

VERAISON TO HARVEST

Statewide Vineyard Crop Development Update #5

October 5, 2007



Cornell University
Cooperative Extension

Around New York...

STATEWIDE - *TIM MARTINSON*

Unusually warm weather for October (continuing in the 80s through Sunday) is continuing to favor berry development. This week's juice composition numbers (see p 5-7) saw sugar accumulation slow somewhat and titratable acidity (TA) continue to drop by 0.4 to 1 g/L with not excessively high pH values. In Cabernet Franc and Riesling, TA levels are a couple of g/l lower than last year at this time. Samples were not taken on Long Island this week, due to Chardonnay harvest at the lab. They will resume next week.

Major processors seem to be 30% (juice processors) to 75% (Centerra) through their Concord harvest.

-TEM

FINGER LAKES-*HANS WALTER PETERSON*

Warm temperatures and sunshine, with a moderate shot of rain at the end of last week, continue to make 2007 a year to remember so far. Disease pressure overall still remains very low, with only small instances of *botrytis* infection generally found in vineyards. Powdery and downy mildew infections on foliage of susceptible varieties are a bit easier to find this week, but not to the level that growers are overly concerned about at this point.

Most of the Pinot Gris and Chardonnay in the region has been brought in by now (but not quite all), while Pinot Noir was still picked this week, and might go early into next week as well. Growers have also started to harvest some of the typically mid-season ripening varieties this week, such as Traminette, Noiret, Gewürztraminer and Riesling. Pressed Riesling juice that I tasted from a couple of vineyards seemed very flavorful and nicely balanced. While a couple of growers have started to harvest some later season red varieties, most are planning to let them continue to hang for at least another week, if not longer.

LONG ISLAND - *ALICE WISE*



Harvest is a busy time at the Vinification and Brewing Laboratory at Geneva, where Research Support Specialists Luann Preston-Wilsey and Pam Reyes (Shown in photo) make over 500 small lots of wine annually for several research projects and at least six Faculty research and extension programs.

Chardonnay harvest was in full swing on Long Island this past week including at the Cornell vineyard in Riverhead. We have 10 clones of Chardonnay, many replicated on 3309, 101-14 and as own rooted vines. Harvesting the research vineyard is an intensive process. For each vine, we count the numbers of clusters per vine and weigh each lug to obtain an average crop weight and cluster weight per clone/rootstock combination. For each panel (4 vines), 100 berries are sampled for berry weights. We count berries on 10 clusters to get an average berry number per cluster. Brix, TA, pH are done for all clone/rootstock combinations. Example of results: Chard. 5/3309 averaged 18 clusters and 8 lbs. per vine (large clusters this year). Brix 23.3, TA 8.5 g/l, pH 3.13. Chard. 5 is a large clustered, high acid clone, probably the latest ripening Chardonnay we grow. Commercial growers are very happy with white variety fruit quality. With sunny, warm, weather and little bird pressure, there is great optimism about white wine quality.

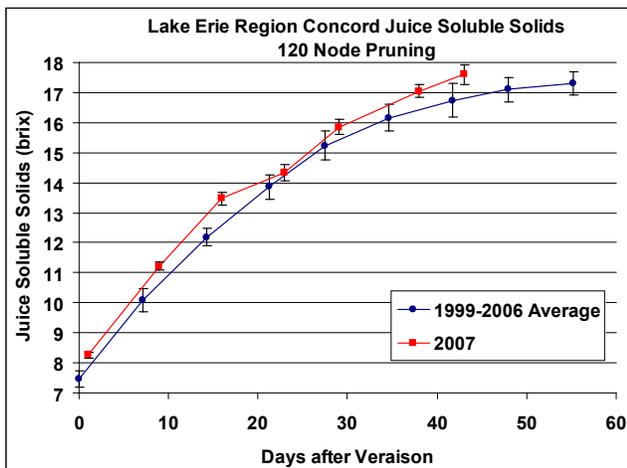
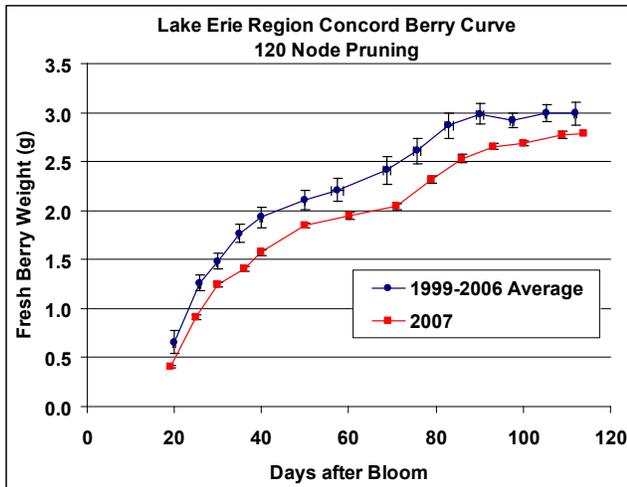
LAKE ERIE AND NIAGARA ESCARPMENT- *TIM WEIGLE*

