

VERAISON TO HARVEST

Statewide Vineyard Crop Development Update #3



Cornell University
Cooperative Extension

September 16, 2011

Edited by Tim Martinson and Chris Gerling

Around New York...

Statewide (*Tim Martinson*).

No hurricanes this week and some sunshine, but another shower moved across NY on Thursday, dropping significant rainfall. Most varieties gained 0.5-1 ° brix this week (see Fruit Maturation table pp. 4-6) – with labrusca types Catawba and Concord gaining 2°. Acids are dropping into harvest range for some mid-season varieties (Pinot noir, Lemberger, Sauvignon blanc) – but brix is often 2-4 ° lower than last year at this time. Later season whites (Riesling and Traminette) at 10 -11 g/l titratable acidity – are getting closer to harvest range – but again with 2-4° lower brix relative to acids. On the whole, harvest seems to be running almost exactly a week behind last year's torrid pace – but still ahead of our mythical 'average year'. Fruit rots remain an issue in susceptible varieties, with some Vignoles blocks (botryzied flavors are part of the package) slated for harvest – in part to limit botrytis development.

Finger Lakes (*Hans Walter-Peterson*)

One of the real signs that harvest season is upon us in New York is when the smell of Concord grapes permeates the air. You can usually pick it up before harvest starts, but once the harvesters are out and picking starts, it gets even more pronounced. The brunt of Concord harvest got going this week, and early reports from growers are that berries have sized up a bit since a few weeks ago thanks to the rain, so yields are looking good right now. Brix levels are generally in the 13-15° range right now.

Most of the Cayuga White has been harvested by now, but not all, and there are a few blocks with early hybrid varieties like Baco and GR7 still hanging. Chardonnay and Pinot noir for sparkling wine have started to arrive at crush pads also, but picking for table wines will probably hold off for another week or so.

The main concern for most growers right now continues to be the potential for disease development due to splitting berries. Growers who have varieties that will be hanging for another week or more will want to be scouting diligently for new botrytis infections on clusters to determine if further protection is warranted. New downy mildew infections are also starting to pop up here and



The grape harvester at the Cornell Lake Erie Research and Extension Laboratory (CLEREL) is tuned up and ready to roll for harvest next week at Portland, NY.

Photo by Jodi Creasap Gee

there on leaves higher up in the canopy, especially in vineyards that struggled with DM infections earlier in the season - another thing to keep an eye on during what is already a very busy time of year.

Lake Erie (*Jodi Creasap Gee*).

The smell of methyl-anthranilate is thick in the air as harvest continues to move along. Again, with the recent rain showers, we have seen some splitting of berries, which are now rather large across several varieties. One variety to note is Niagara. Reports have come in from around the belt of larger-than-average-sized berries and enormous clusters. This season has been a good one, one that followed another good season with a small crop and no spring frost to cut crop potential. These conditions set the region up for a nice crop – for both ConCORDS and NiAGARAS – this year, and we are definitely seeing that now. Although many of the hybrid varieties have been harvested over the past couple of weeks, National Grape Cooperative plans to start the Niagara harvest within the next several days. The fruit at CLEREL is scheduled to be picked next week, so the crew here is getting ready to add 'harvest' to their already-full 'to-do' list.

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

Sparkling wine grapes came off this week. Some whites and maybe even Pinot Noir may come in next week. In the research vineyard, we harvested Auxerrois at 18.9 Brix, 4.95 g/l TA and 3.28 pH. Gruner Veltliner came in at 18.2, 5.4 and 3.22. Both were starting to break down. Gruner is reportedly a later ripening white though since vines are only 3 yrs old, precocious fruit is to be expected. Auxerrois is a lesser known Alsatian variety. Gruner Veltliner (see photo below) is an Austrian variety, variously described as fruity, dry, spicy and so on. In *Vines, Grapes and Wine*, Jancis Robinson endorses Gruner as best enjoyed young but always a pleasurable wine. There is a varietal version on Long Island and there will be several more in the coming years. Both these varieties represent an exploration of earlier ripening, aromatic, unique whites.



Gruner Veltliner clusters at the Long Island Horticultural Research and Extension Center in Riverhead

Photo by Alice Wise

Hudson Valley (*Steven McKay & Steve Hoying*).

