

# VERAISON TO HARVEST

## Statewide Vineyard Crop Development Update #2



Cornell University  
Cooperative Extension

September 12, 2008

Edited by Tim Martinson and Chris Gerling

### Around New York...

#### *STATEWIDE - TIM MARTINSON*

Since our last newsletter two weeks ago, warm temperatures and modest rainfall (some associated with hurricane Hannah) provided ideal ripening conditions for grapes throughout the state (See Fruit Maturation report starting on p. 4). Early varieties are at or past harvest. Fruit samples this week showed numbers for brix, pH and acid very comparable to the same numbers from '07. Since our 8/25 sample, titratable acidity has dropped by one-third to half, and many varieties have gained 3 to 4° brix. Several of our varieties (particularly with hybrids) involve paired samples of side by side vineyard rows that had different canopy management practices (eg. Shoot and cluster thinning, leaf removal in fruiting zone). Fruit chemistry in many of these blocks (see notation in 'Samples' column) has started to show differences - with 'thinned' and 'leaf removal' fruit showing 0.5-1.5° higher brix, and 1-3 gram lower titratable acidity than fruit from 'unthinned' vines.

#### *LONG ISLAND - ALICE WISE AND LIBBY TARLETON*

Pinot Noir and Chardonnay for sparkling wine were picked starting the week after Labor Day. The remnants of Tropical Storm Hanna blew through Long Island Sept. 6-7. Fortunately, the storm did not live up to the media hype. Vineyards needed the rain as many were bordering on drought stress but managers were reluctant to turn on the irrigation. Fruit integrity is good, flavors are really developing nicely in Sauvignon Blanc, Chardonnay, Pinot and Merlot. We have yet to see more than a smidgen of cluster rot. Bird pressure is spotty, heavy in some blocks, non-existent in others. The weather has cooled slightly with temps holding steady in the '70's. Harvest for early varieties such as Pinot Noir may commence next week but with minimal rain predicted, growers will likely leave fruit as long as possible. Interestingly, as of Sept. 7, GDD for 2008 was virtually identical to the same date in 2007. As for Long Island berry analysis results, we berry sampled on Monday Sept. 8 and overnighted the samples. Unfortunately, the delivery service sent our box all over the country, delaying delivery to Geneva. This happened last year as well. We are switching carriers for next week, which will cost more, but we hope they can offer us better service.

#### *FINGER LAKES - HANS WALTER-PETERSON.*

Harvest season is underway in the Finger Lakes as of last week with Aurore and early Seyval grapes being picked. This week the focus has shifted to Elvira, GR7 and some earlier Baco Noir. And at least one winery has picked Pinot Noir for use in rosé and sparkling wine production. Fruit maturity really seemed to accelerate fairly rapidly over the past two weeks thanks to adequate but not excessive rainfall and warm temperatures until this past weekend. Most of the varieties tested from the Finger Lakes have Brix readings in the mid to upper teens, while pH for most is hovering somewhere around the 3.0 mark. Berry weight changes ranged everywhere from 0% (Foch) to 67% (Chardonnay) over the two week period. *Sixty-seven percent in two weeks?!?* Well, don't read a whole lot into that quite yet - the longer term trend will tell us more about berry development than any one sample reading. How much is that due to water uptake? How much due just to statistical error? It's hard to tell, but we did have about 1" of rain over the two week stretch between sampling dates. The cooler weather we are expecting over the next week should slow Brix accumulation and acid degradation to some degree. Flavors seem to be developing nicely in fruit that I have tasted from several vineyards over the past week as well, although there's still plenty of acid in most.

Downy mildew continues to pose challenges to growers in their efforts to keep foliage green and functional. It is easy to find signs of



*Experimental vineyard at Long Island Horticultural Research and Extension Center near Riverhead. Alice Wise's program hosted a field day this past Tuesday. Attendees saw the variety/clone trial, a discussion some of the newer selections planted (Albarino, Zweigelt etc.), looked at Norton (bearing) and Marquette (planted in '08)- both of which had only 1 fungicide all season, looked at under trellis mowing treatments, alternative spray trial (conventional, low impact and 2 versions of almost organic), and looked at weed specialist Andy Senesac's 'low-mow' grass trial.*

Photo by Tim Martinson

older infections on leaves that were stopped by fungicide applications, but their presence means that the potential is still out there for new infections to occur. The weather forecast indicates some more cool nights ahead with temperatures approaching projected dewpoints, meaning good conditions for production of new spores that can spread infections. Botrytis and other bunch rots have been kept under control in most vineyards that I have visited to this point. Next week will bring the start of Niagara harvest for juice production, along with more Seyval blanc. I expect more Baco and Foch will be making their way to the crush pad as well.