The 2007 harvest is shaping up to be one for the books in the Lake Erie and Niagara Escarpment regions with a few exceptions. Reports from both regions indicate that wine grapes are being picked at their peak, with growers and winemakers being able to use all the flavor

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CONCORD RIPENING PROFILE AT FREDONIA -
 OCTOBER 2 (FINAL SAMPLE)
 Terry Bates, Cornell Vineyard Laboratory

The final Concord berry weight and juice soluble solids were taken from the crop adjustment experiment at the Cornell Vineyard Laboratory in Portland, NY on 10/2/2007. Final berry weight settled in at 2.78 g, approximately 8-10% below the eight year average. With the above average weather conditions for late September, the juice soluble solids continued to increase at above average rates. Final juice soluble solids for these count vines averaged 17.6° brix.



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components of ripeness to determine the harvest date rather than just relying on Brix. Concord harvest is progressing with most vineyards easily making the sugar standards of the major processors in the area. There are vineyards which have suffered from the lack of rainfall this year as canopies have shut down with the grapes stuck in the low to mid 14 Brix range even after the recent rainfall we have experienced in both regions. With most of these vineyards there are more factors involved than just lack of water this season with past frost, freezes, wet years and lapses in weed management also playing a role. Another impact of the lack of moisture can be seen in the early shelling being found in area Concord vineyards. Warm temperatures and sunshine forecast for the next week will certainly help sugar accumulation for those vineyards with active canopies and will continue to provide excellent harvest conditions in contrast to the mud bowl we experienced in 2006.

**HUDSON VALLEY - STEVE MCKAY, STEVE HOYING
AND JOHN HUDELSON**

, The HV continues to have warm, dry days and cool evenings through the first week of October. Morning dew and a few showers have caused some *botrytis* in tight clustered varieties to the degree that some growers with Riesling have chosen to pick early. Overall the Brix levels have been high, but not as high as '05 levels were for this same time of year. Brotherhood Winery is happy with the commercial harvests of Chardonnay they have had this year both for sparkling and still grapes. They are looking to plant more grapes near their current site for 2008. Soluble solids in many of the white and red hybrid varieties seem to be leveling off and growers should watch that the pH does not rise to levels difficult to work with (greater than 3.7)

SAMPLING FOCUS: NOIRET AND CANOPY
MANAGEMENT FOR HYBRIDS EXPERIMENT
Timothy E. Martinson

Most growers and winemakers have at least a basic understanding of canopy management techniques (vertical shoot positioning, shoot thinning, leaf removal in the cluster zone, and summer hedging) used with *Vitis vinifera* cultivars to deploy the grapevine canopy to maximize sunlight interception while allowing the cluster zone partial or full exposure to sunlight. Enhancing fruit exposure



improves fruit and wine quality, increasing fruity and floral characteristics, decreasing herbaceousness (green, unripe flavors), and improving color and tannin intensity. Moreover, avoiding shading in the shoot renewal zone increases bud fruitfulness.

These canopy management techniques are not widely used with hybrids, for

a variety of reasons. One reason is that, while *V. vinifera* varieties have an erect growth habit, many hybrids have a procumbent (or downward) growth habit, like Concords do, that makes shoots hard to position vertically. This increases costs and frequency of wire-moving and shoot-tipping operations needed to produce VSP-type canopies. Another, probably more important reason is that these labor-intensive practices are too expensive to use routinely in hybrid vineyards, where the goal is to produce a moderate-priced, salable wine (or \$400 to \$800/ton grapes to sell to the wineries making these wines).

