Veraison to Harvest

Statewide Vineyard Crop Development Update #2

Cornell University Cooperative Extension

September 7, 2012

Edited by Tim Martinson and Chris Gerling

Around New York...

Statewide *(Tim Martinson).*

According to the Finger Lakes Grape Program crop update, we are about 440 growing degree days ahead of average (2610 as of Sept 5 at Geneva) , or +43 'days ahead' – almost identical to the GDD we had at this time in 2010, and about 200 GDD ahead of the (still warm, but rainy) 2011 season. This week's samples (see table pp. 4-7) are showing brix readings about 2-3° Brix (or more) above last year's samples at this time, and titratable acidity (TA) lower (1-2 g/l in many cases)- but not as different as the brix readings are. TAs are comfortably in single digits (7-10) for many reds and early to midseason vinifera (Chardonnay, Cab Franc, Pinot noir, Lemberger). Riesling blocks – though undoubtedly not at ripeness they will attain – have TAs ranging from 9-12 g/l – well below last year's average of 16 g/l at this time. Vignoles is off the charts at 25° Brix – and acids in the 11 g/l range, compared with 14 g/l last year at this time. No wonder two of the blocks were harvested already. Checking back to our 2010 Veraison to Harvest Issue #3 , the numbers look almost identical: In 2010 our Chardonnay blocks had 20.6 brix and 7.3 g/l titratable acids (2012 numbers: 19.6 and 7.9) ; Riesling averaged 18.0 and 9.9 g/l (2012 numbers: 17.9 and 10.5). So the season is playing out (so far) much like 2010.

We characterized 2011 as an unusual 'warm, wet year' – in which clouds and rainfall kept the brix lower than they would be, but acid levels followed a more normal 'warm year' trajectory. This year is different, and the sunny weather (think photosynthesis producing sugars, driven by sunlight) is perhaps running ahead of acid metabolisim (acids drop as berries respire, a process driven more by temperature than sunlight). So its important to remember that brix isn't the only ripeness indicator, and acidity changes differentl. (see Chris Gerling's article, p. 3).

Lake Erie (*Jodi Creasap Gee).*

At National Grape Cooperative, Niagara harvest began over the weekend, while Concord harvest began this week. The regional roads are busy with tractors, harvesters, and semis hauling grape bins, and the aroma of Concord is in the air. Vignoles have been picked in the area by one of the main processors, and more of the hybrids are harvested each day. The weather continues to be warm and mostly sunny, with just enough rain to dampen dusty vineyard paths.

The CLEREL crew assayed the acid levels on Concord this week, and we were all surprised to see them at about half of what they normally are. We have a high Brix, low acid year, likely due to the hot days and warm nights. The usual hot days and cooler nights allow for the fruit to ripen while the acids remain high, and sugars tend to be lower than what we are seeing this year. The characteristic "Lake Erie Concord" is not easily found this year, with fruit being somewhat bland in flavor, although still quite sweet.

Marquete on GDC, with downward shoot positioning (combing) and fruit-zone leaf removal in this Vermont vineyard

Photo by Tim Martinson

A few Niagara vineyards have a bigger crop than anticipated, but, overall, the Concord crop is definitely lower than average. If you were to follow the harvesters through most vineyards, it would quickly become obvious that the Concord crop is rather low this year, with only a few scattered clusters falling from the harvester to the bins. Due to the smaller number of berries per cluster and the smaller crop size, Concord berries are much larger and riper this year, compared to the previous two years:

Year (day aft. Bloom)	Berry weight (g)	Brix
2010 (98 DAB)	3.05	-
2011 (96 DAB)	2.95	16.4
2012 (94 DAB)	**3.42**	**17.4**

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

Sparkling grapes have been harvested last week and this week. Growers are viewing the rest of harvest with great optimism right now. Trying to extrapolate trends from previous seasons is often helpful but should be done with caution. We all know that the weather in September and October can really dictate the

success of a season. On the plus side, Long Island often has warm, sunny weather in the fall as well as a fairly late hard frost. This is why growers can successfully hang fruit into fall. On the other hand, the occasional tropical system can present challenges especially for the 'lightly managed' vineyard. This is one reason that vineyard management on Long Island tends to be fairly intensive – it is important to go into fall with a healthy vineyard.

This past week, we endured the remnants of Hurricane Isaac for 1.5 days. This amounted to several inches of rain and lots of dampness and humidity. Temperatures remained very warm. We actually needed the rain. Our research vineyard in Riverhead was showing signs of drought stress. While it will be necessary to keep an eye on any developing downy mildew and/or cluster rots, this system should not present any major problems.

