Veraison to Harvest

Statewide Vineyard Crop Development Update #1

Cornell University Cooperative Extension

September 7, 2007

About this Newsletter…

Timothy E. Martinson

Welcome to the first issue of *Veraison to Harvest,* a statewide newsletter slated to run weekly from now until the end of harvest.

This newsletter will provide updates on crop development and maturation throughout New York, with contributions from regional viticulture extension programs and the Cornell Enology Extension program.

The heart of this newsletter will be analytical results on berry maturation from 50 locations in the Finger Lakes, Lake Erie, Hudson Valley, and Long Island. Samples from these vineyards will be collected on Monday, and results e-mailed in this newsletter on Friday.

Samples will be drawn from research projects of Terry Bates, Justine Vanden Heuvel and Alice Wise, along with commerial vineyards in each region. We thank our industry cooperators for allowing us to sample their vineyards.

In addition, regional extension specialists will provide timely updates on weather and how the harvest is progressing.

Finally, we will provide updates for winemakers on any special considerations resulting from crop conditions needed to successfully handle the incoming crop.

This newsletter is made possible by funding from the NY Wine and Grape Foundation's Total Quality Focus program, which supports data collection, juice analysis, and communication by regional programs to provide content for this publication. We are grateful for their support.

We hope you find this newsletter informative and timely. Please feel free to suggest topics or direct feedback about the format and content to me at tem2@cornell.edu

- TEM

Around New York…

It looks like we are set for an early and compressed harvest season, if present weather trends continue. It's been a dry season, and berry weight across the state (except Long Island, where many vineyards have irrigation) appears to be lower than last year [see berry weight summary in Fruit Maturation report elsewhere in this newsletter].

This lower berry weight (and several vineyards appear to have smaller clusters with fewer berries overall) and early maturation could be a plus for reds. Although its not reflected in the August 27 samples reported in this newsletter, the 80 degree days and 50 degree nights are optimal for hastening ripening, and next week's samples should show sharp drops in acidity and increases in sugar content.

In a dry season such as this one, winemakers should be aware of the potential for Atypical Aging (ATA) in white varieties. While we don't have all the answers about ATA, we know that irrigation helps, and that ascorbic acid additions to wines can delay its appearance. Wines can also be tested for the potential for developing ATA. More on that in a future newsletter!

Temperatures in the 90s in September as grapes are accumulating sugar can lead to sunburn, as we saw in 2005. Limiting leaf pulling (OK, you already did it, and are not planning on doing any more this late in the season, right?) to the N side of E-W rows and the East side of N/W rows can reduce severity of this potential problem. - TEM

Finger Lakes-*Hans Walter Peterson*

The 2007 Harvest began on Monday, August 27 with Centerra Wine Company opening up for Auroras. 'Early' Elvira harvest started on Tuesday, September 4, but acids are lower than expected. Weather since veraison has been hot and dry, giving us good ripening conditions and low *botrytis* pressure to this point. The potential is there for very good fruit quality across all varieties.

The most pressing concern right now is the lack of soil moisture. Water stress symptoms are evident in some vineyards, with leaves feeling warm to the touch and

drooping, especially in vineyards with shallow rooting depth or other restrictions to root volume. Growers that have the ability to irrigate have been doing so to at least some extent over the past couple of weeks. Some growers also applied foliar urea to canopies around veraison, in order to try to raise yeast available nitrogen (YAN) levels and help reduce potential ATA development. Mite feeding injury has been noted in several vineyards around the region.

Long Island - *Alice Wise*

In Riverhead, the last appreciable rainfall was 0.9" on Aug. 21, with a total of only 2.5" for the entire month. Monthly average rainfall ranges from 3.5-4". Drought stress symptoms can be found on dry sites in non-irrigated vineyards. The hot dry weather has accelerated ripening. Sparkling wine harvest began this week. Particularly if the weather pattern persists, earlier ripening varieties such as Chardonnay may be harvested at the end of September. Thus far, growers are optimistic about fruit quality and quantity.

Lake Erie - *Tim Weigle*

Abundant sunshine, warm temperatures during the day, cooler nighttime temperatures and limited rainfall have combined to promote ripening in the Lake Erie Region. The limited moisture is being seen in somewhat smaller berry size but limited disease and insect pressure (with the exception of Japanese Beetle) have growers in the area looking forward to what harvest will bring. Weather records at Fredonia show we are 6.69" of precipitation behind average of 16.69" for the growing season (April – August) while we are 8.8 days ahead of average Growing Degree Day (GDD) accumulation with 2369 compared to the average of 2216.