Are there appropriate and economically-feasible ways of improving quality of hybrid fruit through canopy and crop management? **Dr. Justine Vanden Heuvel**, Cornell's new Assistant Professor of Viticulture thinks so. Together with enologist and wine chemist **Dr. Gavin Sacks**, Justine has started a new project this year with to characterize 'hybrid aromas' that

make up the flavor components of hybrids, and understand how canopy management might influence these flavors and wine quality.

The project, entitled **Improving the Quality of Hybrid Grapes and Wine** (one of 12 projects funded by the *NY Wine and Grape Foundation's Total Quality Focus* or *TQF program*), aims to compare effects of cluster sunlight exposure on standard fruit quality measures and flavor components of red varieties Marechal Foch, Noiret, and Corot Noir. The latter two are new red cultivars from Cornell's grape breeding program that were released in 2006. Both are a notable departure from traditional red hybrids, in that they produce tannic, full bodied red wines. Foch is an older 'Kuhlman' hybrid, known to produce what is known as characteristic 'red hybrid' flavor, and is made into lighter-style, non-tannic red wines.

So the two questions Gavin and Justine are addressing are: 1.) What are the chemical aroma and flavor compounds that produce this flavor known as 'red hybrid'? and 2.) What can we do in the vineyard to improve and enhance favorable flavors to improve wine quality of these and other hybrids?

The "Noiret" Experiment. One venue where these questions is being addressed is at Jim Bedient's Noiret vineyard near Branchport, NY, on the West side of Keuka Lake. The Noiret planting is approximately 5 years old, and the vines are trained to a VSP system, with mid-wire canes and catch wires. There, Ben Riccardi, summer Shaulis Scholar and senior in Cornell's undergraduate viticulture program, established four different treatments in this five year-old vineyard under Dr. Vanden Heuvel's directions. The treatments were:



Student Ben Riccardi and Dr. Justine Vanden Heuvel

1. No shoot thinning, no leaf removal
2. Shoot thinning, no leaf removal
3. No shoot thinning, leaf removal
4. Shoot thinning and leaf removal

Ben measured canopy density at various times in the season and made adjustments to treatments as necessary. We harvested the fruit last Tuesday (see photos). Ben and several fellow Enology students at

Cornell will make wine out of the four treatments for an independent study project, under the direction of Cornell Lecturer **Kathleen Arnink**.

Observations about Noiret. I was out harvesting with the crew last Tuesday. What I saw (in the 'normal' portions) was vigorous vines, trained to VSP, but with a trailing growth habit. Shoot vigor was such that many of the shoots that had been positioned grew back downward, reaching halfway or more to the ground. In a few panels of the vineyard, shoots had slipped out of the catchwires, and had grown straight down from the fruiting wire. Clusters in those panels appeared to be much more exposed than in some of the VSP panels. Noiret's large leaves, some almost the shape and size of 'Catawba' leaves, do tend to promote shading as well. Clusters were large (1/2 lb or more), and it was rare to see over 30 on a vine. Some of this was a 'treatment effect' (i.e. could be a result of shoot thinning), but it seemed that there were often 1 to 2 clusters on a shoot, rarely more than 2. This indicates to me that previous shading may have reduced bud fruitfulness.

Bruce Reisch, the breeder who developed and released the variety, told me that this variety has large clusters, but is not prone to overcropping like some other large-clustered varieties such as Seyval blanc and Chambourcin.

My opinion: This is a variety that wants to droop, and thus seems more suitable to high training than to low-wire training systems such as VSP. I feel that shoot positioning might have lowered bud fruitfulness - it looked to me like many potential renewal canes were heavily shaded this year. This variety would seem to me to be a candidate for standard 'umbrella'-type or high cordon training. The latter system, with some additional shoot thinning and positioning, could be the best bet for maximizing fruit exposure. When the data is worked up, it will be interesting to see just how much the treatments reduced shading this year. Stay tuned!

Samples from the two extreme treatments (Shoot thinning/Leaf Removal and no thinning/removal) have been part of our *Harvest Maturity Report* (see p5-7). The day before harvest, the leaf removal/shoot thinning berry sample had 0.5° higher brix and 0.2 g/l lower titratable acidity than the non-thinned, no leaf-removal treatment.

