

VERAISON TO HARVEST

Statewide Vineyard Crop Development Update #6



Cornell University
Cooperative Extension

October 4, 2013

Edited by Tim Martinson and Chris Gerling

Around New York...

Statewide (*Tim Martinson*).

Sunny, warm days, cool nights provided excellent ripening weather throughout New York this past week, and as importantly provided unfavorable conditions for spread of any latent Botrytis or other fruit rots out there. We can't ask for more. In the North Country, we harvested Frontenac from our plots in Clayton NY (ca 23 °Brix, TA from 15-17 g/l, typical for the variety).

In our fruit maturation table (p. 5-7) Cab Franc, Merlot, and Chardonnay gained 1.0-1.5 °Brix, while many others gained between 0.5 and 1.0 °Brix. Acids dropped from 'not at all' (Lemberger, Malbec, Traminette) to 0.5-1.0 g/l. Riesling on average dropped below 10 g/l and the many Cab Franc blocks hovered around 7.5 g/L. Rain over the weekend will give way to more sunny days, but lower temperatures through the end of next week.

Long Island (*Alice Wise and Libby Tarleton*).

Long Island is enjoying an unprecedented stretch of sunny, dry weather. August and September were both dry months and we've had no appreciable rain for weeks. We barely broke 3000 GDD by the end of September, suggesting to some that harvest may be delayed.

On the contrary, the dry weather has advanced ripening. Interesting as well is the lack of pressure from 'the birds and the bees'. There are a few flocks of starlings around but overall, bird pressure has been relatively low this harvest. Similarly, bees are almost non-existent this harvest. Perhaps the lack of cluster rot (damaged fruit) has caused bees to look elsewhere for a meal.

We finished with Chardonnay in the Riverhead research vineyard on October 3. The various clones ranged from 21-22.5 Brix and 7-9 g/l TA. There was a smidgen of Botrytis but absolutely no sour rot – and no sorting needed. As a result, picking went very quickly. We also picked many of our white varieties this week including Aligoté, Verdejo, Gewürztraminer, Semillon, Viognier and Tocai Friulano. Only Petit Manseng remains.

Across the board, the quality has been excellent. Quantity has been good as well with the exception of Tocai Friulano and Viognier. We have a perennial problem with sterile shoots in those two varieties. Perhaps we have the wrong clones. We also picked several reds including the new



Riesling harvest at Wagner Vineyards, Lodi, NY

Photo by Hans Walter-Peterson

Cornell hybrid Arandell at 21.7 Brix and 7.35 g/l TA and Zweigelt at 22.2 Brix and 6.9 g/l TA.

Hudson Valley (*Jim O'Connell*).

Up to last week weather trends have been cooperative, allowing growers to delay picking. It looks as though that will change this week and into next. Temperatures are expected to climb into the upper 70s and possibly low 80s over the next couple of days and into the weekend, with some possible wet weather next week. Currently the forecast shows periods of rain and thunder showers throughout the week. Growers trying to let the grapes hang a little longer may find themselves harvesting sooner than expected.

The harvest continues this week in the Hudson Valley with growers picking a variety of cultivars, including Riesling, Baco Noir and Marechal Foch. Here at the Hudson Valley Lab, we are harvesting Chelois, Concord, Sauvignon Blanc, and Cabernet Franc. Chelois and Sauvignon Blanc are ready with brix over 20, Concord is a bit overripe with an average brix of 18, and Cab Franc with an average brix near 20 (might be just a bit early but we're trying to stay ahead of wildlife pressure).

Lake Erie (*Luke Haggerty*).

The Lake Erie region is finally drying up after the day-long soak two weeks ago where most of the area received around three inches of rain. Wet conditions during harvest can be concerning as they can cause berries to split which can attract insects and lead to bacterial and fungal rots. The last two weeks have been great for both ripening and harvesting grapes. The area for cast looks favorable for this coming

week with highs into the 70's and lows only in the 50's. We are officially into the second week of the Concord harvest! The National Grape Cooperative started to process ConCORDs September 27th at the Westfield, NY location. Berry maturity is becoming evident as sugar accumulation and berry weight have started to slow down. However, with the warm and sunny afternoons this past week sugars did raise just shy of 1°Brix.

For the most part the regions Niagara harvest has finished up. Boxes and bins filled fast with a heavy crop load this year and the sugars have been fairly high putting smiles on the grower's faces. Other varieties that were recently harvested are Vidal blanc and some early Riesling. One area grower reported 6.5 ton per acre on their early Riesling... that's a heavy crop..

Finger Lakes (Hans Walter-Peterson).