**LAKE ERIE - JODI CREASAP GEE**

More rain and cool weather have brought the region closer to fall. We are just at that 30" mark of rain for the year so far, although September has been kinder to us with more sunshine and less rain than we saw in August. Growers here have been busy harvesting hybrids or preparing for harvest of later-ripening varieties. Wineries are frantically preparing for the upcoming crush by cleaning (or even reconstructing) crushpads and equipment. Fruit in vineyards affected by hail this summer are ripening along with their undamaged counterparts, although they certainly aren't very pretty. Most of the severely damaged fruit has shriveled and fallen from the clusters, or will fall during the shaking of the vines at harvest time. Vineyards with poor disease management practices this year are already losing leaves from defoliation due to powdery and downy mildews. With an eye on Hurricane Ike and what potential rains may come with it, we're keeping our fingers crossed for more sunny and dry weather to get us through the harvest.

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

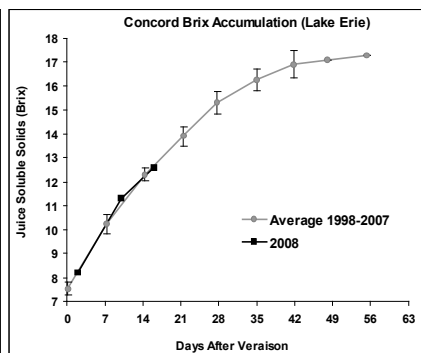
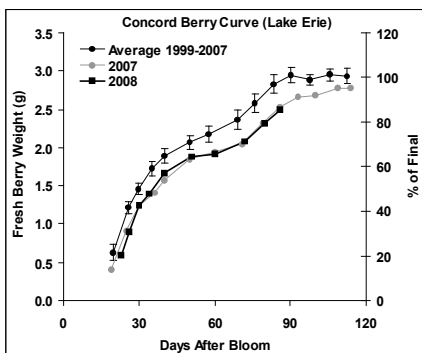
The Hudson Valley, which had been experiencing a relatively dry period at the end of August, received some precipitation as a result of Hurricane Hanna but less than expected. Rainfall amounts were variable but generally greater on the east side of the Hudson River and less than 1 inch. Weekend rain did not seem to cause cracking but the heavier rain on September 9 continued to penetrate and wet the soil. Some harvest of 'Seyval' began on September 5th before the weekend. Many growers held off until the week of September 8th. 'Chardonnay' and 'Pinot Noir' are not yet ready to pick, and growers are awaiting further flavor development and seed maturity. Harvest is expected within the next few weeks.

**CONCORD RIPENING PROFILE AT FREDONIA - SEPTEMBER 11**

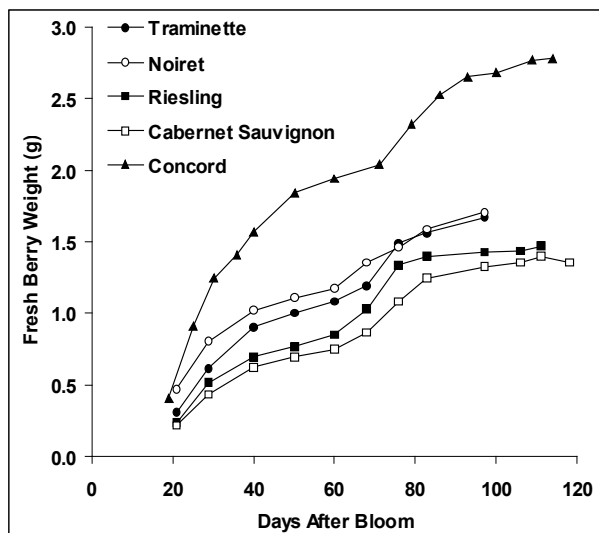
*Terry Bates  
Research Associate*



Concord berry weight and juice soluble solids were taken on 9/8/2008 and continued to increase over the past week. The 2008 berry weight curve continues to follow closely to the 2007 and juice soluble solids are also close to the ten-year average.