Hudson Valley - *Steve McKay*

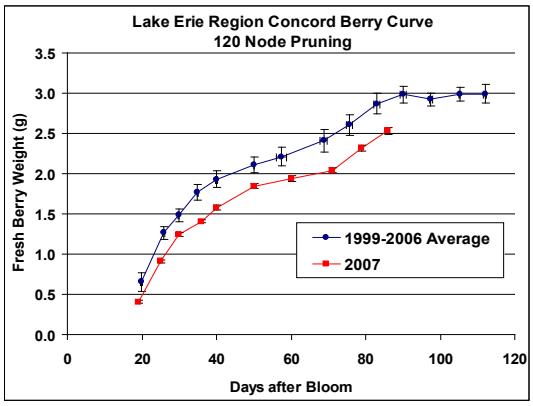
Dry conditions with warm days and cool nights have provided ideal ripening conditions for grapes in the Hudson Valley. There is a threat of rain for the weekend, and growers should be alert to the possibility of needing to control bunch rot due to the moisture and warm temperatures. Bird pressure continues to be heavy, so unprotected fruit is at risk. There have been some complaints of small berry size. Harvest of early varieties has begun in the lower Hudson Valley

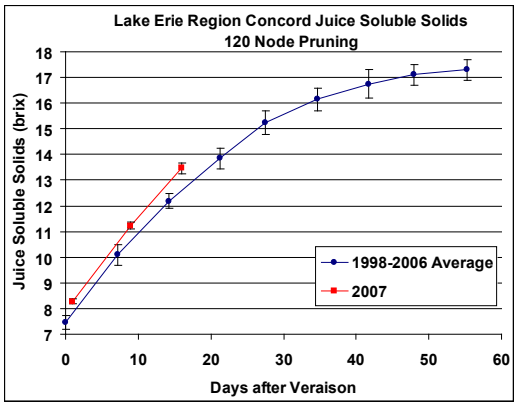
Concord Ripening Profile at Fredonia

Terry Bates, Cornell Vineyard Laboratory

Concord berry weight from 120-node pruned vines, collected September 5, 86 days after bloom (16 days after veraison) was 2.53g, approximately 10-12 % below the 8-year average. Vines should reach maximum berry weight between 90-100 after bloom. Final berry weight should be 10-15% below average at harvest (Top Figure).

Average juice soluble solids 16 days after veraison was 13.5° brix (Bottom figure), 7% higher than the 8 year average. In 2006, the cool and cloudy weather after veraison led to poor sugar accumulation which was difficult to recover from later in the ripening season because of shorter days and cooler temperatures. In contrast, the warm and sunny weather right after veraison in 2007 has led to above average sugar accumulation, especially last week If sugar accumulation rates fall to just average levels over the next few weeks, Concord will hit 16 brix well before average.





NY Wine Analytical Laboratory- a Resource for New York Winemakers

Tim Martinson

Since it started in 1989, the NY Wine Analytical Laboratory and Wine Data Bank, housed at the NYS Agricultural Experiment Station, has provided a wide range of analytical services for the wine industry in New York.

The laboratory, staffed by **Ben Gavitt,** Enology Extension Associate, runs analyses on juice and wine, including: pH, TA, sugar, malic, lactic, and acetic acid, alcohol, free and total S02, protein and tartrate stability, sterility, and sensory evaluations. Other more specialized analyses are also available. Last year, the laboratory processed 572 samples, requiring 8,212 separate analyses from 86 different wineries. The Enology program also responded to about 2,800 inquiries from winemakers about specific winemaking issues.

Results of these analyses are interpreted for those submitting samples, and also are entered in the wine data bank for future reference.

The majority of samples sent to the laboratory are for troubleshooting - to identify and fix problems that winemakers encounter during the winemaking process.

Winemakers use the laboratory for practical advice on problems such as sterility concerns, S02 content, protein stability, reduced sulfur odors, atypical aging, stuck fermentations, acid reduction, filtration, and guidance on bench trials for tannins, fining, and blending. The lab's services help winemakers answer the questions of what went wrong, what do I do about it, and how do I fix this.

