Veraison to Harvest

Statewide Vineyard Crop Development Update #3

September 13, 2013

Cornell University Cooperative Extension

Edited by Tim Martinson and Chris Gerling

Around New York...

Statewide *(Tim Martinson).*

With cooler weather (samples preceded this week's 90+ degree temperatures early in the week), ripening slowed to a more typical pace this week after last week's enormous jump in brix levels and drop in titratable acidity (see table p4-6).

Overall, sugars jumped by 1.2-2.3 °Brix, and titratable acidity dropped by 0.5-1.2 g/liter. Sugars are 2-4 °Brix lower than last year at this time (although some have caught up, see Sauvignon blanc and Seyval blanc), and TA (no surprise) are 2-4 g/l higher than last year at this time. Harvest has begun for Northern grape cultivars with La Crescent coming off at Clayton this week (*see article p.4*).

If you are concerned about the new imported insect Spotted Wing Drosophila, the article by Alice Wise (*page 3*) should be reassuring. Mechanical crop thinning in Concords, applied by National Grape Coop. growers on an estimated 50% of Lake Erie acreage, according to Rich Erdle, Director of Grower Relations appears to be having the desired effect (*see Lake Erie update below).*

Lake Erie (*Luke Haggerty).*

Weather this past week was warmer than average and we accumulated more growing degree days than last week. September 10 and 11th were ideal weather conditions here in the Lake Erie grape region with highs in the mid to upper 80's and lots of sunshine. The eastern portion of the Lake Erie grape belt is getting a little dry with some areas not receiving any precipitation for over two weeks. However, some central and western areas are seeing more rain than they normally do accumulating more than 2 inches from the 1st to the 12th of September. Rain in these areas has prolonged the battle against downy mildew and *botrytis* bunch rot.

Harvested this week were Delaware, Vignoles, Marquette, La Crescent, and Cayuga White. The focus for this coming week will be to finish the rest of the early ripening grapes as the start of the Niagara harvest is only a week away. The National Grape Cooperative reported a tentative start date of Sept. 20 for Niagara at the North East, PA receiving location. The Concord harvest will start the following week. The big question we are all asking is whether or not the sugars are where they need to be.

Leaf removal at trace bloom. *Alice Wise removed leaves at the six lowest nodes at trace bloom on this Pinot noir vine (Clone 4) in an effort to reduce cluster compactness. Although the data is still out, the clusters appear to be looser than your average Pinot noir cluster.*

Photo by Alice Wise

The Concord crop load is definitely having an effect on the ripening process as variation is starting to show between vineyards that have been mechanically fruit thinned and the ones that have not. On average the areas that ***have*** been thinned were showing a soluble solid content of 13.5° Brix. Vineyards that ***have not*** been thinned and left with a heavy crop load are moving much slower with reports of Brix levels between 9 and 10. The area Concord average is approximately 12.2° Brix.

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

Ripening has progressed quickly the last few weeks on Long Island. August was dry with only 2" or so total rainfall. Though we've had 3.5" in September, most of that fell on Sept. 3. The sunny dry weather has been a real pleasure. Harvest of fruit for sparkling wine has dwindled. Many blocks are now coming off for still wine and rose including Pinot Noir, Chardonnay and Sauvignon Blanc. There are pockets of *botrytis* and a touch of sour rot but for the most part, grapes are fairly clean especially compared to previous seasons. Fruit flies can be found but have been pretty minimal so far. Our entomologists tell us that spotted wing drosophila trap catches are minimal and they have not been able to find the distinctive SWD damage on clusters *(see article, p. 3).* There is cautious optimism about harvest, realizing that there is still another 6 or more weeks to go.

In the research vineyard, we harvested Auxerrois, an Alsatian white, at 20.8 Brix, pH 3.4, and 6.3 g/l TA. Auxerrois is fairly rot prone so we elected to harvest when flavors were good and rot was not yet an issue. Our Pinot Noir was also ready this week. The numbers ranged from 20-22 Brix and 8-9 g/l TA. About 10% of clusters had relatively pure Botrytis, with severity ranging from one berry to about 20% of the cluster affected. The susceptibility of Pinot Noir and Chardonnay to cluster rots provided the motivation for a few early bloom cluster zone leafing experiments this year. We removed 6 basal leaves (and laterals) at trace bloom on two sites of each variety. So far it appears that the early leafing did induce a reduction in berry set but we still have to crunch the numbers to be sure.