For comparison, the following 2007 Concord berry curve is plotted against the berry curves of Traminette, Noiret, Riesling, and Cabernet Sauvignon. The berry curves for the varieties other than Concord are taken from the rootstock/soil pH experiment at the Fredonia Vineyard lab and are planted on 3309C rootstock.



## GRAPE GROWING FOR WINEMAKERS, WINEMAKING FOR GROWERS: HARVEST CONSIDERATIONS

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NYSAES*

*Hans Walter-Peterson, Viticulture Extension  
Specialist, Finger Lakes Grape Program*

[Ed. note: This article originally appeared in **Finger Lakes Vineyard Notes**, September 2008 issue #6. - TEM]

The vineyard and winery are a team, regardless of whether they are from the same company or not. The grapes are the wine. It doesn't get any simpler than that. But while it's a simple concept, there are a lot of implications. The most important implication is that if you're a grape grower, you're a part of the winemaking team. The grapes on the pad are not your final product. The wine in the bottle is your final product, and it is just as much yours as it is the winemaker's. Of course, it makes for a nice idea but also a risky proposition. After all, as a grower, you can only control so much. **That's why we need to focus on the things we can control.** That's rule #1. Rule #2: **When and how harvest takes place is quite possibly the most important part of the entire grape growing or winemaking process.** The make-up of the fruit is maximized on the vine. Harvest and processing are not going to increase the quality; the goal is to maintain and reflect it. With these ideas in mind, what can we do to make this work?

**Communication.** This was the most common theme among all of the people we spoke with, both growers and winemakers. Harvest is not the time to keep things close to the vest. Share good news, share bad news ... heck, share no news. You don't have to bother each other but you do need to get on the same page and stay there. Throughout the season, the grower and processor should lay out what the goals are and what kind of updates are necessary. If you know early on that something is going to be different than you expected, don't keep it to yourself. For example, maybe the winery can use more fruit or maybe they'll help you get it sold to someone else. If you talk, there's a better chance no one gets surprised and no one gets upset. Are you going to be early, late, light, heavy, etc? If the crusher is down and both the grower and winery would be better served having the grower pick for someone else first, that's useful

information. Most growers and winemakers are pretty good at dealing with whatever comes their way, but that doesn't mean they like things to be as difficult as possible.

A corollary to this mentioned by one of the people we talked to was something that seemed obvious, but is worth mentioning. Make sure that there is a reliable way of contacting you so you can find out about schedule "irregularities" as soon as possible. Did you get a new cell phone number this year, or a new email address? Have you passed that information along to your growers or buyers? Do you make sure your phone is charged every day? Like we said, these seem obvious but we have heard of these things causing problems during harvest.

**Understanding goals and expectations.** In a way, we're back to communication again. If both the vineyard and winery are clear on what they're trying to do and how to accomplish that, decisions can be made more easily. Different varieties and styles may call for different measures in the vineyard, which may also require higher compensation for those measures to be done. Discussing these issues before harvest gets underway can help to make working with each other at harvest easier. For example, what are the expectations regarding use of spray materials close to harvest versus the need for fruit that is free of disease?

**Timing.** This might be one of the more significant areas when it comes to potential conflicts between growers and winemakers, because both sides have pressures that they must deal with. Having a better understanding of those pressures can help to make harvest go smoother for everyone (back once again to communication and understanding expectations). Timing issues at harvest, regardless of the cause, can undo all of the hard work in the vineyard during the season. Timing and care at harvest will help ensure that the fruit will arrive at its destination in the same condition you put so much effort into achieving.