More rain is falling in the Hudson Valley as this summary is being written. In general, moderate to warm temperatures have allowed ripening to continue, but sugars have been slow to rise with all the moisture. It is hoped that a predicted drier period for the coming week will be helpful.

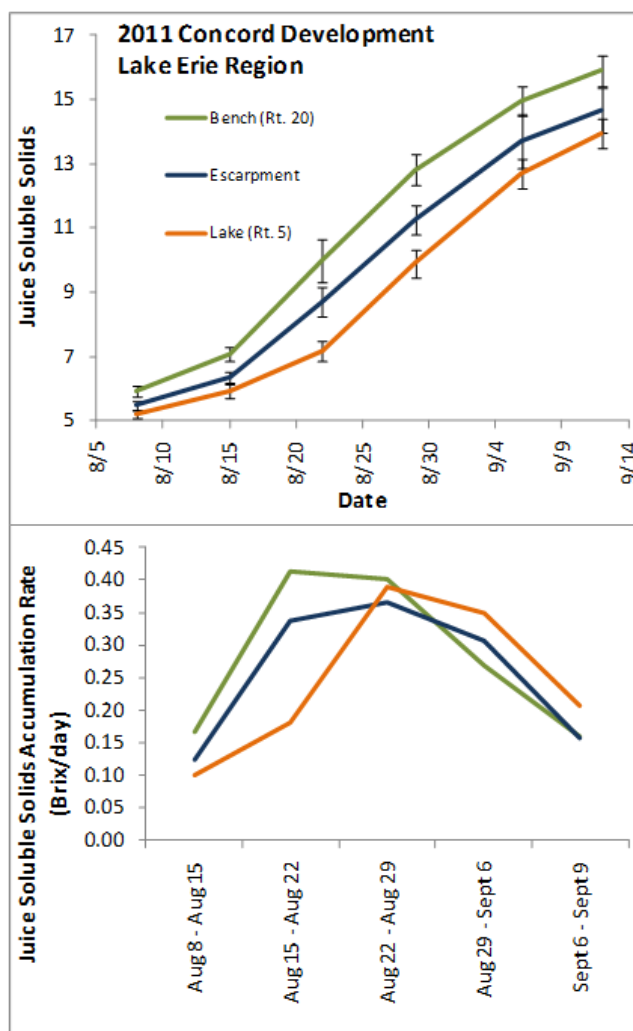
Sour rot and *botrytis* have continued to be a problem in some varieties. At Whitecliff Vineyards, Chardonnay has been harvested for sparkling wine base with good acid readings, and brix at about 15.5 or 16. Vignole has been harvested to avoid further problems with rots. Some splitting was reported in Reisling and Chardonnay in Columbia County, but this problem does not appear to be widespread. Although sour rot continues to be a problem in the vineyard at the Hudson Valley Lab, brix readings have been higher than expected.

LAKE ERIE CONCORD RIPENING PROFILE

Terry Bates

Cornell Lake Erie Research and Extension Laboratory

Concord juice soluble solids ranged from 14 to 16° Brix across the Lake Erie Production region this week. Route 20 Bench Zone vineyards jumped off to an early start in August followed by the higher elevation Escarpment vineyards and cooler Lake Zone vineyards. The rate of soluble solids accumulation peaked between 0.35 – 0.40 oBrix/day and have now tapered to 0.15 – 0.2 oBrix/day.



RANDOM VS. REPRESENTATIVE: 2011 VINEYARD SAMPLING UPDATE

Chris Gerling

*If you have been reading *Veraison to Harvest* for a few years now, you may have noticed that for at least the past couple of seasons we have run an article on sampling techniques. I have tried to include all of the conventional wisdom and methods, including those used to gather the V to H samples, that attempt to remove as much bias as possible from the process. Since I feel like this ground has been covered (if you've missed these articles or want to review, the most recent version can be found at: <http://grape-sandwine.cals.cornell.edu/cals/grapesandwine/veraision-to-harvest/upload/Veraison-to-Harvest-2010-2-2.pdf>), I'd like to talk about some new thinking regarding sampling and some important distinctions that might matter to you as you attempt to make harvest decisions.*

The question: what is the current physiological maturity level of this vineyard? The "correct answer" would be the numbers arrived at if all the grapes were actually harvested and then processed the way each individual winery would harvest and crush. This method, while effective, leaves something to be desired when you want to check the vineyard next week, however. Besides keeping interns busy, the reason samples are collected is to gather information about as-yet unpicked grapes, and to approximate a "real" harvest as closely as possible without actually doing so. There's some important information up there besides the obvious point that large samples are better than small ones, but we'll come back to it after we're done in the vineyard.