Over 75 different varieties of grapes are grown in the Finger Lakes, but we seem to take a little extra note when two of them start to be harvested – Concord and Riesling. Concord harvest started a couple of weeks ago, and will continue for a few more weeks. Over the past several days, some early loads of Riesling have started to make their way to crush pads around the region as well. Last week's samples from the Veraison to Harvest newsletter were in the 19-20 Brix range, and acidity was sitting at around 7-8 g/L, so it's not surprising that some fruit started to come off with those kinds of numbers. It sounds like a lot more of this year's Riesling crop will be coming off over the next couple of weeks.

Students from the Viticulture program at Finger Lakes Community College picked small crops of Riesling, Gruner Veltliner and Zweigelt from our teaching vineyard this week. Commercial vineyards are still working through Chardonnay, Gewurtztraminer, Merlot, while most Pinot noir and Pinot gris are off the vines by now.

We ended the month of September with less than 50% of our average rainfall at Geneva (1.60" vs. the average of 3.78"), and the kind of conditions that we usually dream of every year. The lack of rain this month was just what many vineyards needed in order to keep the early bunch rot infections in check this year.

The (mild) downside to this dry weather is that we are starting to see some spots showing signs of drought stress, typically in areas with lighter or shallow soils. Vineyards on deeper, more fertile soils don't appear to be suffering at all right now. A few growers and wine-makers have commented that sugar levels have not moved up much at all over the past week, which could suggest that some vines are slowing down due to the dry conditions. Forecasts for the next week show the

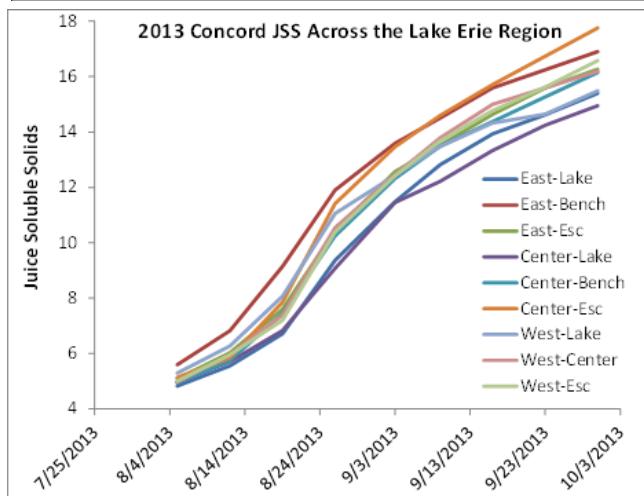
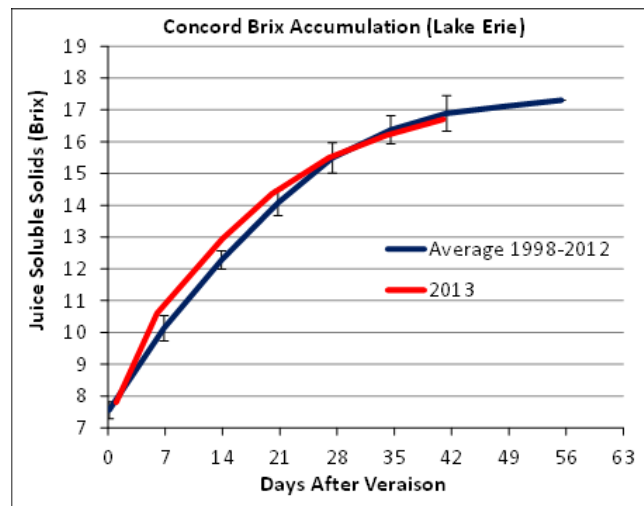
potential for the return of some rainy days, so growers and wineries will be carefully watching the condition of fruit to determine when to harvest.

2013 LAKE ERIE CONCORD UPDATE

Terry Bates

Concord Harvest in the Lake Erie Region is just about to start. Fruit samples in the phenology block at CLEREL in Portland, NY reached 16.7 °Brix this week. The block with the phenology vines was machine harvested this week with the 22 ton load averaging 16.1 °Brix. On a per-acre basis, that converts to 8.0 T/acre, mechanically thinned in August from an estimated 10.5 to 11.0 T/A potential crop.

Across the region, Concord juice soluble solids ranged from 14.9-17.8 with a mean of 16.2 °Brix depending on the distance from Lake Erie and elevation.



Concord juice soluble solids from phenology vines at the Cornell Lake Erie Research and Extension Laboratory in Portland, NY (top) and from experiment vines at nine commercial sites across the Lake Erie region (bottom).

