

VERAISON TO HARVEST

Statewide Vineyard Crop Development Update #5



Cornell University
Cooperative Extension

September 26, 2014

Edited by Tim Martinson and Chris Gerling



September 22. Gewurztraminer (l) and Chardonnay (r) at One Woman Wines on the North Fork of Long Island.

photo by Tim Martinson

Around New York...

Statewide (Tim Martinson)

Warmer and sunny weather in much of NY provided good conditioning for ripening this week. As of this Tuesday's sample (see Fruit maturation table, p. , many cultivars gained 1-1.5 °brix, while acids either remained flat or decreased by 0.5 g/l. Chardonnay, (19 °brix and 9.4 g/l), Pinot noir (20.5 °brix and 8.9 g/l) and Lemberger (20.4 °brix and 8.7 g/l) are in range. Riesling (17.5 and 11 g/l) still has a way to go, but brix has caught up to last year's numbers at this time. Among the natives, Niagara has leveled off (15.1 °brix), but in harvest range, and our three blocks of Concord in the table showed modest gains of 0.4 °brix. Seyval blanc, Sauvignon blanc, Cayuga white, Gruner Veltiner and Zweigelt (see Hans Walter-Peterson article below) are harvested.

This week's feature is a photo feature on our virologists Marc Fuchs and Keith Perry's trip to Long Island to sample for grapevine leafroll and grapevine red blotch.

Lake Erie (Luke Haggerty)

The Lake Erie region has received a much needed change in weather patterns. Over the past week we have had plenty of sunshine and the forecast is calling for similar conditions next week. The sunshine has helped many of the grape varieties to increase in soluble solids. Sampling data for the 9-site study collected by Kelly Link and our CLEREL staff shows another increase in brix for 'Concord' this past week. The averaged brix from the regions' 80 sample sites shows that the total average increased from 13.8 to 15.1 ° brix (1.4° brix).

Along with the sunshine we have also had a break in the rain. During the month of September the region received 2 to 3 inches during the first two weeks followed by daily misting the third week. We broke the wet trend this past week and are predicted to have similar conditions next week as the Concord harvest begins.

The Niagara harvest is underway with varied reports from area processors. Many growers seemed to have overestimated the year's crop as most acreage averaged 5 tons or less. However, other growers had many more grapes than estimated and brought in loads harvested from 12+ tons/acre in some blocks. The Concord harvest is expected to start over the weekend (Sept. 27-28) and many growers are anticipating an average to slightly above-average crop.

Finger Lakes (Hans Walter-Peterson).

Last year, after a cool and wet first half of the season, I told people that a warm and sunny September could "save our bacon" and make up for the less-than-ideal conditions earlier in the season. So far this year, it looks like we're seeing another version of that same story. While it hasn't been as warm as we might have wanted through much of this month, the lack of rain has helped to keep fruit and leaves fairly clean overall.

Lots of Cayuga White has been coming off over the past several days, along with a few other hybrids like Seyval and even some early Vidal. We harvested Zweigelt at the Teaching Vineyard this week, along with half of our Marquis table grapes. The Zweigelt gave us another good demonstration of the impact that virus infection can have on fruit. Cluster samples taken from uninfected vines averaged about 22 Brix, while clusters from symptomatic vines (we



Fruit from Zweigelt vines symptomatic of virus infection was significantly lower in color and Brix than asymptomatic vines.

Hans Walter-Peterson

assume they're infected) were just under 14 brix. Some of the early vinifera varieties like Chardonnay and Pinot noir have started trickling in this week, and will be picking up over the next several days. Constellation is scheduled to begin their Concord harvest on Sunday night, and at this point is expecting to be finished with harvest around the third week of October.

The weather for the next week looks almost ideal for harvest – sunny and warm conditions will help to continue holding down disease

development, while giving fruit the chance to ripen a bit further and perhaps get off the vines a little bit sooner.