NOIRET HARVEST

Parts of Noiret canopy were very dense with little cluster exposure.



Other parts were less dense and showed moderate fruit exposure

Shoots have strong downward growth tendency



Individual vines harvested into plastic grocery bags. Clusters are counted while harvested.

Clusters from individual vines are weighed in the field with a handheld electronic scale. Weight and cluster number are recorded.



FRUIT MATURATION REPORT

Samples reported were collected on **Monday, October 1**. The next samples will be collected on **Monday, Oct 8**. No samples were collected from Long Island this week, due to Chardonnay harvest. Where appropriate, sample data from 2006, averaged over all sites (mostly Finger Lakes), is included. Fruit maturation data from 2006 is posted at: September 25: <http://www.nysaes.cornell.edu/fst/faculty/henick/pdf/Ripening%20Progress%2006R5.pdf>, October 2

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	10/01/07	FL-10-CF	Seneca Lake W	1.53	20.6	3.14	8.6	4.4	2.8	0.16
Finger Lakes	10/01/07	FL-11-CF	Seneca Lake W	1.32	19.6	3.16	8.5	5.2	2.1	0.17
Finger Lakes	10/01/07	FL-12-CF	Seneca Lake W	1.25	20.3	3.34	7.7	4.6	2.6	0.10
Finger Lakes	10/01/07	FL-7-CF	Cayuga Lake W	1.60	20.3	3.23	8.9	4.8	3.3	0.12
Finger Lakes	10/01/07	FL-8-CF	Seneca Lake E	1.50	19.3	3.23	8.6	4.6	3.0	0.09
Finger Lakes	10/01/07	FL-9-CF	Seneca Lake W	1.63	19.5	3.15	8.3	5.1	2.2	0.12
Hudson Valley	10/01/07	HV-CF-2	E of Hudson River	1.80	20.0	3.21	9.2	4.8	3.5	0.14
Hudson Valley	10/01/07	HV-CF-3	W of Hudson River	1.15	21.3	3.25	8.3	4.5	2.9	0.14
Lake Erie	10/01/07	LE-CF-9	Fredonia Vin Lab	na	22.0	3.25	8.0	4.5	2.4	0.15
Long Island	no sample	LI-CF-4	Aquebogue LI							
Long Island	no sample	LI-CF-7	Aquebogue LI							
Average	10/01/07			1.47	20.3	3.22	8.5	4.7	2.8	0.13
9/24 Average	09/24/07			1.49	19.4	3.21	9.2	5.0	3.3	0.11
9/17 Average	09/17/07			1.48	17.7	3.10	10.1	5.1	3.8	0.08
9/10 Average	9/10/07			1.38	16.8	3.07	11.3	5.8	4.4	0.04
'06 Average	10/2/06	FL	Finger Lakes	1.62	18.6	3.16	11.1	4.3	5.4	0.16

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	10/01/07	HV-C-2	E of Hudson River	1.46	21.6	3.20	9.5	4.9	4.1	0.11
Hudson Valley	Harvested	HV-C-3	W of Hudson River							
Long Island	Harvested	LI-CH-9	LIHRC Riverhead							
No average this week										
Average	09/24/07			1.59	21.3	3.25	9.8	4.6	4.2	0.12
9/17 Average	9/17/07			1.56	20.3	3.18	10.5	5.0	4.8	0.10
9/10 Average	09/10/07			1.59	19.8	3.18	10.7	5.0	4.9	0.08

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	10/01/07	FL-13-Lem	Seneca Lake W	1.97	20.6	3.09	10.0	5.7	3.2	0.1
Finger Lakes	10/01/07	FL-14-Lem	Seneca Lake W	1.68	22.1	3.03	9.2	5.8	1.8	0.3
Average	10/01/07			1.83	21.4	3.06	9.6	5.8	2.5	0.18
9/24 Average	9/24/07			1.72	20.5	3.03	10.2	6.1	2.8	0.19
9/17 Average	9/17/07			1.80	19.2	2.94	10.6	6.1	3.1	0.12
9/10 Average	09/10/07			1.67	18.2	2.95	11.1	6.4	3.2	0.13
06 Average	10/01/07			2.30	19.0	3.14	10.1	4.5	3.8	0.19

