

# VERAISON TO HARVEST

Statewide Vineyard Crop Development update #7



Cornell University  
Cooperative Extension

October 17, 2008

Edited by Tim Martinson and Chris Gerling

## Around New York...

*STATEWIDE - TIM MARTINSON*

Cool, sunny weather was the norm this week throughout NY, and while the numbers aren't moving much (see fruit maturity table, p. 4-6), flavor development continues. Cabernet Franc brix and acids look much like last year at this time, while Riesling acids (still hovering in the 12 to 13 g/liter range) look more like '06 than '07 (when they were at 10 g/liter). Merlot on Long Island looks on track with last year's numbers (22° Brix, TA 6.9 g/l.) - although our samples showed slightly higher malic acid than last year, and slightly higher pH (3.5). The two Concord samples from the Finger Lakes are ripe at 17.6 brix, with a heavy crop, while some heavily-cropped Lake Erie vineyards are struggling to reach minimum processor standards. Although the New York Agricultural Statistics Service is projecting an 8% drop in the overall crop from 2007, I'm not seeing much evidence of a lighter crop in the Finger Lakes. With Riesling wrapping up, harvest of late reds will move into high gear next week.

*LONG ISLAND - ALICE WISE AND LIBBY TARLETON*

The weather over the last few weeks has been cooperative with no rain and sunny warm days. The bulk of the white grape harvest has been completed with a few blocks of white grapes such as Gewurztraminer remaining. Growers are pleased with how their whites are progressing in the winery. Merlot is starting to come off, that harvest will continue through the next few weeks. The biggest challenge now is keeping large flocks of starlings out of the vineyard. These flocks will feast on the remains of machine harvested fruit but more importantly will jump over to tasty red varieties that are still hanging. Lots of noisemakers can be heard in local vineyards as managers try to disrupt feeding by



*Norton, the only 'true' American variety is highly resistant to diseases, and produces a full-bodied red wine. It is widely planted in Missouri and Virginia. It is being tested in Alice Wise's variety trial at the Long Island Horticultural Research and Extension Center in Riverhead.*

Photo by Alice Wise

hungry birds. The accompanying photo shows the American winegrape variety Norton hanging at the research vineyard located at the Long Island Horticultural Research and Extension Center. This variety is being evaluated along with 26 others for quality, quantity and pest susceptibility.

*FINGER LAKES - HANS WALTER-PETERSON.*

The Finger Lakes region experienced almost ideal harvest conditions this week until Thursday. Sun and warm temperatures gave growers a chance to let some varieties hang in the vineyard a little longer, but at this point in the season, any further physiological maturing of the fruit will likely be minimal as a result of canopies that are starting to shut down and shortened daylength.



*Morning fog over Seneca (foreground) and Keuka Lakes*

*(Background)*  
Photo by Tim Martinson

Riesling is the primary variety that is being harvested right now in the Finger Lakes, with winemakers reporting that they are pleased overall with the quality of this year's crop. Acidity levels are more in line with those from most years, and flavors appear to be quite good. Some lingering Gewurtztraminer and Traminette may still be coming in over the next few days as well. Bordeaux reds, Noiret and Corot Noir will start coming in at the end of this week and into next week also. Flavor development in these also seems to be coming along well, with minimal green, unripe flavors in the Cabernet Franc samples that I have tasted over the past several days.

Based on what we're hearing from growers, and seeing on the Finger Lakes Grape Listing website, tonnage appears to be above normal in many varieties. There are several growers who have harvested 10 tons/acre or more of Concord in certain locations on Keuka Lake, and we hearing about higher than normal tonnage on many other varieties as well, including vinifera varieties.

#### ***LAKE ERIE - JODI CREASAP GEE***

After a nice sunny weekend, the weather appears to be deciding that fall should start. The leaves on the trees are nearing peak color, and the grapes on the vines are close to peak ripeness. The Concord harvest continues to be a challenge for heavily-cropped vineyards, although one of the processors has decreased standards to be able to accept fruit from blocks that could not meet the higher standard. The majority of the hybrids have been harvested, especially the whites, as have some Riesling this week and Pinot Gris last weekend. Noiret and Cabernet Sauvignon will hang until the winemakers are ready for them, which may be another week to 10 days. At this point, much of the fruit has dehydrated from the warm sunny weather this past weekend, which lead to higher sugars in some varieties. Bunch rot and the forecasted cooler weather may dictate harvest time for many of the growers in the region.

