED					
<b>Average</b>	<b>10/7/2014</b>		<b>1.78</b>	<b>18.9</b>	<b>3.09</b>	<b>9.7</b>	<b>88</b>
<i>Prev Sample</i>	9/30/2014		1.62	18.5	3.02	10.3	87
<i>'13 Sample</i>	10/7/2013		1.58	17.7	3.18	8.3	125

## Sauvignon Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island		HARVESTED					
<i>Final Sample</i>	9/16/2014	LI-02	1.44	19.5	3.16	7.5	63
<i>'13 at Harvest</i>	9/9/2013	LI-02	1.23	22.1	3.23	8.1	141

## Seyval Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
<i>Final Sample</i>	9/9/2014	HARVESTED	1.82	18.2	3.04	9.0	148
<i>'13 at Harvest</i>	9/9/2013	Cayuga	1.77	19.9	3.22	6.4	126

## Traminette

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	10/7/2014	Keuka	2.26	18.8	3.01	10.8	163
Hudson Valley	10/7/2014	HV Lab	2.07	22.0	3.21	7.0	44
Lake Erie	10/7/2014	Portland	2.06	22.6	3.22	9.7	230
<b>Average</b>	<b>10/7/2014</b>		<b>2.13</b>	<b>21.1</b>	<b>3.15</b>	<b>9.2</b>	<b>145</b>
<i>Prev Sample</i>	9/30/2014		1.98	20.5	3.08	9.3	136
<i>'13 Sample</i>	10/7/2013		1.99	21.2	3.19	8.4	158

## Vidal Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	10/7/2014	Teaching Vyd	2.15	22.8	3.27	8.5	85
<i>Prev Sample</i>	9/30/2014	Teaching Vyd	2.18	21.0	3.16	9.6	75

## Vignoles

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	10/7/2014	HARVESTED					
Finger Lakes	10/7/2014	HARVESTED					
<i>Final Sample</i>	9/30/2014		1.88	22.6	2.97	16.1	207
<i>'13 at Harvest</i>	9/30/2013	W. Seneca	1.67	23.9	3.16	12.9	179

## Zweigelt

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
<i>Final Sample</i>	9/16/2014	Teaching Vyd	1.82	17.0	3.17	7.3	149



## CLASS TRIP TO LONG ISLAND VINEYARDS



*Continued from page 1: Left: Larry Perrine of Channing Daughters (center, with cap) provides feedback to student Anne Repka while she punches down Lemberger. Right: Barbara Shinn and David Paige (far right) discuss water management strategies with VIEN 2205 students at Shinn Estates Vineyard.*

*photos by Justine Vanden Heuvel*



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