Advice and analyses provided by Ben often allow winemakers to fix a wine that otherwise would be unmarketable - or in rare cases to discard defective wine that should not be bottled and sold. A couple of brief examples:

- An established winery noticed a hydrogen sulfide aroma, and had treated the wine with copper, but added too much and the copper content exceeded the legal limit. Fresh yeast fining and filtration was recommended, and the subsequent sample was well below the copper content limit. The lower copper content removed a product safety concern and the wine was sold.

- A sample of Riesling with stuck fermentation was submitted, after the winery had used several standard techniques to try to restart the fermentation. The analysis of glucose and fructose showed that all the glucose in the must had been consumed, leaving only fructose. Addition of glucose at half the concentration of fructose was recommended, and the winery was able to restart the fermentation and produce an excellent dry varietal Riesling.

- A Lake Erie winery submitted several samples for S02 analysis, and the wines had begun oxidizing. The Lab recommended the correct S02 addition and resubmission of samples. This was done, and while two of the wines required further adjustment, several other premium wines were saved.

In short, both new and established wineries wineries benefit from the troubleshooting services provided by the laboratory - which go beyond providing numbers. Ben's acute sensory expertise (a finely-tuned nose) and experience with a wide variety of wine defects and issues provide wineries with interpretation and expertise to help fix problems and improve quality.

Information about analytical services is posted at: http://www.nysaes.cornell.edu/fst/faculty/henick/NYSWAL/index.html

For more intormation, contact Ben Gavitt at 315-787-2263, or bkg1@cornell.edu

Fruit Maturation Report

Samples reported here were collected on **Monday, August 27.** No fruit samples were collected this week, due to the Labor Day holiday. The next samples will be collected on **Monday, September 10**. Where appropriate, sample data from 2006, averaged over all sites (mostly Finger Lakes), is included. Fruit maturation data from 2006 is posted at:

August 29: http://www.nysaes.cornell.edu/fst/faculty/henick/pdf/Ripening_Progress_06.pdf

September 5: http://www.nysaes.cornell.edu/fst/faculty/henick/pdf/Ripening%20Progress%2006R2.pdf

Cabernet Franc

Location	Collection	Sample ID	Location	Berry Wt g	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Acetic Acid
Finger Lakes	8/27/07	FL-CF-7	Cayuga Lake W	0.94	10.6	2.67	28.3	10.1	13.8	0.26
Finger Lakes	8/27/07	FL-CF-8	Seneca Lake E	1.12	11.5	2.72	24.6	9.1	11.8	0.13
Finger Lakes	8/27/07	FL-CF-9	Seneca Lake E	1.15	10.8	2.66	24.4	9.2	11.4	0.16
Finger Lakes	8/27/07	FL-CF-10	Seneca Lake W	1.12	9.5	2.60	29.9	9.6	15.3	0.28
Finger Lakes	8/27/07	FL-CF-11	Seneca Lake W	1.04	11.4	2.69	24.8	9.7	11.2	0.24
Finger Lakes	8/27/07	FL-CF-12	Seneca Lake W	0.83	12.1	2.79	20.1	8.7	8.9	0.04
Hudson Valley	8/27/07	HV-CF-2	Millbrook NY	0.85	10.2	2.71	26.1	8.7	13.2	0.23
Hudson Valley	8/27/07	HV-CF-3	Gardiner NY	0.96	12.2	2.81	20.5	7.8	9.8	0.08
Lake Erie	8/27/07	LE-CF-9	Fredonia Vin Lab	1.25	14.2	2.73	20.5	8.1	9.6	0.08
Long Island	8/27/07	LI-CF-4	Aquebogue LI	1.43	12.4	2.83	20.6	6.3	11.4	0.00
Long Island	8/27/07	LI-CF-7	Aquebogue LI	1.57	13.7	2.79	19.9	7.1	9.5	0.10
Average				**1.11**	**11.7**	**2.73**	**23.6**	**8.6**	**11.4**	**0.1**
'06 Average	**8/29**	**FL**	**Finger Lakes**	**1.32**	**12.3**	**2.82**	**21.5**	**7.1**	**11.5**	**0.10**