If average untrained person A were asked to go pick some berries or clusters, not knowing any better he/ she would most likely enter the vineyard and choose the nicest, closest, most exposed fruit. Even with experience, we know that we have these tendencies, so guidelines have evolved to counteract what we call sampling bias. The problem with bias, of course, is that this creates a sample unlikely to represent the true nature of the vineyard- the majority of the fruit is not necessarily close, attractive and exposed. The "opposite" of a biased sample is a truly random sample. A random sample is one where no sector of the population is more or less likely to be selected. A random sample sounds like exactly what we are after, and in many cases it is what we have been trained to seek, especially in science. The problem comes when we then utilize a random approach in sampling.



*Not all vineyards are as uniform as this Long Island vineyard appears to be. Yet a **random** sample might miss some of the variability present in this large block, and not be **representative** of the actual fruit harvested (particularly if different portions of the block are made into different wine lots). Thinking through your particular vineyard issues and sampling accordingly will make your maturity samples more representative of what comes out of the press.*

Photo by Tim Martinson

Why is this a problem? Consider a vineyard. Not an idealized painting of a vineyard but an actual, real-world, rock-filled, wet-spot-having, yellow-jacket-infested vineyard. Are there sections where the vigor is stunted due to a nutrient deficiency or wet feet? Is there a spot where there seems to be a different clone and there are always twice as many clusters? Are there sections where different soil has caused different-sized vines? To walk the vineyard randomly is to pretend that you have none of that information. More than a random sample, you really want a representative sample. With experience, we can possibly do better than random.

Here are a couple of extreme examples:

Scenario #1: You have had frost injury in the spring and half of a block is essentially the vineyard equivalent of a ghost town. Well assume this is a 20-row block where 10 rows were toasted and 10 rows remain unscathed. It would be possible to take a sample where you included equal berries or clusters from each section. This would be a "spatially" random approach, but it would ignore the fact that when the fruit arrives to be crushed, there will be 15 tons from the intact section and half of a ton from the damaged portion.

Scenario #2: There is 15% rot in a vineyard, and the rot is fairly evenly distributed throughout the block. One approach is to attempt to get a sample with 15% rot as well, and this thinking is sound- but what if you plan to have the pickers drop it or you plan to sort it out at the

Continued on page 7

FRUIT MATURATION REPORT - 9/16/2011

Samples reported here were collected on **Monday and Tuesday September 12 and 13**. This week we have samples from all four regions (Finger Lakes, Lake Erie, Long Island, Hudson Valley). Please note: Previous sample averages reflect **only** samples from the limited set we sampled last week. Where appropriate, sample data from 2010, averaged over all sites is included. Tables from 2010 are archived at <http://grapesandwine.cals.cornell.edu/cals/grapesandwine/veraison-to-harvest/2010.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 (details in later issue) . - TEM

Cabernet Franc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes		W Seneca	1.46	18.0	2.95	9.0	29
Finger Lakes	9/13/2011	W Cayuga	1.52	17.0	3.17	7.3	78
Hudson Valley	9/13/2011	HV Lab	1.37	14.9	3.40	11.9	166
Lake Erie	9/13/2011	Portland	1.74	15.8	2.97	12.9	170
Average	9/13/2011		1.52	16.4	3.12	10.3	111
Prev Sample	9/6/2011	Average	1.55	15.1	3.08	10.8	106
'10 Average	9/13/10		1.50	20.5	3.45	6.8	80

Catawba

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/13/2011	W Cayuga	2.36	15.0	2.77	13.6	57
Prev Sample	9/6/2011	W Cayuga	2.48	14.2	2.76	17.3	82
'10 Sample	9/13/2010	W Cayuga	2.35	15.6	3.14	12.6	160

Cayuga White

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/13/2011	W Keuka	2.55	15.3	2.90	10.3	159
Finger Lakes	9/13/2011	W Cayuga	2.23	16.7	3.10	7.3	209
Average	9/13/2011		2.39	16.0	3.00	8.8	184
Previous Sample	9/6/2011	Average	2.50	15.5	3.05	9.3	201
'10 Sample	8/30/10	Final sample	2.91	15.4	3.3	12.1	201