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	10/01/07	FL-1-R239	Cayuga Lake W	1.14	17.8	3.01	9.8	6.2	2.4	0.08
Finger Lakes	10/01/07	FL-2-R-90	Cayuga Lake W	1.33	19.1	3.05	9.4	5.7	2.4	0.10
Finger Lakes	10/01/07	FL-3-R-90	Seneca Lake E	1.43	18.6	2.99	10.2	6.0	2.9	0.09
Finger Lakes	10/01/07	FL-4-R-239	Seneca Lake E	1.33	19.7	3.04	10.3	5.7	3.3	0.08
Finger Lakes	10/01/07	FL-5-R-239	Seneca Lake E	1.31	19.2	3.02	10.0	5.7	2.8	0.08
Finger Lakes	10/01/07	FL-6-R-90	Seneca Lake E	1.38	18.5	2.95	10.3	6.1	2.9	0.03
Hudson Valley	harvested	HV-R-4	E of Hudson R							
Lake Erie	10/01/07	High pH	Fredonia Vin Lab		18.6	2.93	10.9	6.7	2.9	0.10
Lake Erie	10/01/07	Low pH	Fredonia Vin Lab		18.9	2.93	11.2	6.6	2.9	0.19
Long Island	no sample	LI-R-3	Aquebogue LI							
Long Island	no sample	LI-R-6	Aquebogue LI							
Average	10/01/07			1.32	18.8	2.99	10.3	6.1	2.8	0.09
9/24 Average	09/24/07			1.42	18.6	3.00	11.3	6.4	3.4	0.07
9/17 Average	09/17/07			1.36	17.5	2.94	12.3	6.6	4.2	0.03
9/10 Average	9/10/07			1.37	16.7	2.93	13.1	7.0	4.7	0.02
8/27 Average	8/27/07			1.14	12.4	2.73	23.4	9.3	11.0	0.07
06 Average	10/02/06		Finger Lakes	1.71	17.2	2.93	12.7	4.9	6.0	0.18

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
Hudson Valley	10/01/07	HV-M-4	E of Hudson River	1.65	21.0	3.35	8.9	5.0	3.7	0.1
Long Island	no sample	LI-M-1	Cutchogue LI							
Long Island	no sample	LI-M-2	Cutchogue LI							
Long Island	no sample	LI-M-5	Aquebogue LI							
Long Island	no sample	LI-M-8	LIHRC Riverhead							
No average this week										
9/24 Average	09/24/07			1.74	20.9	3.37	8.4	4.6	3.2	0.17
9/17 Average	09/17/07			1.71	20.0	3.33	8.6	4.7	3.6	0.12
9/10 Average	09/10/07			1.68	19.3	3.27	9.5	4.9	4.0	0.10
8/27 Average	8/27/07			1.55	14.2	2.89	16.3	6.7	7.6	0.06