Long Island (Alice Wise and Libby Tarleton)

Long Island has enjoyed a very sunny and slightly cooler season this year. Growing degree days are hovering around 2600 compared to 2800-2900 this time last season. Conditions have been extraordinarily dry. We received an average of 2.8" of rainfall June through August but often much of the monthly total fell in one day. Many growers irrigated more than usual; others without irrigation set up temporary lines to water vines on sandier sites.

The dry conditions undoubtedly helped to advance

Table 1. Brix, TA, and pH of selections at the Cornell Long Island Horticultural Research and Extension Center in Riverhead.

Alice Wise

Cultivar	°Brix	TA, g/l	pH
Albariño	23.2	11.7	2.98
Gewürztraminer 3	21.9	5.7	3.33
Malvasia Bianca	20.3	9.8	3.15
Semillon 2	21.8	7.5	3.08
Sauvignon Blanc 1	23.6	9.8	3.03
Sauvignon Blanc 376	22.8	7.7 ¹	3.14
Sauvignon Blanc 530	24.4	9.8	3.10
Tocai Fruilano	22.4	8.1	3.18
Viognier ¹	22.8	7.4	3.21

¹ This clone of SB seems to lose acidity faster than the other clones. Clusters are also smaller.

ripening. Harvest continued this week with blocks of Sauvignon Blanc and Chardonnay both machine and hand-picked. Fruit has been clean, very little cluster rot. The biggest annoyance has been yellow jackets which seem more active than usual. There are still many blocks to be harvested for varietal whites and rose. Fruit has been flavorful and balanced.

Brix readings have been about what we expected while TA's have been variable but generally higher than we usually see. Yields this year are up compared to the previous few years due to increases in clusters/vine and berry number/cluster. In the research vineyard, we harvested the following. Numbers reflect berry samples.

Hudson Valley (Jim O'Connell)

Weather. The weather leading into the weekend and next week may at the same time bring growers great joy and disappointment. The forecast is predicting temperatures in the low 80s for the weekend, with plenty of sunshine. The sun and warmth could help push some of the grapes that are nearly ready. However, growers will want to plan ahead, as rain is predicted for two days next week. Early in the week could just be a morning sprinkle, delaying harvest to the afternoon. The storm later in the week could potentially keep growers out of the vineyard all day.

Disease. There is still no change in downy mildew or botrytis pressure. There is some sour rot in the HVL vineyard, but possibly because of the dry weather, the levels are still low. Looking at the forecast though, it doesn't look like we will be so lucky next week. The rain and warmth may be just what's needed to make these diseases an issue again.

Birds. Birds are still a nuisance in the HVL vineyard. We haven't had time to net, and now are trying pick what's ready before the birds get to it. Last week I mentioned growers having problems with turkeys. Well now we get to join the club! Turkeys have started feeding on the grapes closest to the woods in the HVL vineyard. We suspect they are gliding down from the tall trees bordering the vineyard.

Insects. Brown marmorated stink bugs have returned, though with harvest so close and levels so low, it's unlikely there will be a need to treat for them.