Chardonnay

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/13/2011	W Seneca		18.9	3.08	8.4	75
Finger Lakes	9/13/2011	W Cayuga	1.37	19.0	3.13	8.1	160
Hudson Valley	9/13/2011	HV Lab	1.49	16.0	3.48	9.9	368
Hudson Valley	9/13/2011	Hudson Valley	1.56	17.1	3.28	8.8	341
Long Island	9/13/2011	North Fork South	1.78	16.0	3.30	8.9	242
Average	9/13/2011		1.55	17.4	3.25	8.8	237
Prev Sample	9/6/2011		1.56	16.6	3.28	8.8	235
'10 Average	9/13/2010		1.50	21.4	3.56	6.5	206

Chenin blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island	9/13/2011	North Fork North	1.93	14.0	3.08	11.5	125
Prev Sample	9/6/2011	North Fork N	1.92	13.0	3.10	12.8	119

Concord

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/13/2011	W Keuka	No Sample				
Lake Erie	9/13/2011	Portland	3.33	15.4	3.20	9.7	237
Average	9/13/2011		3.33	15.4	3.20	9.7	237
Prev Sample	9/6/2011		2.85	13.3	3.06	11.1	233
'10 Sample	9/13//2010		3.53	14.8	3.40	9.6	204

Lemberger

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/13/2011	E Keuka	1.55	21.6	3.06	7.3	19
Finger Lakes	9/13/2011	W Seneca	1.65	20.2	3.16	6.8	193
Average	9/13/2011		1.60	20.9	3.11	7.0	106
Prev. Sample	9/6/2011		1.50	19.8	3.12	7.4	162
'10 Sample	9/13/2010		1.91	21.6	3.36	8.6	46

Malbec

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island	9/13/2011	North Fork South	2.21	16.1	3.37	10.1	283
Prev Sample	9/6/2011	North Fork S	2.11	14.7	3.29	11.4	269

Merlot

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Hudson Valley	9/13/2011	HV Lab	1.54	14.9	3.50	14.2	235
Long Island	9/13/2011	North Fork South	1.72	16.3	3.40	6.9	157
Average	9/13/2011		1.63	15.6	3.45	10.5	196
Prev Sample	9/6/2011		1.69	15.1	3.50	8.3	195
'10 Sample	9/13//2010		1.71	20.3	3.73	5.0	147

Niagara

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Lake Erie	9/13/2011	Portland	4.25	14.9	3.24	7.5	166
Prev Sample	9/6/2011	Portland	3.89	14.2	3.06	8.8	144

Noiret

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Hudson Valley	9/13/2011	HV Lab	1.53	15.8	3.29	12.9	261
Hudson Valley	9/13/2011	W.HV	1.68	16.8	3.02	11.2	134
Lake Erie	9/13/2011	Ripley	1.73	17.6	3.06	9.0	174
Average	9/13/2011		1.65	16.7	3.12	11.0	190
Prev Sample	9/6/2011		1.63	16.5	3.23	11.6	189
'10 Average	9/13/2010		1.65	18.4	3.34	8.5	137

Pinot Noir

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/13/2011	E.Seneca	1.28	19.3	3.30	7.3	159
Hudson Valley	9/13/2011	HV Lab	1.90	16.4	3.39	7.7	250
Hudson Valley	9/13/2011	Hudson Valley	1.33	17.8	3.38	8.3	328
Average	9/13/2011		1.50	17.8	3.36	7.8	246
Prev Sample	9/6/2011		1.51	16.6	3.38	9.8	242
'10 Average	9/13/2010		1.37	22.6	3.75	7.0	210