*Growers:* For winemakers, timing is not just a matter of logistics. It's at least partially true that when fruit arrives early, winemakers stand a better shot of finishing the day with the same number still on the calendar, but this isn't the real issue. The real issue is heat and its effects on grapes once they're off the vine. Grapes that are allowed to sit outdoors on a hot day, even for just 6-8 hours, can develop off-flavors

*Continued on page 8*

## FRUIT MATURATION REPORT

Samples reported here were collected on **Monday, September 8, 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, September 15**.

*Samples were collected on Long Island as scheduled, but a shipping error delayed arrival in Geneva, and samples were spoiled in transit. Long Island samples will resume next week.*

### *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	9/8/2008	FL-9 CF	1.50	16.9	2.97	11.5	5.8	4.4	0.2
Finger Lakes	9/8/2008	FL-10 CF	1.60	15.5	2.97	12.7	5.9	5.5	0.2
Finger Lakes	9/8/2008	FL-11 CF	1.80	15.9	3.10	12.0	6.6	5.2	0.8
Hudson Valley	9/8/2008	11-HV-CF-4	1.21	18.4	3.00	10.9	5.6	3.8	0.5
Lake Erie	9/8/2008	12-LE-CF	1.81	16.9	3.00	12.4	5.6	5.4	0.4
Long Island	delayed	spoiled							
Long Island	delayed	spoiled							
<i>Average</i>	<i>9/8/2008</i>		<i>1.58</i>	<i>16.7</i>	<i>3.01</i>	<i>11.9</i>	<i>5.9</i>	<i>4.9</i>	<i>0.4</i>
Prev. Samp. Average	8/27/2008		1.27	12.8	2.74	21.8	7.9	10.6	0.1
07 Average	9/10/07		1.38	16.8	3.07	11.3	5.8	4.4	0.04
'06 Average	12/06		1.64	15.5	3.02	14.2	5.0	7.4	0.10

### *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	9/8/2008	9-LE-CS-Not Thinned	1.35	15.0	2.90	16.6	7.1	8.0	0.6
Lake Erie	9/8/2008	9B-LE-Late Clus Thin	1.39	15.3	2.90	15.7	7.0	7.2	0.7
Long Island	Delayed	spoiled							
<i>Average</i>			<i>1.37</i>	<i>15.2</i>	<i>2.90</i>	<i>16.2</i>	<i>7.1</i>	<i>7.6</i>	<i>0.6</i>
Prev Samp. Ave	8/27/08		1.04	13.2	2.75	24.6	8.7	12.5	0.1
07 Average	9/10/07		1.26	18.6	3.03	14.1	6.8	6.1	*

### *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
Finger Lakes	9/8/2008	FL-21 Chard	1.50	17.5	3.05	11.8	4.9	5.5	0.3
Hudson Valley	9/8/2008	12-HV-C-4	1.42	20.7	3.06	10.5	4.9	3.7	0.6
Long Island	Delayed	spoiled							
<i>Average</i>	<i>9/8/08</i>		<i>1.46</i>	<i>19.1</i>	<i>3.06</i>	<i>11.2</i>	<i>4.9</i>	<i>4.6</i>	<i>0.5</i>
Prev Sample Ave	8/27/08		1.18	15.1	2.86	17.3	6.3	8.6	0.1
'07 Average	9/10/2007		1.59	19.8	3.18	10.7	5.0	4.9	*

### *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
Finger Lakes	9/8/2008	FL-12 Lem	1.90	18.7	2.88	11.7	6.3	3.8	0.2
Finger Lakes	9/8/2008	FL-13 Lem	1.70	16.0	3.09	11.5	6.4	4.8	0.8
<i>Average</i>	<i>9/8/2008</i>		<i>1.80</i>	<i>17.4</i>	<i>2.99</i>	<i>11.6</i>	<i>6.4</i>	<i>4.3</i>	<i>0.5</i>
Prev Sample Ave	8/25/08		1.40	14.4	2.77	17.7	8.2	7.4	0.3
'07 Average	9/10/07		<b>1.67</b>	<b>18.2</b>	<b>2.95</b>	<b>11.1</b>	<b>6.4</b>	<b>3.2</b>	*
'06 Average	9/12/06		1.60	14.7	2.9	17.2	7.4	7.7	*