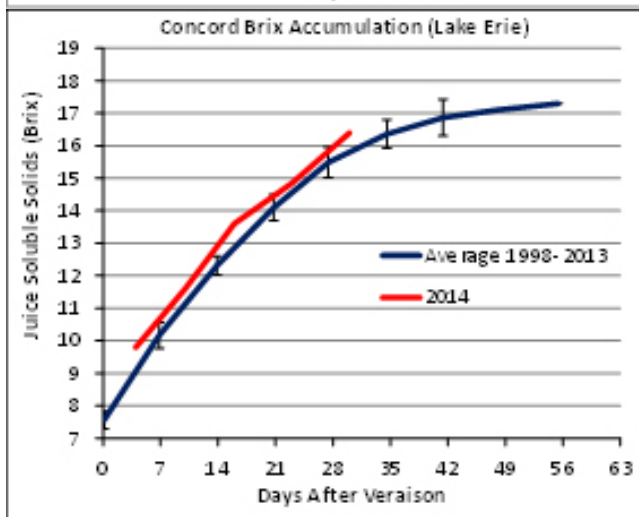
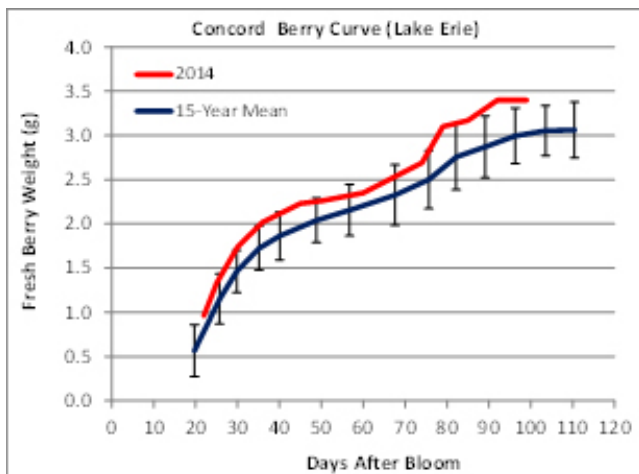
2014 LAKE ERIE CONCORD UPDATE:
Terry Bates

September 25, 2014. Concord at CLEREL is 100 days past bloom and 30 days past veraison. Mean berry weight in our phenology plot has plateaued at 3.4 grams fresh weight. At 30 days after bloom, we predicted final weight to be between 3.2 and 3.4 grams and the high precipitation and vine water status has pushed that to the high side. From this point on, berry weight is more difficult to predict. Water gain or loss through the berry skin and waxy cuticle or water flow in and out of the berry through the pedicel can be erratic in the aging berries. Juice soluble solids continue to slightly outpace the average and the sunny/dry conditions this week should continue to help that trend for next week and into the start of harvest.



We establish sampling protocols in our field plots which aim to increase our confidence in what is happening in the whole field. Once in a while we run across a fun oddity not reflected by the reported mean. This week Paula and Madonna found a 10.89 gram Concord berry in their sample cups! My guess is that the fruit from this cluster is a tetraploid, having double the genetic material as a normal Concord berry.

Terry Bates



Left to right: Keith Perry, Marc Fuchs, and Alice Wise examine a Long Island vineyard for viral disease symptoms.

Photo by Tim Martinson

PROJECT FOCUS:
VIROLOGISTS VISIT LONG ISLAND
Timothy Martinson

Dept. of Horticulture, Cornell University,
NY State Agric. Expt. Sta., Geneva

This past Monday and Tuesday, I accompanied Cornell virologists Marc Fuchs and Keith Perry on a trip to Long Island, to collect samples for virus testing. Cornell Cooperative Extension viticulturist Alice Wise arranged for visits with several vineyard managers on the North Fork.

Of interest are two viral diseases, grapevine leafroll – a longstanding concern, and grapevine red blotch disease – a newly identified disease that Fuchs and Perry played a large role in characterizing, along with California colleagues. Both are graft-transmissible, which means they can be spread through nursery stock, and both affect the productivity and maturity of grapes.

1. Long Island vineyards are intensively managed. Many, like this Chardonnay vineyard, use leaf removal to fully expose clusters. Fruit exposure improves quality and allows clusters to dry rapidly – an important consideration in the maritime environment, with Long Island Sound and Peconic bay just a mile to the North or South. Bird netting is a must, and growers are careful to seal all potential gaps at the bottom (over-the-row) or both edges (side netting).



2. Grapevine leafroll and red blotch symptoms are often easy to spot on red varieties, like this Merlot vine, surrounded by two healthy vines.



3. Classic leafroll symptoms include red leaves with green veins, often starting at basal leaves and spreading throughout the canopy. Leaves often curl at the edges.