#### ***HUDSON VALLEY - STEVE HOYING AND STEVE MCKAY***

We are nearing the end of the harvest in the Hudson Valley with only the later varieties such as Frontenac, one block of Pinot Noir and Cabernet Franc to go. Incidence of fruit rot in the region is variable with those vineyards with good spray programs and open canopies through leaf pulling and vine management having very little disease. Some of the fruit still on the vine has begun to shrivel indicating that some yield loss is now occurring. Temperatures predicted for the October 18th weekend are expected to fall below freezing. All varieties are projected to be ripe and mature, even if a frost were to occur

#### **MIRA DE ORDUÑA STARTS MUST NITROGEN AND ACETALDEHYDE SURVEYS WITH COOPERATING WINERIES**

*Timothy E. Martinson*



Cornell enologist and microbiologist **Dr. Ramón Mira de Orduña** is conducting surveys of must nitrogen and acetaldehyde this year with cooperating wineries in New York.

Cooperating wineries will be providing must samples from the press deck (nitrogen) and throughout the winemaking process (acetaldehyde) to better characterize what is happening with these two indicators.

**Must nitrogen content** is important for growth and metabolism of yeast and ML bacteria. Low nitrogen concentrations can lead to production of undesirable aroma compounds (hydrogen sulfide and mercaptans) or sluggish/stuck fermentations. Previous informal surveys have identified low N content in grapes, and prompted the previous recommendation to add DAP/yeast extracts routinely to NY musts to prevent stuck fermentations. In this survey, Ramón will measure yeast assimilable nitrogen (YAN) and also characterize amino acid profiles. This will help refine recommendations on specific needs and practices to manage must nitrogen.

**Acetaldehyde** is formed during fermentation, but also through oxidation of ethanol after fermentation. Since it binds strongly to SO<sub>2</sub>, controlling its formation during winemaking should allow winemakers to reduce SO<sub>2</sub> additions accordingly. Samples from the NY Wine Census in 2007 identified large variations in acetaldehyde in finished wines from NY wineries. By sampling at different stages in the vinification process, Ramón hopes to identify the critical control points that are responsible for the bulk of acetaldehyde formation during the winemaking process. Identifying and considering these points will allow winemakers to better manage acetaldehyde and SO<sub>2</sub> levels during and after vinifications. Thanks to the cooperating wineries for their participation in these studies. Preliminary results will be presented at the 2009 Wine Industry Workshop.

## CAUSES OF STUCK FERMENTATIONS

*Chris Gerling*

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Stuck fermentations are a huge headache in wineries, and lately they seem to be even more prevalent across New York State. Ramón Mira de Orduña is currently conducting a study that may help to diagnose why this problem is happening in certain years and not others by looking at nitrogen levels, a notable cause of stuck fermentations and one that will

be mentioned below. While each situation is different, and it's not usually possible to diagnose a problem without all of the information, the following is a troubleshooting guide that can at least give you piece of mind to know you've done what you could. We all get frustrated when we call tech support and they ask us if the troubled device is plugged in. They wouldn't ask that question if it didn't solve a large percentage of the problems, though.

- 1. Yeast-** Whenever I go to a talk by yeast experts from Lallemand or other companies, they always start with the proper way to rehydrate and prepare yeast for pitching. Once again, if they knew that 100% of their customers were always following directions, they wouldn't bother. The bottom line is that pouring dried yeast directly into must is not the way it was intended to be used. I'm not going to debate the relative merits of spontaneous fermentations here, but I will say that you are increasing your chances of a fermentation either not starting or failing to finish. Also, keep in mind that different strains have different characteristics, and some strains (EC1118) tend to be much harder than others (Epernay II).
- 2. Temperature-** Yeast are living organisms. They have temperature ranges in which they thrive, and temperature ranges in which they don't. If your must has just come out of a cold vineyard, a cold room or a cold settling tank, that's going to be chilly for the starter culture. Acclimate the yeast to temperature changes by slowly introducing the cold juice to the culture. Try to keep the culture from having to undergo a temperature change of more than 10C at once by adding the must in stages (making your final acclimation stage within 10C of the tank). Fermenting, healthy yeast can also be stressed or even killed by too little or too much heat.