### *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	Delayed	spoiled							
Long Island	Delayed	spoiled							
Prev. Sample Ave	8/25/08		1.49	15.1	2.93	14.4	6.3	6.5	0.1
'07 Average	9/10/07		1.68	19.3	3.27	9.5	4.9	4.0	*

*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
Hudson Valley	9/8/2008	15-HV-PN-4	1.21	19.5	3.21	8.5	5.3	2.0	0.7
Hudson Valley	9/8/2008	16-HV-PN-5	1.31	18.0	3.08	11.7	5.3	5.0	0.6
<i>average</i>			<i>1.26</i>	<i>18.8</i>	<i>3.15</i>	<i>10.1</i>	<i>5.3</i>	<i>3.5</i>	<i>0.7</i>
Prev Sample	8/25/08		1.38	15.5	2.88	16.8	6.6	8.0	0.2

*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	9/8/2008	FL-14 Ries-90	1.50	16.2	2.78	16.1	7.3	6.9	0.0
Finger Lakes	9/8/2008	FL-15 Ries-90	1.50	14.7	2.75	17.9	7.6	8.0	0.0
Finger Lakes	9/8/2008	FL-16	1.30	16.2	3.07	12.7	6.4	5.5	0.6
Finger Lakes	9/8/2008	FL-17 Ries-239	1.30	15.4	2.81	15.2	7.3	6.1	0.0
Finger Lakes	9/8/2008	FL-18 Ries-239	1.50	14.9	2.78	16.8	7.4	7.3	0.2
Lake Erie	9/8/2008	10-LE- -Leaf Pulled	1.87	14.4	2.83	14.6	7.2	6.1	0.8
Lake Erie	9/8/2008	11-LE- No leaf pull	1.68	13.5	2.76	17.1	7.5	7.6	0.3
<i>average</i>			<i>1.52</i>	<i>15.0</i>	<i>2.83</i>	<i>15.8</i>	<i>7.2</i>	<i>6.8</i>	<i>0.3</i>
Prev Sample	8/25/08		1.18	11.1	2.61	25.5	9.1	12.4	0.0
'07 Average	9/10/07		1.37	16.7	2.93	13.1	7.0	4.7	*
'06 Average	9/12/06		1.60	15.0	2.86	18.8	7.5	8.8	*

*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
Long Island	Delayed	Spoiled							
Prev. Sample	8/25/08	4-LI-SB	1.57	14.9	2.69	22.8	7.8	11.3	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
Finger Lakes	9/8/2008	FL-7 Foch	0.90	22.5	3.18	12.8	5.5	6.5	0.1
Finger Lakes	9/8/2008	FL-8 Foch	0.90	22.7	3.16	12.4	5.4	5.8	0.2
<i>Average</i>	<i>9/8/2008</i>		<i>0.90</i>	<i>22.6</i>	<i>3.17</i>	<i>12.6</i>	<i>5.5</i>	<i>6.2</i>	<i>0.2</i>
Prev. Sample	8/25/2008		0.90	19.0	2.98	17.1	6.4	8.3	0.0
'07 Average			0.99	22.8	3.27	10.9	5.2	4.3	*

*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	9/8/2008	FL-1 Leaf Rem/Shoot th	1.60	15.6	2.90	17.6	7.1	8.8	0.2
Finger Lakes	9/8/2008	FL-2 No LR/no Sh Th	1.60	14.5	2.85	19.0	7.4	9.6	0.2
Hudson Valley	9/8/2008	14-HV-N-4	1.77	18.8	2.89	11.1	5.5	3.4	0.2
Lake Erie	9/8/2008	5-LE-N-8-1-2	1.62	14.6	2.81	15.9	6.9	7.0	0.1
Lake Erie	9/8/2008	6-LE-N-3-1-2	1.58	16.8	2.96	14.5	6.9	6.2	0.4
<i>average</i>			<i>1.63</i>	<i>16.1</i>	<i>2.88</i>	<i>15.6</i>	<i>6.8</i>	<i>7.0</i>	<i>0.2</i>
Prev Sample	8/25/2008		1.42	13.2	2.70	22.3	8.3	10.8	0.0
'07 Average	9/10/2007		1.64	17.5	3.08	11.5	5.9	4.7	*