4. Grapevine red blotch often appears as an irregular reddening that goes across veins:



5. Sometimes symptoms are subtle, and with red blotch, basal leaves are the most affected.



6. On white cultivars, leafroll-infected vines have yellowish (chlorotic) leaves, with curled edges. They are harder to spot.



7. Leafroll and red blotch are sometimes hard to distinguish in the field. Are these two photos leafroll or are they red blotch?



8. Marc is interested in learning about within-vineyard spread of red blotch. An insect vector is likely to be capable of transmitting the virus in the field, but the vector is unknown at this point. Here Marc is scoring vines for leaf symptoms.



9. Marc and Keith collected leaf samples to bring back to the laboratory for DNA analysis to identify which (if any) virus or viruses was present. Vine position is recorded for possible followup sampling.



10. Thanks to Alice for arranging the visits with Long Island producers.



FRUIT MATURATION REPORT - 9/23/2014

Samples reported here were collected on **Tuesday, September 23**. Where appropriate, sample data from 2013, averaged over all sites is included. Tables from 2013 are archived at <http://grapesandwine.cals.cornell.edu/newsletters/veraison-harvest>

We are again reporting berry weight, brix, titratable acidity and pH, and yeast assimilable nitrogen (YAN). Graduate students Alex Frederickson and Camila Martin Tahim and Ben Gavitt are running the fruit composition and YAN assays.

Cabernet Franc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2014	E. Seneca	-	-	-	-	-
Finger Lakes	9/23/2014	W. Seneca	1.49	17.4	2.92	11.1	22
Finger Lakes	9/23/2014	Cayuga	1.61	18.3	3.03	8.9	41
Finger Lakes	9/23/2014	W. Seneca	1.74	15.7	3.01	10.0	39
Finger Lakes	9/23/2014	Teaching Vyd	1.57	18.7	3.12	7.8	45
Hudson Valley	9/23/2014	HV Lab	1.77	20.1	3.36	7.3	70
Long Island	9/23/2014	LI-05	2.19	20.8	3.29	6.5	30
Long Island	9/23/2014	LI-07	1.52	20.0	3.17	7.3	28
Average	9/23/2014		1.70	18.7	3.13	8.4	39
<i>Prev. Sample</i>	9/16/2014		1.67	17.7	3.10	9.1	43
<i>'13 Average</i>	9/23/2013		1.60	19.3	3.24	7.6	89

Catawba

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2014	Keuka	-	14.7	2.70	22.3	83
<i>Prev Sample</i>	9/16/2014	Keuka	2.79	13.2	2.67	23.7	71
<i>'13 Sample</i>	9/23/2013	Keuka	2.25	15.0	2.83	14.4	142

Cayuga White

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2014	Keuka	2.78	17.4	2.92	13.1	138
Finger Lakes	9/23/2014	HARVESTED					
Finger Lakes	9/23/2014	HARVESTED					
Average	9/23/2014		2.78	17.4	2.92	13.1	138
<i>Prev Sample</i>	9/16/2014		2.78	16.8	3.00	10.4	153
<i>'13 at Harvest</i>	9/16/2013		2.82	18.5	3.05	9.0	170

Chardonnay

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2014	Cayuga	1.64	20.2	3.02	10.7	119
Finger Lakes	9/23/2014	W. Seneca	1.46	16.3	2.79	12.4	46
Finger Lakes	9/23/2014	W. Seneca	1.82	16.4	3.06	9.3	90
Finger Lakes	9/23/2014	Teaching Vyd	1.50	20.7	3.11	7.3	49
Long Island	9/23/2014	LI-03	1.74	20.8	3.26	7.1	98
AVERAGE	9/23/2014		1.63	18.9	3.05	9.4	80
<i>Prev. Sample</i>	9/16/2014		1.66	18.9	3.10	8.6	81
<i>'13 Average</i>	9/23/2013		1.61	19.4	3.21	8.3	172