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	10/01/07	High pH	Fredonia Vin Lab		20.4	3.11	11.7	6.0	4.8	0.09
Lake Erie	10/01/07	Low pH	Fredonia Vin Lab		20.6	3.12	11.3	6.0	4.5	0.10
Average	10/01/07			no data	20.5	3.12	11.5	6.0	4.7	0.10
9/24 Average	09/24/07			no data	20.5	3.1	12.1	5.9	4.5	0.14
9/17 Average	09/17/07			1.28	19.4	3.04	13.4	6.5	6.0	0.02
9/10 Average	09/10/07			1.26	18.6	3.03	14.1	6.8	6.1	0.02
8/27 Average	08/27/07			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	10/01/07	Leaf Rem, Sh T	Keuka Lake W	1.95	18.5	3.22	10.2	5.6	4.2	0.02
Finger Lakes	10/01/07	No leaf Rem	Keuka Lake W	1.87	18.0	3.26	10.4	5.6	4.6	0.00
Hudson Valley	10/01/07	HV-N-3	W of Hudson River	1.63	20.1	3.19	8.1	4.5	2.4	0.06
Lake Erie	harvested	High pH	Fredonia Vin Lab							
Lake Erie	harvested	Low pH	Fredonia Vin Lab							
Average	10/01/07			1.82	18.9	3.22	9.6	5.2	3.7	0.03
9/24 Average	09/24/07			1.81	18.5	3.14	10.1	5.3	3.6	0.06
9/17 Average	9/17/07			1.62	18.0	3.06	11.0	5.7	4.3	0.03
9/10 Average	09/10/07			1.64	17.5	3.08	11.5	5.9	4.7	0.02
8/27 Average	08/27/07			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	10/01/07	Shaded	Keuka Lake W	1.85	20.9	3.01	11.1	5.5	4.0	0.19
Finger Lakes	10/01/07	Exposed	Keuka Lake W	1.83	21.5	2.96	10.2	5.5	2.8	0.19
Hudson Valley	10/01/07	HV-T-1	W of Hudson River	1.35	23.6	3.09	8.5	4.5	2.4	0.27
Lake Erie	Harvested	High pH	Fredonia Vin Lab							
Lake Erie	Harvested	Low pH	Fredonia Vin Lab							
Average	10/01/07			1.68	22.0	3.02	9.9	5.2	3.1	0.22
Average	09/24/07			1.64	21.0	2.98	9.9	5.1	2.6	0.20
9/17 Average	9/17/07			1.55	18.8	2.90	11.4	5.6	3.9	0.12
9/10 Average	09/10/07			1.67	17.6	2.90	12.1	6.0	4.3	0.11
8/27 Average	08/27/07			1.34	11.5	2.67	23.8	8.9	11.2	0.15

Marechal 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
Harvested following 9/17 Sample Date.										
Average	9/17/07			0.98	23.3	3.25	10.8	5.1	4.3	0.09
9/10 Ave	09/10/07			0.99	22.8	3.27	10.9	5.2	4.3	0.11
8/27 Ave				0.94	18.2	3.04	14.0	5.8	6.3	0.09

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

Kelly Link, Paula Joy, and Madonna Struzynski, Lake Erie Vineyard Laboratory

VARIETY BULLETINS FOR 'NOIRET™', 'COROT NOIR™' AND VALVIN MUSCAT™ AVAILABLE ONLINE

Timothy E. Martinson



For detailed information about the new Geneva varieties, check out the release bulletins posted online.

The 'Noiret™' bulletin includes detailed descriptions of viticulture, a pedigree showing the variety's ancestry, and suggested winemaking procedures, based on several

years of winemaking trials at Geneva.

What's different about the two new red varieties Noiret and Corot Noir? These bulletins will tell you. To quote from the Noiret bulletin:

"The distinctive red wine is richly colored and has notes of green and black pepper along with raspberry, blackberry, and some mint aromas. A major distinguishing characteristic of this selection is the fine tannic structure that is complete from front of the mouth to the back. The tannin structure and absence of any hybrid aromas strongly distinguish this selection from other red hybrid grapes"

In other words, this is not like Baco Noir or Marechal Foch. It produces different flavors. Another distinguishing feature is that fruit chemistry is better for winemaking. Problems with high acidity and high pH, common with Baco, for example, are rare.

"The acidity usually balances itself very easily after malolactic fermentation. Adjustment of acidity has only occasionally been necessary...Must sugar content required small additions of sugar to achieve 20 or 22 brix"

In short, Noiret (and Corot Noir) provide winemakers with the ability to make tannic, full-bodied red wines from hybrids that are somewhat more cold-hardy and



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Long Island Grape Program

Finger Lakes Grape Program

Lake Erie Regional Grape Program

Hudson Valley Regional Fruit Program

disease-resistant (*Noiret* is not very susceptible to *Botrytis* and other late-season rots) than *V. vinifera* cultivars.

These reds and the new muscat-type **Valvin Muscat** are definitely varieties that those in hybrid-growing areas that may be too cool or have a shorter growing season may want to check out, before planting older, more established red hybrids. Noiret and Corot Noir, for example, strike me as a particularly good fit for the Hudson Valley.

Bulletins are posted at:

Noiret™:

<http://www.nysaes.cornell.edu/hort/faculty/reisch/bulletin/Noiret.pdf>

Corot Noir™:

http://www.nysaes.cornell.edu/hort/faculty/reisch/bulletin/Corot_noir.pdf

Valvin Muscat™

http://www.nysaes.cornell.edu/hort/faculty/reisch/bulletin/Valvin_Muscat.pdf



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