- 3. Nitrogen-** Yeast will need nutrients besides sugar to help them thrive. Added nutrients (N, K, P) can provide amino acids and such to keep everybody healthy as long as possible. In a perfect world we're talking about measurement and management, but where people lack the time and resources to measure, prescribed additions may be necessary.
- 4. Sugar-** Yeast metabolize glucose and fructose, but they need the glucose to get at the fructose. A common cause of fermentation stalls with a little (but still some) sugar remaining is that all the glucose has been used and only fructose remains. In this situation you need to take the somewhat counterintuitive step of adding some sugar, namely glucose, back to the tank.
- 5. Alcohol-** Yeast, in their glory, are poisoning themselves with their own waste products, not unlike other species on this planet. Anyway, when initial brix is too high, the fermentative environs may become toxic to the yeast before they're done with the job. While this problem tends to be, how to say it, Western in nature, we are still pushing further and further up the ripeness scale every (or at least every other) year. Late harvest and ice wines are candidates for such a problem but they tend to be cases where plenty of residual sugar is just fine. There are yeast strains and nutrients that have been developed with higher alcohol situations in mind, however, so those may be worth looking into when you're trying to make a dry wine.

One thing to remember is that yeast often give signs that they're not as happy as they could be. Yeast stress can show up as a slowing in the fermentation pace and of course as a myriad of strange smells. There's no reason to panic; this is just another source of data to feed into your decision-making process. We know that there are people in New York who are doing everything by the book and still having problems, and we hope to investigate that ASAP. In the meanwhile, cover your bases and know that it's much more satisfying to stump the tech support people than it is to hear that smarmy "sir/ ma'am, you really have to turn it on before it will print." Best wishes.



## FRUIT MATURATION REPORT

Samples reported here were collected on **Monday, October 13, 2008**. Where appropriate, sample data from 2006, averaged over all sites (mostly Finger Lakes), is included. Tables from 2007 are archived at: : <http://blogs.cce.cornell.edu/grapes/07-veraison-to-harvest-archive/> Next samples will be collected **Monday, October 20**.

### *Cabernet Franc*

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Finger Lakes	10/13/2008	FL-9	1.52	21.3	3.18	9.2	5.1	2.9	0.2
Finger Lakes	10/13/2008	FL-10	1.69	20.8	3.23	9.9	5.3	3.5	0.2
Finger Lakes	10/13/2008	FL-11	1.74	19.1	3.45	9.6	5.0	5.1	0.8
Hudson Valley	10/13/2008	11-HV-CF-4	1.31	22.6	3.36	7.5	4.2	2.7	0.4
Lake Erie	10/13/2008	12-LE-CF-X-5-7	1.90	22.2	3.39	8.5	4.2	3.7	0.3
Long Island	10/13/2008	LI-CF-1	1.71	19.7	3.49	7.7	4.4	3.3	0.6
Long Island	10/13/2008	LI-CF-5	1.72	19.5	3.43	8.6	4.8	3.9	0.6
Average	10/13/2008		1.66	20.7	3.36	8.7	4.7	3.6	0.4
Previous sample	10/6/2008		1.67	19.8	3.28	8.8	4.7	3.6	0.5
07 Average	10/15/07		1.58	21.3	3.32	7.9	4.5	2.7	*
'06 Average	10/16/06		1.63	21.5	3.20	10.8	4.0	5.3	*