Riesling

Location	Collection	Sample ID	Location	Berry Wt g	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Acetic Acid
Finger Lakes	8/27/07	FL-R-1	Cayuga Lake W	0.78	12.4	2.73	24.8	11.1	10.7	0.12
Finger Lakes	8/27/07	FL-R-2	Cayuga Lake W	0.78	12.0	2.71	26.2	11.0	11.7	0.14
Finger Lakes	8/27/07	FL-R-3	Seneca Lake E	1.13	12.2	2.76	23.7	9.5	11.3	0.06
Finger Lakes	8/27/07	FL-R-4	Seneca Lake E	1.16	11.2	2.76	25.0	9.5	12.2	0.11
Finger Lakes	8/27/07	FL-R-5	Seneca Lake E	1.02	12.2	2.69	21.2	8.3	9.7	0.09
Finger Lakes	8/27/07	FL-R-6	Seneca Lake E	1.20	11.5	2.72	23.8	9.2	11.3	0.07
Hudson Valley	8/27/07	HV-R-4	Rhinebeck NY	1.54	13.9	2.78	23.6	8.4	11.8	0.15
Lake Erie	8/27/07	High pH	Fredonia Vin Lab	1.22	13.0	2.68	20.8	9.0	9.4	0.00
Lake Erie	8/27/07	Low pH	Fredonia Vin Lab	1.11	13.4	2.67	21.2	9.1	9.3	0.00
Long Island	8/27/07	LI-R-3	Aquebogue LI	1.24	11.6	2.77	23.5	8.4	12.0	0.00
Long Island	8/27/07	LI-R-6	Aquebogue LI	1.35	12.8	2.72	23.9	9.2	11.5	0.04
Average				**1.14**	**12.4**	**2.73**	**23.4**	**9.3**	**11.0**	**0.07**
'06 Average	**8/29**	**Clone 90**	**Finger Lakes**	**1.22**	**12.0**	**2.79**	**24.20**	**8.8**	**12.4**	**0.04**

Lemberger

Location	Collection	Sample ID	Location	Berry Wt g	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Acetic Acid
Finger Lakes	8/27/07	FL-LEM-13	Seneca Lake W	1.58	14.3	2.82	18.1	7.8	8.0	0.07
Finger Lakes	8/27/07	FL-LEM-14	Seneca Lake W	1.42	15.4	2.76	15.4	7.8	5.3	0.16
Average				**1.50**	**14.9**	**2.79**	**16.8**	**7.8**	**6.7**	**0.12**
'06 Average	**8/29**		**Finger Lakes**	**1.6**	**14.7**	**2.90**	**17.20**	**7.4**	**7.7**	**0.09**

Merlot

Location	Collection	Sample ID	Location	Berry Wt g	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Acetic Acid
Long Island	8/27/07	LI-M-1	Cutchogue LI	1.32	13.3	3.00	15.7	5.8	8.4	0.00
Long Island	8/27/07	LI-M-2	Cutchogue LI	1.50	13.8	2.82	16.9	7.1	7.4	0.09
Long Island	8/27/07	LI-M-5	Aquebogue LI	1.71	14.0	2.83	16.8	7.1	7.5	0.03
Long Island	8/27/07	LI-M-8	LIHRC Riverhead	1.66	15.7	2.92	15.9	6.6	7.0	0.10
Average				1.55	14.2	2.89	16.3	6.7	7.6	0.06

Chardonnay

Location	Collection	Sample ID	Location	Berry Wt g	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Acetic Acid
Hudson Valley	8/27/07	HV-C-2	Millbrook NY	1.29	13.2	2.89	17.1	6.9	8.2	0.10
Hudson Valley	8/27/07	HV-C-3	Gardiner NY	1.36	14.9	2.98	14.6	5.8	6.9	0.08
Long Island	8/27/07	LI-CH-9	LIHRC Riverhead	1.40	16.4	2.94	14.5	6.1	6.7	0.03
Average				1.35	14.8	2.94	15.4	6.3	7.3	0.07

Cabernet Sauvignon

Location	Collection	Sample ID	Location	Berry Wt g	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Acetic Acid
Lake Erie	8/27/07	High pH	Fredonia Vin Lab	1.03	15.7	2.75	22.0	8.7	10.6	0.03
Lake Erie	8/27/07	Low pH	Fredonia Vin Lab	1.11	15.5	2.76	21.9	8.4	10.4	0.00
Average				1.07	15.6	2.75	22.0	8.6	10.5	0.02