Hudson Valley (*Steve Hoying*).

Weather this past week has been generally mild with temperatures over last weekend averaging in the mid 70's with lows in the 40's. This quickly changed with brutally high temperatures in the 90's climaxing on Wednesday. We had also widely scattered showers over the entire region. Some regions suffered with strong winds and thunderstorms. Rainfall was truly hit or miss this week.

Sour rot is showing up where you would expect it. Vignoles appears to be the hardest hit as is usual here. *Botrytis* is still surprisingly quiet. We are holding our breath. Perhaps those early sprays before bunch closure and leaf removal efforts to expose clusters were done on time and effective this year.

Bees were very active this week during the hot spell and are zeroing in on bird-pecked fruit. Looks like we will have our share of empty shells where bird control was not adequate.

Brix levels continue to climb with Vignoles at 21, Pinot noir and gris 20.3, Chardonnay 20.4, Gewurztraminer 20.2, Diamond 15.5. Other varieties of interest that still need more time include Seyval blanc 17.5, Valvin muscat 16.5, Vidal 14.1.

This is a good time to look for nutrient deficiencies in the vineyard. Stress on the vines bring out classic nutrient deficiency symptoms. Magnesium and potassium deficiency is apparent in some vineyards that are low in these nutrients here in the valley. I see it particularly on La Crescent but there is some in almost every vineyard visited.

Finger Lakes (*Hans Walter-Peterson*).

The number of vineyards with crews and harvesters in them grew this week, as more varieties started to achieve harvest standards for certain products.

Chardonnay and Pinot noir are being harvested this week for sparkling production and for rosé. I imagine that we will start to see some Chardonnay and Pinot Gris getting picked within the next week or so for still wines. Early red hybrids like Foch, Leon Millot and Baco are also being picked right now.

Constellation has been processing Elvira recently, but brought in some early Concords this week for their kosher products. They expect to start their standard Concord harvest sometime next week. According to the this week's sampling results, sugar levels in Concord on Keuka and Canandaigua Lakes are at about 14 brix. Growers at both of these sampling sites thinned their crops earlier this year. We are not getting a sample from a vineyard that was not thinned, but Luke Haggerty with the Lake Erie Regional Grape Program mentioned that brix in unthinned vineyards in the Lake Erie region is lagging at around 10 brix right now, while thinned vineyards were 3-4 points higher. I would expect that we have similar differences between thinned and unthinned Concord vineyards in our region.

Downy mildew infections, while still present on younger leaves in canopies, have seemed to slow down to some extent compared to how they were spreading earlier this year. *Botrytis* is certainly present, but also seems to be keeping in check in most vineyards as well (knock on wood). Some sour rot can also be found (and smelled) in a few blocks here and there, and growers are already being pretty aggressive about culling these clusters out of the vineyard before harvest..

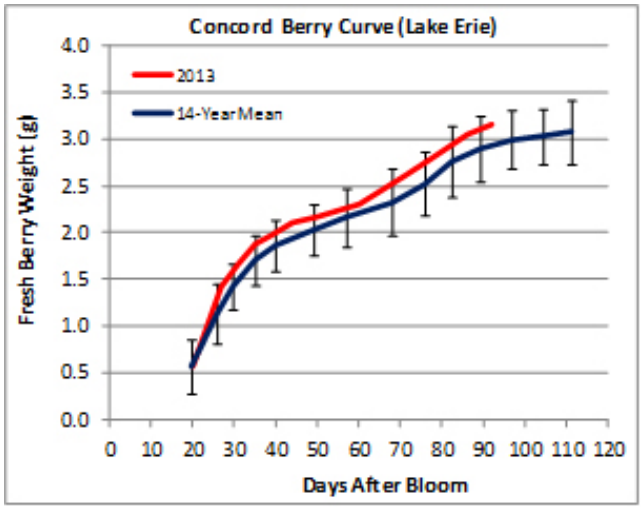
USA field *and Concord vineyard, on the bluff at Keuka Lake.*