The growing degree day comparison for Riverhead is interesting as growing degree days are similar to the famously hot 2010 season. However, the spring was much warmer this year, leading to another early budbreak. We had two spotty frosts in April, one during significant budswell and one in early budbreak. There was a bit of damage in low spots but most vineyards were unscathed.

Table. *Monthly growing degree-days at Riverhead.*

Month	2010	2011	2012
April	176	115	212
May	574	489	626
June	1267	1099	1211
July	2150	1948	2045
Aug	2930	2687	2813
Sept 4	2991	2727	2911

Hudson Valley (*Steve Hoying)*

Just over a year ago the Hudson Valley was cleaning up from the devastating effects of Hurricane Irene and Tropical Storm Lee. The combination of wind, rain, and cool temperatures depressed Brix and encouraged sour rot. What a difference a year makes! Brix is surprisingly high with several varieties including Pinot noir and gris, Lemberger, Gewurtztramminer, Sauvignon blanc, Merlot, and Chardonnay all over 20 at the Hudson Valley Lab as well as other local vineyards. Vignoles is close to harvest as rots are starting to appear. Marquette and La Crescent are ready with reportedly excellent yields and Brix at 25. Some Seyval, some Chardonnay, and some Pinot are being harvested for sparkling wines. pH and acids are also quite acceptable all around! Recent dry weather and an excellent forecast predict an orderly if not rapid harvest with little disease pressure except for the usual suspects.

The universal problem this year across the Valley seems to be bird pressure and damage. And of course, bees and their damage associated with pecked berries. Bird scare devices seem to be ineffective most probably due to improper management of the devices (the wrong sound chip for the species, improper placement, and not moving the devices around). More and more growers are investing in netting which should rapidly pay for itself.

Finger Lakes (*Hans Walter-Peterson*)

Wineries were bringing in early hybrid varieties this week like Cayuga White, Baco noir, and Seyval. Both Constellation Brands and National Grape Cooperative have been picking Concords this week as well. There has been concerns about the level of acidity in some of the bulk varieties that are used as sources of acid (primarily Aurore and Elvira), but acidity has been testing low in Concords as well. The warm year this year has dropped acid levels lower than what is typical in these varieties, which prompted Constellation to ask certain growers to pick early Catawbas in order to provide some acidity for their products.

Chardonnay and Pinot noir for sparkling production was harvested last week, but we also heard about some Chardonnay for still wines being picked over the last several days as well. Depending on the weather over the next week, we should be seeing more early vinifera varieties harvested including Pinot Gris, Chardonnay, Pinot noir and probably some Gewürtztraminer as well. Based on our sample results this week, we're still probably a couple of weeks away from starting to pick Riesling, but obviously the weather conditions can change all of that in a heartbeat.

Heat accumulation is still well ahead of normal this year. As of this week, we have accumulated as many growing degree days as we do by mid-October on average. If you include the GDDs we started with in March (the real beginning of our growing season this year), we have accumulated more than we do in a typical growing season (April - October), and are on a pace to have a warmer year than 2010. Rainfall for August was about half of our normal average, keeping with the trend of dry conditions this year, and helping to continue to keep canopies and fruit clean for the most part.

A strong cell of thunderstorms moved through the mid-section of the Finger Lakes yesterday afternoon (Thursday), with reports of hail coming down in some areas on the east side of Seneca and Cayuga Lakes. We don't know yet if any vineyards were damaged but will be out looking over the next several days.

It's Not Just About Brix. Watch Your Acids Too.

Chris Gerling

Labor day has come and gone, the kids are back in school, you can no longer buy soft-serve ice cream in upstate NY, the clear crisp autumn air is scented with wood burning and… OK, scratch that last part. It's still hot and sunny, and the season continues to race along as we in the Finger Lakes rack up degree days at a fever pace. In the V&B the brix levels are quite high, and, well, actually that's it. The brix levels are quite high, and that's all you can say about things with a blanket statement. The differences and the subtleties are on the acid side of the equation, and for those of us making wine the acid is where the action will likely remain.

We know that sugar accumulation and acid degradation are governed by different mechanisms, but we still intuitively link them. In a year like 2011 such thinking was particularly dangerous because one system (heat for malic acid metabolism) was much more active than the other (sunlight for sugar).