Noiret

Location	Collection	Sample ID	Location	Berry Wt g	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Acetic Acid
Finger Lakes	8/27/07	Exposed Clus	Keuka Lake W	1.35	13.6	2.89	21.0	8.3	10.4	0.00
Finger Lakes	8/27/07	Shaded Clus	Keuka Lake W	1.26	13.6	2.93	19.6	7.9	9.9	0.00
Hudson Valley	8/27/07	HV-N-3	Gardiner NY	1.54	14.7	2.90	15.3	6.7	6.5	0.04
Lake Erie	8/27/07	High pH	Fredonia Vin Lab	1.55	15.4	2.82	17.0	7.7	7.1	0.00
Lake Erie	8/27/07	Low pH	Fredonia Vin Lab	1.50	15.8	2.81	16.6	7.6	6.6	0.01
Average				1.44	14.6	2.87	17.9	7.6	8.1	0.01

Traminette

Location	Collection	Sample ID	Location	Berry Wt g	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Acetic Acid
Finger Lakes	8/27/07	FL-TRM-19	Keuka Lake W	1.28	8.7	2.72	30.9	9.8	16.5	0.19
Finger Lakes	8/27/07	FL-TRM-20	Keuka Lake W	1.45	8.9	2.62	30.3	10.2	15.3	0.25
Hudson Valley	8/27/07	HV-T-1	Gardiner NY	1.21	12.9	2.76	18.5	7.9	7.8	0.15
Lake Erie	8/27/07	LE-T-High-1	Fredonia Vin Lab	1.42	13.2	2.63	19.6	8.2	8.2	0.06
Lake Erie	8/27/07	LE-T-Low-2	Fredonia Vin Lab	1.36	13.7	2.65	19.5	8.4	8.1	0.08
Average				1.34	11.5	2.67	23.8	8.9	11.2	0.15

Marachel Foch

Location	Collection	Sample ID	Location	Berry Wt g	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Acetic Acid
Finger Lakes	8/27/07	No leaf Pull	Seneca Lake W	0.91	17.8	3.03	13.7	5.8	6.1	0.05
Finger Lakes	8/27/07	Leaf Pull	Seneca Lake W	0.97	18.5	3.04	14.3	5.7	6.5	0.12
Average				0.94	18.2	3.04	14.0	5.8	6.3	0.09

Thanks to the following persons who collected samples and data:

Steve Hoying, John Hudleson, Hudson Valley Research Laboratory, Higland

Libby Tarleton and Alice Wise, CCE Suffok and Long Island Horticultural Research and Extension Center

Bill Wilsey and Hans Walter-Peterson, Finger Lakes Grape Program

Terry Bates, Rick Dunst, and crew, Vineyard Laboratory, Fredonia

Berry Sensory Analyis Workshop Held in Geneva

Timothy E. Martinson

Dr. Gianni Trioli, of Vinidea, a consulting company based in Italy, presented a half-day workshop on berry sensory analysis at Geneva on Wednesday, September 5. The workshop was a repeat of a similar workshop held last year in Geneva and on Long Island, and was organized by Ben Gavitt of the Cornell Enology program.

The basic goal of the workshop was to teach participants objective methods of assessing grape maturity through sensory methods (i.e. tasting).

Participants were shown a detailed 'analytical' method for assessing 20 berry characteristics, including physical berry characteristics (softness, color, pedicel [grape stem] removal), pulp ripeness (detachment from skins, sweetness, acidity, herbaceousness, fruitness), skin ripeness (through chewing skins - disintegration, tannin intensity, astringency and dryness; herbaceousness and fruity aroma), and seed maturity (color, hardness, aroma, and tannin intensity and astringency).

Trioli then introduced a 'synthetic scoresheet', using the more detailed method to rate fruit maturity on the overall four characteristics of technological ripeness, pulp ripeness, skin ripeness, and seed ripeness. This simpler recording method results in four 'scores', and is easy enough to use in the field.

What are the benefits? The benefits of using this method of maturity assessment are that it: 1) limits subjectivity and therefore variability in using berry tasting to judge maturity; 2) provides a record that can be used to compare blocks, different sampling times, and years; and 3) others can be trained to use this method. The bottom line is that using this method should allow winemakers to be more consistent in their preharvest maturity assessment.

For those interested in more information, these techniques are also described in the book **Winegrape Berry Sensory Assessment in Australia,** published by Winetitles. http://winetitles.com/

This newsletter was made possible through a grant from the New York Wine and Grape Foundation's Total Quality Focus program.

Veraison to Harvest is a joint publication of:

Cornell Enology Extension Program

Statewide Viticulture Extension Program

Long Island Grape Program

Finger Lakes Grape Program

Lake Erie Regional Grape Program

Hudson Valley Regional Fruit Program