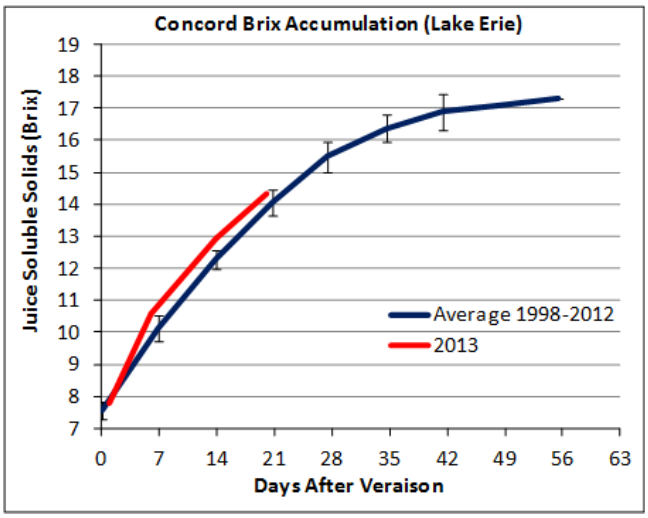
Photo by Tim Martinson

2013 Lake Erie Concord Update

Terry Bates

After a fairly quick start to juice soluble solids accumulation the first week after veraison, Concord has followed a more average ripening trend the past two weeks. Phenology vines at the Cornell Lake Erie Research and Extension Laboratory (CLEREL) in Portland, NY averaged 14.3° Brix this week with 16° Brix projected around 35 days after veraison. In CLEREL's nine Concord test sites throughout the Lake Erie region, juice soluble solids ranged between the mid-13's to mid-14's. Berry weight continues to run slightly above the long-term mean and we are still predicting 3.2-3.4 gram berries by harvest.





Concord berry weight (top, red line) and brix (bottom) compared to long term average for standard concord vines at the CLEREL laboratory in Portland, NY.

Spotted Wing Drosophila. *After seeing these spotted-wing drosophila (new Asian species) in such abundance on my 3 backyard bushes, I started wondering if they would move to grapes next. The article (below) by Alice Wise about monitoring on grapes in Long Island reassures me that even if they are abundant on small fruits, they are not likely to be a big issue on grapes. - TEM*

Photo by Tim Martinson

Will Spotted Wing Drosophila move from small fruit on to your ripening grapes?

Alice Wise and Faruque Zaman

(Reprinted from September 12 Long Island Fruit and Vegetable update.)

In the last few years there has been great concern among grape growers about spotted wing drosophila (SWD). While many fruit fly species will infest damaged fruit, SWD has the unique ability to lay eggs within intact fruit.

Fortunately, research by CCE Entomologist Faruque Zaman and others have confirmed that while raspberry and blueberry are often attacked, grape is not a preferred host for SWD. He has monitored SWD traps in local vineyards for the last several months. Although many fruit flies are some- times trapped, the proportion of SWD remains low.

As of September 5, 7/trap/week were found in vineyards. Several growers have requested identification of fruit fly larvae in infested clusters. In examining these clusters, Zaman has not seen typical signs of SWD egg-laying and in past work damaged and intact fruit held in cages have yielded very few or no SWD. (Since identification of fruit fly larvae is difficult, larvae must be reared to adulthood, a process taking 10-12 days.)

Unlike other fruit fly species, SWD eggs develop a pair of characteristic white breathing tubes extending from within the intact berry, visible under high magnification. Based on trap catches, rearing from fruit and close examination of damaged clusters, SWD is currently not a concern for local vineyards. Zaman will continue to monitor both traps and fruit for SWD. (FZ & AW)

Viticulture, enology and marketing for cold-hardy grapes

La Crescent at Clayton

Photo by Tim Martinson

Project Focus: Crop Level adjustment on La Crescent

Chrislyn Particka and Tim Martinson

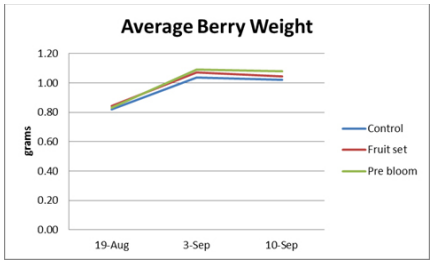
This past Tuesday, we harvested a small trial of La Crescent grapes at Coyote Moon vineyards near Clayton NY. We are calling it the 'crop load' study, although it might more properly be called the 'cluster thinning' trial. Cluster thinning is used by growers to adjust for overcropping, the idea being that with less fruit on the vine, the remaining grapes will ripen more evenly – and fruit chemistry will be improved at harvest time. In particular, with the Northern Grapes cultivars, the hope is that managing the cropping level might provide growers with a means to reduce the high acids that are characteristic of these cultivars.