Concord

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2014	Keuka	3.68	15.3	3.00	11.2	122
Finger Lakes	9/23/2014	W. Canandaigua	3.49	13.6	2.94	11.1	109
Lake Erie	9/23/2014	Portland	3.46	15.3	3.14	9.9	175
Average	9/23/2014		3.54	14.7	3.03	10.7	135
<i>Prev Sample</i>	9/16/2014		3.56	14.3	3.04	11.2	139
<i>'13 Sample</i>	9/23/2013		3.06	15.5	3.19	8.8	231

Corot Noir

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2014	Teaching Vyd	2.17	17.3	3.10	9.2	65
<i>Prev Sample</i>	9/16/2014	Teaching Vyd	2.22	16.1	3.12	8.8	68

Gruner Veltliner

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes		HARVESTED					
<i>Final Sample</i>	9/16/2014	Teaching Vyd	1.63	18.0	3.20	6.8	139

Lemberger

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2014	Keuka	1.76	20.8	2.95	9.3	24
Finger Lakes	9/23/2014	Teaching Vyd	2.22	20.0	3.20	8.2	169
Average	9/23/2014		1.99	20.4	3.08	8.7	97
<i>Prev. Average</i>	9/16/2014		2.00	19.1	3.08	9.4	103
<i>'13 Sample</i>	9/23/2013	Keuka	1.85	21.7	3.03	6.8	53

Malbec

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island	9/23/2014	LI-06	2.73	20.8	3.29	7.4	64
<i>Prev Sample</i>	9/16/2014	LI-06	2.65	17.5	3.25	7.9	63
<i>'13 Sample</i>	9/23/2013	LI-06	2.47	20.4	3.52	7.6	166

Marquette

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Final Sample	9/2/2014	Teaching Vyd	1.09	22.7	2.98	12.9	

Merlot

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Hudson Valley	9/23/2014	HV Lab	1.87	19.8	3.45	6.5	123
Long Island	9/23/2014	LI-04	2.16	21.0	3.42	4.8	42
Long Island	9/23/2014	LI-08	1.81	18.8	3.27	5.9	43
Average	9/23/2014		1.95	19.9	3.38	5.7	69
<i>Prev. Average</i>	9/16/2014		1.95	19.2	3.39	6.9	79
<i>'13 Average</i>	9/23/2013		1.64	20.0	3.50	6.3	128

Niagara

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Lake Erie	9/23/2014	Portland	4.40	15.1	3.21	6.6	172
<i>Prev Sample</i>	9/16/2014	Portland	4.26	15.1	3.14	9.1	197
<i>'13 FinalSample</i>	9/23/2013	Portland	4.01	14.8	3.28	6.8	335

Noiret

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Hudson Valley	9/23/2014	HV Lab	1.90	18.4	3.20	8.2	123
Lake Erie	9/23/2014	Fredonia	1.86	17.5	3.13	11.5	194
Average	9/23/2014		1.88	18.0	3.17	9.9	159
<i>Prev Sample</i>	9/16/2014		1.90	16.9	3.11	11.4	213
<i>'13 Sample</i>	9/23/2013		1.88	17.8	3.28	10.4	293

Pinot Noir

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2014	E. Seneca	1.39	20.5	3.12	8.9	88
<i>Prev Sample</i>	9/16/2014	E. Seneca	1.40	19.1	3.12	10.0	94
<i>'13 Sample</i>	9/23/2013	E. Seneca	1.58	20.6	3.13	8.0	94