2012 has provided both heat and sunlight in abundance, but vineyard sites and varieties still react in different ways and the fact that we have such drastically early "maturity" is also leading to some differences. In the V&B we received a hybrid that was measuring 23.5 degrees brix on the refractometer but still tasted noticeably tart. When we checked the TA we found that the TA matched the soluble solids measurement at 23.5 g/L. Odds are good this grape is not the Next Big Thing.

With this cautionary tale in mind, I think it's prudent to be checking both pH and TA with grape samples this year; 20 degrees brix doesn't mean very much at all in isolation. Things to watch for:

1. Lots of acid remaining even though brix is high. Some varieties, especially those in cold-climate areas, can get to 23° brix and still have monster TAs. The Minnesota varieties in particular are often 25° or higher before the TA reaches the low teens.
2. Acid drops out even though brix is not especially high. Riesling comes to mind here. The acid may reach levels lower than what you'd prefer before the brix has approached 22°.
3. Low pH and low TA (relatively). I'm not certain of this yet, but I've seen a couple of samples that might suggest a pH measurement alone could be misleading. My working theory is that this year will be relatively low in malic acid, at least proportionally, since the heat has degraded so much of it. With more tartaric acid by ratio, the equivalent pH should be lower, thus resulting in the low pH/ low TA combo. Those who watch pH alone could get a false sense of security and risk missing their targets.

Harvest decisions are always tricky, and more perspectives on how to make these choices Hans Walter-Peterson and I interviewed the Sheldrake Point Vineyards team yesterday as part of our Presspad Podcast. For those of you who weren't aware we had a podcast, check it out at: http://blogs.cornell.edu/presspad/ or search Presspad on iTunes. The harvest decision and also a winery sanitation episode should be available in the next couple of weeks, and in the meantime you can catch up on our previous episodes.

Fruit Chemistry at Willsboro and Plattsburgh

Many readers of *Veraison to Harvest* are familiar with the Willsboro Variety Trial, at Cornell's Baker Farm overlooking Lake Champlain. Josh Kowalski has been working with Kevin Iungerman on the trial this year, and sent me analysis of fruit samples (left, below) (first harvest is tomorrow for some of the 25 varieties planted there) from selected Cold-Climate cultivars. Richard Lamoy, of Hid-n-Pines vineyard in Plattsburgh, has established training trials with funding from a grower SARE grant over the past several years. Richard shared his analsis (right) of four cultivars (this is a composite of replicated samples from different training systems, more on that later. - TEM

Fruit chemistry September 6 on selected cultivars at Willsboro grape variety trial.

Variety	brix	pH	TA (g/L)
Frontenac	17.6	2.90	16.4
LaCrescent	24.0	2.96	13.9
Marquette	24.0	2.97	12.1
Prairie Star	19.2	3.28	9.8
St. Croix	20.0	3.17	8.0
St. Pepin	21.2		

Fruit chemistry and Berry weights for four varieties at Richard Lamoy's SARE training trials, in Plattsburgh, NY

Variety	Date	Berry Wt	Brix	pH	TA (g/l)
Marquette	08/15	1.14	13.3	2.6	
	08/23	1.19	15.1	2.8	18.4
	09/2	1.30	18.4	3.0	16.0
Mn1200	08/15	0.73	15.5	2.7	
	08/23	0.74	17.6	2.9	10.5
	09/2	0.79	20.4	3.0	9.6
Petite Amie	08/15	1.44	10.9	2.4	
	08/23	1.54	12.9	2.7	13.0
	09/2	1.68	15.4	2.9	9.5
St Pepin	08/15	1.70	11.4	2.5	
	08/23	1.80	13.6	2.7	15.6
	09/2	1.93	16.7	2.9	11.7

Fruit Maturation Report - 9/8/2012

Samples reported here were collected on **Tuesday, September 5.** . Where appropriate, sample data from 2011, averaged over all sites is included. Tables from 2011 are archived at http://grapesandwine.cals.cornell.edu/cals/grapesandwine/veraison-to-harvest/2011.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	9/5/2012	E.Seneca	1.36	20.6	3.12	7.0	
Finger Lakes	9/5/2012	W.Seneca	1.19	19.7	2.95	9.4	4
Finger Lakes	9/5/2012	Cayuga	1.37	19.1	3.07	7.7	60
Lake Erie	9/5/2012	Portland	1.53	16.9	3.06	11.3	130
Long Island	9/5/2012	Long Island	1.94	15.9	3.24	9.0	95
Long Island	9/5/2012	Long Island	1.46	15.7	3.15	9.5	59
Average	***9/5/2012***		***1.49***	***18.2***	***3.13***	***8.7***	***69***
Prev Sample	8/29/12		*1.48*	*15.6*	*3.01*	*12.9*	*88*
'11 Average	*9/7/2011*		*1.55*	*13.4*	*2.91*	*15.6*	*106*