*Cayuga White*

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	9/8/08	3-HV-CW-Not thinned	3.28	19.4	3.17	9.5	5.0	3.2	0.0
Hudson Valley	9/8/08	4-HV-CW-Cluster-thinned	3.16	19.6	3.13	9.4	4.8	3.0	0.0
<i>Average</i>			<i>3.22</i>	<i>19.5</i>	<i>3.15</i>	<i>9.5</i>	<i>4.9</i>	<i>3.1</i>	<i>0.0</i>
Prev Sample	8/25/08		3.13	17.0	2.99	13.5	6.1	6.1	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	9/8/2008	FL-22 Unthinned	1.30	12.5	2.98	13.1	6.3	5.7	0.0
Finger Lakes	9/8/2008	FL-23 Shoot thinned/LR	1.90	13.3	3.04	12.5	5.7	5.6	0.1
<i>average</i>			<i>1.60</i>	<i>12.9</i>	<i>3.01</i>	<i>12.8</i>	<i>6.0</i>	<i>5.7</i>	<i>0.1</i>

*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
Hudson Valley	9/8/2008	9-HV-D-Not thinned	2.67	16.2	2.78	18.6	7.4	8.3	0.0
Hudson Valley	9/8/2008	10-HV-D-Cluster Thinned	2.75	16.8	2.75	18.6	7.3	8.3	0.0
Average	9/8/2008		2.71	16.5	2.77	18.6	7.4	8.3	0.0
Prev. Sample	8/25/08		2.07	12.1	2.58	31.4	10.6	15.8	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
Finger Lakes	Harvested								
Finger Lakes	Harvested								
Finger Lakes	Harvested								
Finger Lakes	Harvested								
Hudson Valley	9/8/2008	5-HV-No Thin	2.13	19.4	2.98	10.5	4.8	3.6	0.0
Hudson Valley	9/8/2008	6-HV-SB-Clust Thin	2.07	20.1	3.00	10.3	4.6	3.6	0.1
Hudson Valley	9/8/2008	7-HV-SB-No Thin	2.05	20.6	3.01	11.8	4.6	4.9	0.0
Hudson Valley	9/8/2008	8-HV-SB-Clust Thin	2.07	21.3	3.03	10.3	4.4	3.4	0.0
Average	9/8/2008		2.08	20.4	3.01	10.7	4.6	3.9	0.0
Prev. Sample	8/25/2008		1.69	17.2	2.88	16.0	5.7	7.8	0.0

*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	9/8/2008	13-HV-T-4	1.65	19.0	2.85	11.4	5.6	3.4	0.1
Lake Erie	9/8/2008	3-LE-Clust Thin	1.90	14.9	2.72	16.8	7.0	7.1	0.0
Lake Erie	9/8/2008	4-LE- Not thinned	1.94	14.1	2.70	17.0	6.9	7.3	0.0
Lake Erie	9/8/2008	7-LE-T-Clust Thin	1.91	15.5	2.79	15.7	7.2	6.5	0.0
Lake Erie	9/8/2008	8-LE-T-Not Thinned	1.63	14.1	2.75	15.9	7.1	6.4	0.0
Average			1.81	15.5	2.76	15.4	6.8	6.1	0.0
Prev Sample	8/25/08		1.53	10.8	2.56	29.1	9.4	14.7	0.0
'07 Average	9/10/07		1.67	17.6	2.90	12.1	5.9	4.3	*

*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	9/8/2008	1-HV-Not thinned	2.00	15.5	3.01	13.3	6.3	5.7	0.6
Hudson Valley	9/8/2008	2-HV-Cluster thinned	1.88	18.0	3.01	13.5	6.1	5.9	0.5
Average	9/8/2008		1.94	16.8	3.01	13.4	6.2	5.8	0.6
Prev Sample	8/25/08		1.61	13.2	2.80	24.2	9.1	12.5	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	9/8/2008	FL-19 Concord	3.10	12.9	2.97	13.2	5.8	6.2	0.0
Finger Lakes	9/8/2008	FL-20 Concord	3.10	12.8	2.95	13.5	5.7	6.2	0.0
Average			3.10	12.9	2.96	13.4	5.8	6.2	0.0
Prev Sample	8/25/2008		1.30	9.2	2.64	26.2	9.3	13.0	0.0