### *Cabernet Sauvignon*

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Lake Erie	10/13/2008	9-LE-CS-Not Thinned	1.43	20.0	3.19	12.7	5.6	6.3	0.4
Lake Erie	10/13/2008	9B-LE-Late Clus Thin	1.55	20.7	3.25	11.3	5.1	5.3	0.6
Long Island	10/13/2008	LI-CS-2	1.48	20.0	3.32	9.8	5.2	4.4	0.6
Average	10/13/2008		1.49	20.2	3.25	11.3	5.3	5.3	0.5
Previous sample	10/6/2008		1.52	19.2	3.17	10.7	5.2	4.8	0.6
07 Average	10/8/2007		no data	20.9	3.23	10.8	5.7	4.3	*

### *Chardonnay*

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Final Average	9/29 & 10/1		1.56	20.2	3.23	8.9	4.3	3.6	0.6

### *Lemberger*

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
<b>Finger Lakes</b>	Harvested	FL-12							
<b>Finger Lakes</b>	10/13/2008	FL-13	2.14	20.7	3.30	10.3	5.8	4.3	0.6
Previous sample	10/6/2008	FL-13	2.02	20.4	3.16	10.4	5.6	4.2	0.6
'07 Final sample	10/08/07		1.99	20.4	3.12	9.3	5.4	2.7	*
'06 Final Sample	10/01/06		2.40	20.0	3.16	10.2	4.3	3.7	*

### *Merlot*

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Long Island	10/13/2008	LI-M-3	1.74	22.1	3.48	7.0	4.2	2.2	0.6
Long Island	10/13/2008	LI-M-6	1.59	22.0	3.59	6.7	4.2	2.9	0.6
average	10/13/2008		1.67	22.1	3.53	6.9	4.2	2.6	0.6
Previous sample Ave	10/6/2008		1.73	21.4	3.41	7.0	4.7	1.8	0.8
'07 Average	10/15/07		1.77	21.0	3.36	6.9	4.4	1.6	*

### *Pinot Noir*

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Final Sample	10/6/2008	Only one block	1.26	22.8	3.37	9.3	4.7	4.3	0.4

Riesling

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Finger Lakes	10/13/2008	FL-14	1.65	20.3	2.96	12.8	6.8	4.2	0.1
Finger Lakes	10/13/2008	FL-15	1.77	19.3	2.95	13.0	7.0	4.4	0.0
Finger Lakes	10/13/2008	FL-16	1.62	18.7	3.06	13.9	7.0	5.4	0.3
Finger Lakes	10/13/2008	FL-17	1.50	19.6	2.98	12.3	6.8	3.7	0.1
Finger Lakes	10/13/2008	FL-18	1.68	18.2	2.98	12.6	7.0	4.1	0.2
Lake Erie	10/13/2008	10-LE-Leaf Pull	1.59	18.3	3.10	10.5	5.8	3.7	0.7
Lake Erie	10/13/2008	11-LE-R-No leaf pull	1.74	17.9	3.10	11.1	5.8	4.4	0.5
Average	10/13/2008		1.65	18.9	3.02	12.3	6.6	4.3	0.3
Previous Sample	10/6/2008		1.64	18.3	2.94	12.7	6.6	4.5	0.2
'07 Average	10/08/2007		1.50	17.9	3.08	10.0	6.1	2.6	*
'06 Average	10/16/06		1.80	18.8	3.00	13.1	5.5	5.5	*

Sauvignon blanc

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Final sample	9/22/2008	LJ-SB-4	1.77	20.1	3.03	10.8	5.3	4.0	0.0

Marachel Foch

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Final Average	9/22/2008		1.02	24.1	3.18	12.8	5.3	6.2	0.2