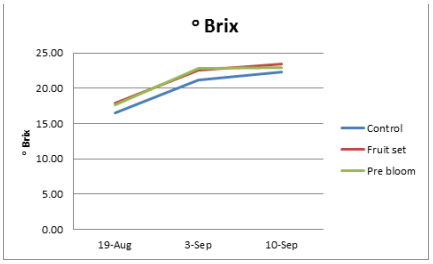
The study: We did three treatments. 1) Control (nothing), and two cluster thinning treatments, where we removed all but the basal cluster (1 cluster per shoot) at either 2) before bloom (flower thinning) or 3) at fruit set. Here's how the yield components looked. Unthinned vines had 86 clusters per vine, and the thinned treatments had 38 (fruit set) or 47 clusters. Yield was cut in half from 10 lb/vine to 5 lb/vine. The result? The unthinned grapes had slightly lower brix (22 vs 23 in prebloom thinned), slightly lower berry weight, but no difference in Titratable Acidity or pH.

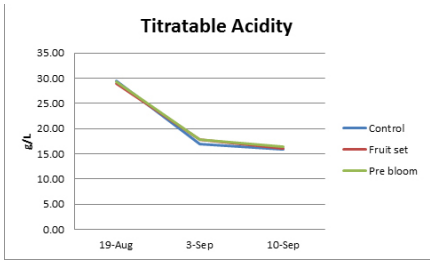
Conclusions from this year: In these vines, this year, removing half the clusters and cutting the yield in half did not change the fruit chemistry as one would hope. There could be several reasons for this: 1) These are young vines, and not up to their full cropping potential yet. 2) Even the high crop load did not challenge the vines. 10 lb/vine at 7x9 ft spacing is about 3.5 tons per acre. 3) clusters were poorly filled, in many cases, which could be a carryover effect of nutrient deficiencies (since corrected) in 2012. 4) Ample moisture and vine growth produced a bigger canopy (and higher vine capacity) than would be the case in drier years.

Table 1. La Crescent yield components and fruit composition at harvest, Clayton NY, September 10,2013

Treatment	Clusters per Vine	Yield (lb)	Cluster wt (g)	Berry wt (g)	Berries per cluster	Avg berry wt. (g)	pH	°Brix	TA (g/L)	YAN
Control	86.5 a	10.2 a	53.3	1.04 ab	51.0	1.02	2.94	22.4 a	16.0	133
Fruit Set	47.1 b	5.4b	50.5	1.03 b	49.2	1.04	2.94	23.4 ab	16.1	128
Pre Bloom	38.5 b	4.6 b	56.0	1.07 a	51.9	1.08	2.96	22.8 b	16.4	80







*The **Northern Grapes Project** is funded by the USDA's Specialty Crops Research Initiative Program of the National Institute for Food and Agriculture, Project #2011-51181-30850*

Fruit Maturation Report - 9/9/2012

Samples reported here were collected on **Monday, September 9.** Where appropriate, sample data from 2012, averaged over all sites is included. Tables from 2012 are archived at http://grapesandwine.cals.cornell.edu/cals/grapesandwine/veraison-to-harvest/2012.cfm.

We are again reporting berry weight, brix, titratable acidity and pH, and yeast assimilable nitrogen (YAN), as part of a joint project with Anna Katharine Mansfield and Lailiang Cheng. Graduate student Mark Nisbit is running the YAN assays as part of his Ph D project, and other students from the Enology lab are running samples . - TEM