Riesling

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/13/2011	E Seneca	1.44	16.3	2.87	10.9	22
Finger Lakes	9/13/2011	E Seneca	1.32	17.7	2.86	10.4	60
Finger Lakes	9/13/2011	W Seneca - LR/ST	1.33	17.3	2.92	10.3	31
Finger Lakes	9/13/2011	W Seneca - NLR/NST	1.03	17.8	2.93	10.5	29
Finger Lakes	9/13/2011	E Seneca-shoot thin	1.31	17.5	2.88	10.4	49
Finger Lakes	9/13/2011	E Seneca - no thin	1.05	15.9	2.87	10.1	50
Finger Lakes	9/13/2011	W Cayuga	1.50	16.8	2.87	10.8	134
Hudson Valley	9/13/2011	HV Lab	1.45	14.1	3.22	9.1	230
Lake Erie	9/13/2011	Fredonia	1.58	14.7	2.92	12.7	246
Long Island	9/13/2011	North Fork North	1.56	16.0	3.13	9.0	124
Average	9/13/2011		1.36	16.4	2.95	10.4	97
Prev Sample	9/6/2011		1.38	15.5	2.97	11.2	112
'10 Average	9/13/2010		1.48	18.4	3.19	9.2	94

Sauvignon Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island	9/13/2011	North Fork North	1.58	18.0	3.39	7.6	170
Prev Sample	9/6/2011	North Fork N	1.58	17.1	3.30	8.9	167
'10 Sample	9/08/2010	Final Sample	1.84	19.8	3.64	8.0	242

Seyval Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/13/2011	W Cayuga	HARVEST				
Hudson Valley	9/13/2011	HV Lab	1.88	17.6	3.23	7.7	135
Hudson Valley	9/13/2011	W HV	HARVEST				
Average	9/13/2011		1.88	17.6	3.23	7.7	135
Prev Sample	9/6/2011		1.89	16.0	3.25	9.6	127
'10 Average	8/30/2010	Final Sample	1.64	18.3	3.46	9.3	170

Traminette

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/13/2011	W Keuka	1.56	16.5	2.82	9.9	40
Finger Lakes	9/13/2011	W Seneca	1.78	19.2	3.01	12.1	33
Hudson Valley	9/13/2011	HV Lab	1.84	15.9	3.19	8.5	173
Hudson Valley	9/13/2011	W HV	1.69	18.7	2.97	9.0	23
Lake Erie	9/13/2011	Fredonia	2.33	19.5	2.90	10.5	84
Average	9/13/2011		1.84	18.0	2.98	10.0	71
Prev Sample	9/6/2011		1.75	16.6	3.07	10.7	81
'10 Average	9/13/2010		1.66	19.8	3.20	10.4	167

Vignoles

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/13/2011	W Keuka-VSP, Shoot thin	1.10	21.0	3.03	11.6	166
Finger Lakes	9/13/2011	W keuka-VSP, No Thin	1.32	19.3	3.03	10.6	153
Finger Lakes	9/13/2011	W keuka-high wire ST	1.66	19.6	3.02	14.7	167
Finger Lakes	9/13/2011	W keuka-high wire NST	1.39	21.6	3.12	12.8	173
Average	9/13/2011		1.37	20.4	3.05	12.4	165
Prev Sample	9/6/2011		1.34	19.9	3.06	11.0	183
'10 Average	9/13/2010		1.51	21.6	3.13	14.7	263

Continued from page 3

winery? Exclude it from the sample if you'll exclude it from the tank. Either technique- trying to simulate the rot level or removing it- is using knowledge of the entire block to try and get a more representative sample. This knowledge is what I meant when I hinted above about how knowing winemaking methods can give us insight into sampling.

We don't make wine in a vacuum (well, maybe they do in some regions; who knows what equipment some people have), so we shouldn't make sampling decisions this way either. The moral of the story is that we have information about the vineyard and we have information about the winemaking strategy, and we shouldn't ignore this information when we sample to make harvest decisions. To proceed randomly is not bad, but it's what we do when we're feeling around in the dark. Once the metaphorical light switch has been turned on, we can behave more purposefully, and it's not necessarily statistically naughty to do so. To read the paper by Dr. Jim Myers, most recently of the Vanden Heuvel Viticulture lab, upon which this article is (very loosely) based, you can visit : <http://onlinelibrary.wiley.com/doi/10.1111/j.1755-0238.2011.00152.x/full>



Pinot noir through the bird netting in a Seneca Lake vineyard.

Photo by Tim Martinson

Also, we have a sampling video from another graduate student project. The "5 Minute Wine School" is an extension project to cover basic concepts fairly quickly, and while it may not be targeted towards experienced winemakers, it can be a way to easily review or get a new hire quickly up to speed. Here is the youtube channel, and we plan to soon have links on our main site. (ed. note: the sampling video may not be live until Sunday) <http://www.youtube.com/user/5minWineSchool>



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