Noiret

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Finger Lakes	10/13/2008	FL-1 Leaf Rem/Shoot th	1.97	17.4	3.09	12.3	5.8	5.3	0.4
Finger Lakes	10/13/2008	FL-2 No LR/no Sh Th	1.74	18.1	3.12	11.4	5.4	4.7	0.2
Hudson Valley	10/13/2008	14-HV-N-4	1.94	19.8	3.21	7.8	4.2	2.3	0.2
Lake Erie	10/13/2008	5-LE-N-8-1-7	1.55	18.2	3.16	10.5	5.4	4.3	0.2
Lake Erie	10/13/2008	6-LE-N-3-1-7	1.72	18.9	3.24	10.1	5.2	4.4	0.3
Average	10/13/2008		1.78	18.5	3.16	10.4	5.2	4.2	0.3
Prev Sample	10/6/2008		1.96	17.9	3.09	10.7	5.4	4.3	0.3
'07 Average	10/1/2007		1.82	18.9	3.22	9.6	5.2	3.7	*

Cayuga White - Note - Vineyard below was harvested 3 wk ago. The 'sample vines' were left unharvested. This is definitely something you don't want to do with Cayuga White, normally harvested around 18 brix to avoid development of labrusca-like flavors

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Hudson Valley	10/13/2008	3-HV-CW-Not thinned	3.00	23.8	3.43	8.9	5.0	3.5	0.1
Hudson Valley	10/13/2008	4-HV-CW-Cluster-thinned	3.05	23.9	3.38	8.9	5.2	3.1	0.0
average	10/13/2008		3.03	23.9	3.40	8.9	5.1	3.3	0.1
Prev Sample	10/6/2008		3.28	22.8	3.33	8.1	4.6	2.8	0.0

Corot Noir

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Finger Lakes	10/13/2008	FL-22 Unthinned	2.37	18.6	3.48	6.1	3.3	2.2	0.2
Finger Lakes	10/13/2008	FL-23 Shoot thin/ LR	2.19	16.8	3.44	5.7	3.2	1.5	0.1
average	10/13/2008		2.28	17.7	3.46	5.9	3.3	1.9	0.2
Previous sample	10/6/2008		2.32	16.7	3.38	6.4	3.6	2.3	0.1

DeChaunac

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Final Average	9/29/2008		2.80	17.9	2.87	14.8	6.9	6.0	0.0

Seyval blanc

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Final Average	9/22/2008		2.16	21.5	3.04	9.0	4.2	2.4	0.2

*Traminette*

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Hudson Valley	Harvested	13-HV-T-4							
Lake Erie	10/13/2008	3-LE-Shoot Thin	1.62	21.0	3.11	11.1	5.0	4.4	0.0
Lake Erie	10/13/2008	4-LE- Not thinned	1.92	20.3	3.03	11.8	5.5	4.5	0.0
Lake Erie	Harvested	7-LE-T-Shoot Thin							
Lake Erie	Harvested	8-LE-T-Not Thinned							
average	10/13/2008		1.77	20.7	3.07	11.5	5.3	4.5	0.0
Prev Sample	10/6/2008		1.95	20.6	3.03	10.3	5.2	3.5	0.0
'07 Average	10/01/2007	(Final Sample)	1.68	22.0	3.02	9.9	5.2	3.1	*

*Vidal Blanc*

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Hudson Valley	10/13/2008	1-HV-V-Not thinned	2.26	23.1	3.31	10.6	4.9	4.6	0.2
Hudson Valley	10/13/2008	2-HV-V-Clust Thin	2.01	25.2	3.32	11.4	5.1	5.2	0.2
Average	10/13/2008		2.14	24.2	3.31	11.0	5.0	4.9	0.2
Previous Sample	10/6/2008		2.22	22.6	3.22	10.4	5.0	4.3	0.2

*Concord*

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Finger Lakes	10/13/2008	FL-19	3.64	17.6	3.42	5.7	2.7	1.7	0.2
Finger Lakes	10/13/2008	FL-20	3.43	17.7	3.47	5.2	2.4	1.7	0.1
average	10/13/2008		3.54	17.7	3.45	5.5	2.6	1.7	0.2
Prev Sample	10/6/2008		3.69	17.4	3.38	5.7	2.8	2.0	0.1

*Diamond*

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Final Average	9/15/2008	Final	>2.00	17.4	3.02	10.0	5.0	2.9	0.2



*Gewurztraminer harvest at Lamoreaux Landing Vineyards, Seneca Rd, October 15, 2008*

Photo by Tim Martinson



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