Catawba

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/5/2012	Keuka	2.09	15.7	2.76	15.1	69
Prev Sample	*8/29/12*	*Keuka*	*1.91*	*12.2*	*2.63*	*26.3*	*413*
'11 Sample	*9/7/2011*		*2.48*	*14.2*	*2.76*	*27.8*	*116*

Cayuga White

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/5/2012	Keuka	2.91	17.1	3.06	9.9	242
Finger Lakes	9/5/2012	Cayuga	2.13	20.5	3.29	7.6	326
Average	***9/5/2012***		***2.52***	***18.8***	***3.18***	***8.7***	***284***
Prev Sample	*8/29/2012*		*2.54*	*16.6*	*3.04*	*10.4*	*177*
'11 Average	*8/30/2011*		*2.50*	*15.5*	*3.05*	*9.3*	*201*

Chardonnay

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/5/2012	Cayuga	1.37	20.2	3.13	8.4	182
Finger Lakes	9/5/2012	W.Seneca	1.45	21.3	3.15	7.8	48
Long Island	9/5/2012	N Fork S	1.50	17.0	3.51	8.4	333
Hudson Valley	9/5/2012	HVL	1.32	21.2	3.50	6.5	278
Hudson Valley	9/5/2012	W HV	1.59	18.2	3.27	8.4	305
Average	***9/5/2012***		***1.45***	***19.6***	***3.31***	***7.9***	***229***
Prev. Sample	*8/29/12*		*1.42*	*17.6*	*3.21*	*10.7*	*223*
'11 Average	*9/5/2011*		*1.35*	*16.2*	*3.01*	*9.7*	*98.7*

Concord

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/5/2012	Keuka	2.63	15.8	3.24	7.9	212
Lake Erie	9/5/2012	Portland	3.34	15.4	3.22	10.3	274
Average	***9/5/2012***		***2.99***	***15.6***	***3.23***	***9.1***	***243***
Prev Sample	*8/29/12*		*2.89*	*14.1*	*3.10*	*10.5*	*206*
'11 Sample	*9/7/2011*		*2.85*	*13,3*	*3,96*	*11,1*	*233*

Lemberger

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/5/2012	Keuka	1.67	22.8	3.08	7.1	40
Prev Sample	*8/29/12*	*Keuka*	*1.67*	*20.8*	*3.04*	*8.3*	*43*
'11 Sample	*9/7/2011*		*1.59*	*19.8*	*3.12*	*7.4*	*162*

Malbec

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island	9/5/2012	N Fork S	2.34	15.4	3.25	12.0	248
Prev Sample	*8/29/12*	*North Fork S*	*2.22*	*14.0*	*3.08*	*18.3*	*242*
'11 Sample	*9/6/2011*	*-*	*2.11*	*14.7*	*3.29*	*11.4*	*2.69*

Merlot

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island	9/5/2012	North Fork (4)	2.02	17.6	3.45	9.4	137
Long Island	9/5/2012	North Fork (8)	1.81	17.0	3.29	9.7	85
Hudson Valley	9/5/2012	HVL	1.53	19.6	3.53	5.9	160
Average	***9/5/2012***		***1.79***	***18.1***	***3.42***	***8.3***	***127***
Prev Sample	*8/29/2012*	*Average*	*1.72*	*16.0*	*3.28*	*9.4*	*120*
'11 Sample	*9/7/2011*		*1.69*	*15.1*	*3.50*	*8.3*	*195*

Niagara

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Lake Erie	9/5/2012	Portland	3.84	16.6	3.26	7.2	205
Prev Sample	*8/29/12*	*Portland*	*3.64*	*15.3*	*3.16*	*8.9*	*243*
'11 Sample	*9/7/2011*	*Portland*	*3.61*	*12.7*	*2.88*	*12.1*	*150.3*