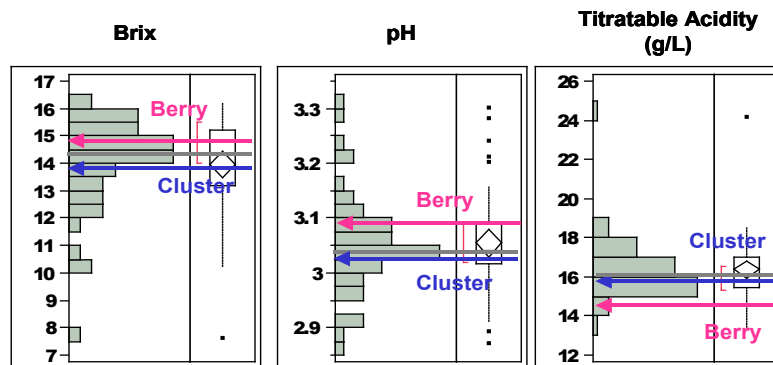
*Diamond*

Location	Harvest Date	Samples	Av Berry Wt	% Brix	pH	g/L TA	g/L Tartaric Acid	g/L Malic Acid	g/L Lactic Acid
Lake Erie	9/8/2008	1-LE-Shoot-thinned	>2.00	16.4	2.88	10.7	5.3	3.3	0.0
Lake Erie	9/8/2008	2-LE Not thinned	>2.00	16.4	2.89	12.6	6.3	4.3	0.3
average	9/8/2008		>2.00	16.4	2.89	11.7	5.8	3.8	0.2
Prev. Sample	8/25/2008		2.08	13.1	2.62	18.3	7.5	7.4	0.0

# SAMPLING VARIABILITY: AN ILLUSTRATION

Tim Martinson & Chris Gerling

Winemakers and growers pay attention to brix, pH, and titratable acidity as indicators of ripeness. If it is done right, you will get a set of numbers that represent the *average* of what's out there in the vineyard. What you won't get is any idea about the *range of variability* that your sample represents.



Brix, pH, and titratable acidity in 50 individually-measured clusters (10 per vine) in a well-managed Riesling vineyard near Geneva, NY, Sampled Wednesday, September 10. Two additional samples were collected: 1) 200 berries, randomly sampled from the same 30 post-length area in vineyard; 2) 50 clusters, sampled from the same 30 post-length area in the vineyard.

Which is why we went out this week and sampled 10 'Riesling' clusters from each of 5 vines in the vineyard, and individually measured brix, pH and TA on each one of the 50 clusters. This gave us 50 different measurements of how the 5 vines, and the 10 clusters (5 'shaded' and 5 'exposed' to the sun) within each of these vines varied.

We also collected two other samples from the same range of plants (covering 30 post lengths in the vineyard): 1) a 200-berry sample (random one, I hope) and a 2) 50 cluster sample. This was meant to mimic how winemakers collect samples. Some do 'berry samples', others seem to prefer 'whole cluster' samples.

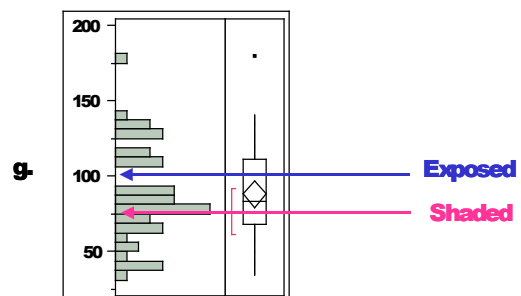
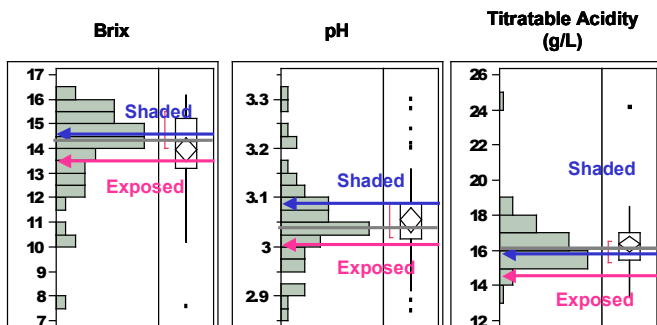
**Results.** Sugar readings ranged from 10 - 16.5° brix; pH varied from about 2.85 to 3.3, and titratable acidity ranged between 13 and 19 g/liter in our individual clusters. Clearly these grapes need a little more hang time. The independent berry and cluster samples, however, gave somewhat different results. Berry samples tested riper than the average of the individual clusters - Brix and pH were higher and TA lower than the average (indicated by the grey bar). The cluster sample (produced a lot of juice!) came out closer, but slightly below the average of the individual cluster samples.