Riesling

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2014	E. Seneca	1.50	16.5	2.88	14.1	74
Finger Lakes	9/23/2014	E. Seneca	1.81	18.2	2.86	11.6	35
Finger Lakes	9/23/2014	W. Seneca	1.28	17.7	2.86	12.9	49
Finger Lakes	9/23/2014	E. Seneca	1.73	17.8	2.97	12.1	147
Finger Lakes	9/23/2014	CL 90 Cayuga	1.80	17.2	2.97	11.9	108
Finger Lakes	9/23/2014	Keuka	1.31	18.3	2.93	11.8	53
Finger Lakes	9/23/2014	W. Seneca	1.73	17.7	2.93	12.3	119
Finger Lakes	9/23/2014	W. Seneca	1.61	16.9	2.91	13.3	101
Finger Lakes	9/23/2014	W. Canandaigua	1.68	16.6	2.89	13.5	114
Finger Lakes	9/23/2014	Teaching Vyd	1.41	17.3	2.92	9.9	25
Hudson Valley	9/23/2014	HV Lab	1.73	17.9	3.26	7.9	101
Lake Erie	9/23/2014	Portland	1.69	17.7	3.07	10.9	132
Long Island	9/23/2014	LI-01	1.41	18.0	3.05	8.9	69
Average	9/23/2014		1.59	17.5	2.96	11.6	87
<i>Prev Sample</i>	9/16/2014		1.56	16.1	2.92	12.6	89
<i>'13 Sample</i>	9/23/2013		1.46	17.3	3.02	10.2	109

Sauvignon Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island		HARVESTED					
<i>Final Sample</i>	9/16/2014	LI-02	1.44	19.5	3.16	7.5	63
<i>'13 at Harvest</i>	9/9/2013	LI-02	1.23	22.1	3.23	8.1	141

Seyval Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/9/2014	HARVESTED					
Lake Erie	9/9/2014	HARVESTED					
Final Sample	9/9/2014		1.82	18.2	3.04	9.0	148
<i>'13 at Harvest</i>	9/9/2013	Cayuga	1.77	19.9	3.22	6.4	126

Traminette

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2014	Keuka	2.12	16.4	2.92	14.3	107
Hudson Valley	9/23/2014	HV Lab	1.97	19.8	3.09	8.4	43
Lake Erie	9/23/2014	Portland	1.99	20.4	3.03	11.2	122
Average	9/23/2014		2.03	18.9	3.01	11.3	91
<i>Prev Sample</i>	9/16/2014		1.64	18.5	2.97	10.9	92
<i>'13 Sample</i>	9/23/2013		1.89	19.9	3.05	8.8	91

Vidal Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2014	Teaching Vyd	2.05	19.0	3.08	10.5	61
<i>Prev Sample</i>	9/16/2014	Teaching Vyd	2.16	17.7	3.04	10.3	62

Vignoles

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2014	High Wire Keuka	1.88	20.5	2.96	17.1	248
Finger Lakes	9/23/2014	W. Seneca	1.82	19.5	2.91	15.8	157
Average	9/23/2014		1.85	20.0	2.94	16.5	203
<i>Prev Sample</i>	9/16/2014		1.91	19.6	2.93	16.3	184
<i>'13 Sample</i>	9/23/2013	W. Seneca	1.73	23.5	3.17	11.6	185

Zweigelt

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Final Sample	9/16/2014	Teaching Vyd	1.82	17.0	3.17	7.3	149
Prev Sample	9/9/2014	Teaching Vyd	1.82	16.5	3.06	8.0	157

RESEARCH VINEYARD AT THE LONG ISLAND HORTICULTURAL RESEARCH AND EXTENSION CENTER

Tim Martinson

Alice Wise and Libby Tarleton manage a research vineyard at the Long Island Horticultural Research and Extension Center, where 25+ cultivars and clonal selections are grown and evaluated. The Long Island variety trial is over 20 years old, and started with vines that Bob Pool's research support specialist Gary Howard supplied to Alice. Alice and Libby introduce a few new cultivars every year, and have renovated the trial at several points over the years. Wine lots are made by Alice and Libby out of selected cultivars, and others go to cooperators for vinification. Several other trials, including ground cover and sour rot, are in place at an adjacent vineyard.



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