Cabernet Franc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/9/2013	E. Seneca	1.86	17.4	3.02	9.4	36
Finger Lakes	9/9/2013	W. Seneca	1.21	16.7	3.05	10.5	48
Finger Lakes	9/9/2013	Cayuga	1.58	17.2	3.08	9.3	96
Finger Lakes	9/9/2013	W. Seneca	1.44	17.4	3.06	10.1	86
Hudson Valley	9/9/2013	HVL	1.56	17.5	3.26	9.5	148
Lake Erie	9/9/2013	Portland	1.60	14.6	3.16	11.3	186
Long Island	9/9/2013	LI-05	1.84	18.8	3.27	6.7	78
Long Island	9/9/2013	LI-07	1.25	18.6	3.12	10.9	66
Average	**9/9/2013**		**1.54**	**17.3**	**3.13**	**9.7**	**93**
Prev Sample	9/3/2013		1.50	15.5	3.03	11.3	80
'12 Average	9/10/2012		1.59	19.1	3.20	7.17	63

Catawba

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/9/2013	Keuka	2.21	14.2	2.74	18.6	95
Prev Sample	9/3/2013	Keuka	1.99	12.1	2.62	23.9	92
'12 Sample	9/10/2012	Keuka	2.29	16.2	2.86	11.2	57

Cayuga White

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/9/2013	Keuka	3.06	16.1	3.02	10.7	161
Finger Lakes	9/9/2013	Cayuga	2.95	17.7	3.13	8.7	160
Average	**9/9/2013**		**3.00**	**16.9**	**3.08**	**9.7**	**160**
Prev Sample	9/3/2013		2.71	15.4	3.00	10.8	178
'12 at Harvest	9/5/2012	HARVEST	2.52	18.8	3.18	8.7	284

Chardonnay

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/9/2013	Cayuga	1.50	16.0	3.01	11.2	193
Finger Lakes	9/9/2013	W. Seneca	1.47	17.9	3.05	10.3	126
Finger Lakes	9/9/2013	W. Seneca	1.50	16.1	3.06	9.3	130
Long Island	9/9/2013	LI-03	1.56	19.9	3.39	7.6	233
Average	**9/9/2013**		**1.51**	**17.5**	**3.13**	**9.6**	**171**
Prev. Sample	9/3/2013		1.51	16.4	3.10	10.6	149
'12 Average	9/10/2012		1.47	20.1	3.38	7.3	204

Concord

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/9/2013	Keuka	2.68	13.9	3.06	9.7	131
Finger Lakes	9/9/2013	W. Canandaigua	2.96	13.9	3.02	9.2	95
Lake Erie	9/9/2013	Portland	3.55	13.5	3.14	13.9	327
Average	**9/9/2013**		**3.06**	**13.8**	**3.07**	**10.9**	**184**
Prev Sample	9/3/2013		2.80	12.2	2.96	12.4	191
'12 Sample	9/10/2012		3.20	16.5	3.32	7.4	208

Lemberger

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/9/2013	Keuka	1.81	20.2	3.01	9.3	24
Prev Sample	9/3/2013	Keuka	1.71	18.4	2.99	8.4	36
'12 Sample	9/10/2012	Keuka	1.71	20.4	3.31	6.3	210

Malbec

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island	9/9/2013	LI-06	2.25	18.1	3.25	8.7	168
Prev Sample	9/3/2013	LI-06	2.39	16.4	3.13	12.6	155
'12 Sample	9/10/2012	North Fork S	2.48	17.6	3.36	10.2	248

Merlot

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Hudson Valley	9/9/2013	HVL	1.37	17.9	3.37	7.8	155
Long Island	9/9/2013	LI-04	1.74	19.3	3.41	8.6	103
Long Island	9/9/2013	LI-08	1.69	18.8	3.29	10.0	122
Average	**9/9/2013**		**1.60**	**18.7**	**3.36**	**8.8**	**127**
Prev. Sample	9/3/2013		1.68	17.2	3.32	7.6	131
'12 Average	9/10/2012		1.92	18.8	3.57	5.1	105

Niagara

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Lake Erie	9/9/2013	Portland	4.48	14.2	3.22	10.4	269
Prev Sample	9/3/2013	Portland	3.95	12.5	3.07	9.9	270
'12 at Harvest	9/5/2012	HARVEST 2012	3.84	16.6	3.26	7.2	205

Noiret

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Hudson Valley	9/9/2013	HVL	1.47	15.6	3.28	8.8	206
Lake Erie	9/9/2013	Fredonia	1.94	15.3	3.12	13.3	272
Average	**9/9/2013**		**1.71**	**15.5**	**3.20**	**11.0**	**239**
Prev Sample	9/3/2013		1.71	14.1	3.12	12.7	235
'12 Sample	9/10/2012		1.63	18.5	3.32	7.9	233