We also compared the 25 'shaded' vs 25 'exposed' clusters (Figures below). 'Shaded' clusters had higher average brix and pH - but also higher titratable acidity. Interesting - as cluster exposure should result in *riper* fruit, and this apparently went the other way. A possible explanation: Cluster weight of 'shaded' clusters was 25 g (about 1/4) lower than 'exposed' clusters, which may account for the lower brix in the larger, 'exposed' clusters. Notably, TA was also *lower* in the 'exposed' fruit - possibly a result of the sunlight exposure.

**Take Home:** Sample numbers represent an *average* of the variable fruit you collect. It's important to collect from more than just a few clusters or vines to capture the variability that is out there (one berry squished on to a refractometer is not going to represent much), and important to be consistent. There are many ways to bias a fruit sample. See Chris Gerling's article in *Veraison to Harvest #1* (last week's article) for more information.

## Shaded versus Exposed Clusters

## Cluster Weight - Shaded vs Exposed



*Continued from Page 3*

that can significantly alter what a wine will taste like. Depending on the variety and the capabilities of the winery, missing the target window can be a small to huge problem. Knowing the difference can help to make things easier to manage.

*Wineries:* As you know, most growers have multiple buyers for their fruit, and often more than one winery purchases the same variety from them. If you really want them to hang a particular variety longer, it might wreak havoc with their schedule to pick other varieties for other wineries, or result in possible disease development because of fall rains. Make sure to talk through potential conflicts that the grower might have in these kinds of situations.

**Taste the wines.** If your product (grapes) is becoming another product (wine), it only makes sense to know as much as you can about it. In an ideal situation, wineries would be able to keep each grower's lot separate in the cellar for a time before blending them together. The winemaker and grower would then be able to taste the wines as they develop, and discuss what they like and what might be improved upon. While most wineries don't have the ability to do this, having individual conversations after harvest with each of the winemakers you sell to can provide some valuable information. You'll have a better idea of what the winemaker is talking about and what aspects of the fruit are carrying through into the wine.

Take pride in the product that is made from your fruit, and be invested in what happens to it. A grower has just as much right to know what the winemaker is doing in the cellar with their grapes as the winemaker has to know what the grower does in the vineyard to produce them.

**Little things.** You may not necessarily have the season riding on these things, but the winemakers will be grateful. For example, wineries love bins that look like they will hold together through the unloading process. They also like bins that look like they've been cleaned this year. And, while some MOG (material other than grapes) is inevitable, staples and big rocks are going to make for trouble when they reach pumps and press bladders.



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The conversations that we had with grape growers and winemakers reinforced that these 'non-technical' factors can be just as important to the success of any given growing season and vintage as much as Brix, pH, acidity, color, tannins and all of the other factors that we usually talk about regarding grape and wine quality. In a sense, these topics could even be thought of as the next step in preserving quality in the vineyard and winery. Why go to all of the trouble just to lose what you've achieved at the last minute? As we develop this 'Grape Growing for Winemakers and Winemaking for Grape Growers' extension project, we will be incorporating many different topics that touch on fruit and wine quality, communication, logistics, business relations, and others all in an effort to make sure that this industry moves forward together. If you ever have suggestions or ideas for this project, please feel free to pass them to either of us (Chris Gerling – [cjg9@cornell.edu](mailto:cjg9@cornell.edu); Hans Walter-Peterson – [hcw5@cornell.edu](mailto:hcw5@cornell.edu)).

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