Noiret

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Lake Erie	9/5/2012	Ripley	1.70	18.8	3.23	10.3	424
Hudson Valley	9/5/2012	HVL	1.51	17.8	3.24	7.6	218
Hudson Valley	9/5/2012	W HV	1.39	17.6	3.08	10.1	152
Average	*9/5/2012*		*1.53*	*18.1*	*3.18*	*9.3*	*265*
Prev Sample	*8/29/12*		*2.17*	*16.7*	*3.14*	*11.9*	*231*
'11 Sample	*9/6/2011*		*1.63*	*16.5*	*3.23*	*11.6*	*189*

Pinot Noir

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/5/2012	E.Seneca	1.40	21.8	3.29	6.5	112
Hudson Valley	9/5/2012	HVL	1.23	21.6	3.51	8.3	255
Hudson Valley	9/5/2012	W HV	1.67	18.5	3.44	8.0	289
Average	***9/5/2012***		***1.43***	***20.6***	***3.41***	***7.6***	***219***
Prev Sample	*8/29/12*		*1.37*	*18.3*	*3.31*	*9.4*	*175*
'11 Sample	*9/7/2011*		*1.51*	*16.6*	*3.38*	*11.8*	*283*

Riesling

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/5/2012	W.Seneca	1.40	17.7	2.83	11.8	6
Finger Lakes	9/5/2012	E.Seneca	1.38	17.9	2.90	11.4	96
Finger Lakes	9/5/2012	W. Seneca	1.42	16.6	2.85	12.2	115
Lake Erie	9/5/2012	Fredonia	1.49	19.3	3.12	9.3	203
Long Island	9/5/2012	Long Island	1.41	16.7	3.16	9.7	125
Hudson Valley	9/5/2012	HVL	1.59	18.9	3.22	8.3	158
Finger Lakes	9/5/2012	E.Seneca	1.41	17.8	2.92	10.9	65
Finger Lakes	9/5/2012	E.Seneca	1.40	18.5	2.91	9.4	33
Finger Lakes	9/5/2012	Cayuga	1.49	18.5	2.94	11.0	107
Finger Lakes	9/5/2012	Keuka	1.19	16.8	2.87	10.6	73
Average	***9/5/2012***		***1.42***	***17.9***	***2.97***	***10.5***	***98***
Prev Sample	*8/29/12*	*Average*	*1.33*	*16.2*	*2.88*	*13.9*	*105*
'11 Sample	*8/30/2011*		*1.19*	*13.9*	*2.76*	*16.8*	*89.9*

Sauvignon Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island	9/5/2012		1.63	18.8	3.35	9.0	125
Prev Sample	*8/29/12*	*North Fork N*	*1.54*	*18.5*	*3.24*	*11.4*	*135*
'11 Sample	*9/5/2011*	*-*	*1.58*	*17.1*	*3.30*	*8.9*	*167*

Seyval Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Hudson Valley	9/5/12	HVL	1.64	19.4	3.35	6.4	170
Hudson Valley	9/5/12	W HV	1.55	19.2	3.21	7.0	252
Average	***9/5/12***		***1.59***	***19.3***	***3.28***	***6.7***	***211***
Prev Sample	*8/29/12*		*1.56*	*17.5*	*3.22*	*8.8*	*231*
'11 Sample	*8/29/2011*		*1.56*	*15.7*	*2.97*	*10.0*	*96.1*

Traminette

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/5/2012	Keuka	1.59	20.1	2.82	10.3	70
Lake Erie	9/5/2012	Fredonia	1.71	20.1	3.01	8.3	50
Hudson Valley	9/5/2012	HVL	1.79	18.8	3.14	8.7	80
Hudson Valley	9/5/2012	W HV	1.64	17.4	3.12	8.9	114
Average	***9/5/2012***		***1.68***	***19.1***	***3.02***	***9***	***79***
Prev Sample	*8/29/12*	*Average*	*1.51*	*16.3*	*2.93*	*13.0*	*63*
'11 Sample	*8/30/2011*		*1.51*	*13.6*	*2.68*	*18.4*	*148.1*

Vignoles

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/5/2012	W. Seneca	1.30	25.5	3.09	11.5	171
Finger Lakes	9/5/2012	Keuka	HVST				
Finger Lakes	9/5/2012	Keuka	HVST				
Average	***9/5/2012***		***1.30***	***25.5***	***3.09***	***11.5***	***171***
Prev Sample	*8/29/2012*		*1.44*	*21.6*	*2.99*	*13.6*	*171*
'11 Sample	*8/29/2011*		*1.32*	*18.0*	*2.92*	*14.5*	*162*

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