Pinot Noir

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/9/2013	E. Seneca	1.46	19.0	3.11	8.8	54
Prev Sample	9/3/2013	E. Seneca	1.45	17.2	3.05	8.9	43
'12Sample	9/10/2012		1.46	20.9	3.52	6.4	222

Riesling

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/9/2013	E. Seneca	1.38	16.3	2.86	11.7	46
Finger Lakes	9/9/2013	E. Seneca	1.44	16.2	2.82	12.2	25
Finger Lakes	9/9/2013	W. Seneca	1.13	16.4	2.85	13.1	28
Finger Lakes	9/9/2013	E. Seneca	1.38	15.1	2.93	12.4	106
Finger Lakes	9/9/2013	CL 90 Cayuga	1.45	14.9	2.91	13.1	122
Finger Lakes	9/9/2013	Keuka	1.38	17.3	2.90	12.0	64
Finger Lakes	9/9/2013	W. Seneca	1.48	17.5	2.95	12.4	161
Finger Lakes	9/9/2013	W. Seneca	1.45	17.4	2.94	13.1	107
Finger Lakes	9/9/2013	W. Canandaigua	1.51	14.2	2.96	14.9	219
Hudson Valley	9/9/2013	HVL	1.46	15.9	3.24	10.0	171
Lake Erie	9/9/2013	Fredonia	1.68	14.3	3.03	10.4	141
Long Island	9/9/2013	LI-01	1.27	17.9	3.13	10.0	140
Average	**9/9/2013**		**1.42**	**16.1**	**2.96**	**12.1**	**111**
Prev Sample	9/3/2013		1.34	14.6	2.93	12.6	112
'12 Sample	9/10/2012		1.50	18.2	3.03	8.8	77

Sauvignon Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island	9/9/2013	LI-02	1.23	22.1	3.23	8.1	141
Prev Sample	9/3/2013	LI-02	1.31	20.0	3.19	8.7	143
'12 Sample	9/10/2012	North Fork	1.70	20.2	3.40	7.5	141

Seyval Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/9/2013	Cayuga	1.77	19.9	3.22	6.4	126
Prev Sample	9/3/2013	Cayuga	1.51	18.4	3.15	7.1	91
'12 Sample	9/10/2012		1.71	19.4	3.39	6.3	194

Traminette

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/9/2013	Keuka	1.97	18.8	2.83	12.1	77
Hudson Valley	9/9/2013	HVL	1.72	17.7	3.10	9.9	72
Lake Erie	9/9/2013	Fredonia	1.86	14.9	3.02	10.5	86
Average	**9/9/2013**		**1.85**	**17.1**	**2.98**	**10.8**	**79**
Prev Sample	9/3/2013		1.83	14.7	2.97	12.0	91
'12 Sample	9/10/2012		1.75	19.3	3.16	7.4	97

Vignoles

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/9/2013	VSP Keuka	1.62	22.2	3.03	15.9	198
Finger Lakes	9/9/2013	W. Seneca	1.72	22.3	3.06	15.5	152
Average	**9/9/2013**		**1.67**	**22.3**	**3.05**	**15.7**	**175**
Prev Sample	9/3/2013		1.63	20.1	3.01	14.7	155
'12 Sample	9/10/2012		1.32	24.5	3.27	8.8	163

La Crescent Harvest at Clayton

Many hands make short work. We were fortunate to have several members of the Coyote Moon Vineyards crew help out with La Crescent harvest last week, along with Cornell employees Bill Wilsey, Steve Lerch, and Chrislyn Particka. Our thanks to the Randazzo family and Coyote Moon Vineyards for their cooperation and collaboration! - TEM

***Left** : Mary Randazzo (kneeling), Val Hickman, Bill Wilsey, and Steve Lerch, **Middle:** Cheyenne Littlefield, **Right:** Val Hickman (again) and Christina LaParr - all harvested La Crescent on Tuesday, September 10. Lower Right: Chrislyn Particka (Cornell) organized the effort and collected berry samples for analysis.*

Photos by Tim Martinson

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Long Island Grape Program

Finger Lakes Grape Program

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Eastern New York Fruit and Vegetable Program