PRELIMINARY RESULTS OF WINERY
SANITATION SURVEY

Diane M. Schmitt and Anna Katharine Mansfield

Clean wineries and good wine go together. A survey was conducted in late August to identify common sanitation methods practiced at wineries in the Eastern United States. The survey was sent through the NYWINE email list managed by the Enology Extension Laboratory at Cornell University. Responses were received from thirty-four wineries in New York, Massachusetts, Vermont, Pennsylvania, and Virginia. Responding to every question was not required and total responses for individual questions are stated in this report. The majority of the survey responses were from wine-makers and winery owners.

A terminology review at the start of the survey defined cleaning as the removal of mineral and organic material or debris from equipment surfaces. Sanitizing was defined as reducing viable microorganism cell populations to acceptable levels. To ensure an effective cleaning and sanitizing regime, the following steps should be performed: pre-rinse, execution of appropriate cleaning method, rinse, sanitization, and rinse. Care should be taken to select appropriate cleaning methods as well as detergents and sanitizers to ensure debris and microbial contaminants are reduced to acceptable levels. It's important to remember that good cleaning is essential, and no amount of sanitizer will make up for incomplete cleaning. Imagine painting a wall while paintings are still hanging on it- that's the best a sanitizer can perform when there's still grime coating a surface.

Effective sanitation programs are critical at wineries, as poor sanitation may facilitate the growth of spoilage microorganisms in juice and wine as well as have other deleterious effects that could lead to revenue losses. Based on the results of the survey 78.8% of the wineries stated that they have established cleaning and sanitizing programs while 18.2% did not, and 3% were unsure. (33 total responses). Figure 1 shows the frequency of food industry cleaning practices used in these wineries.

In addition to cleaning, twenty-seven of the wineries reported using sanitizers, four did not, and one was unsure. (32 total responses) The frequency of specific sanitizers used in the wineries is listed in figure 2 below.

The periodic rotation of cleaning and sanitizing chemicals is important to prevent the survival and

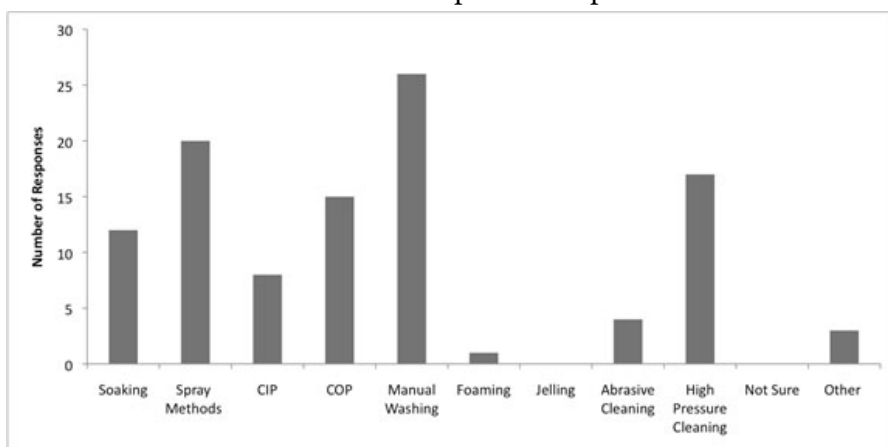


Figure 1. Frequency of cleaning methods used. CIP: cleaning in place. COP: cleaning out of place. Other methods listed were sterile solution, steam generator for tartrate removal, and use of a clean cloth.

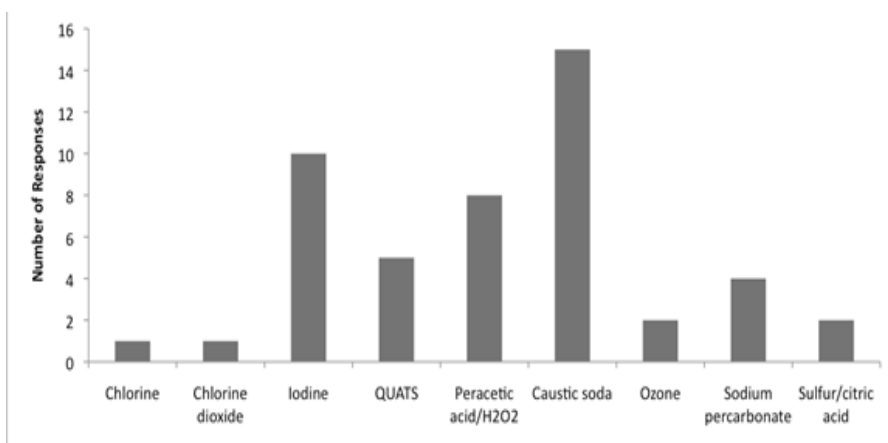


Figure 2. Frequency of select sanitation chemicals used in wineries. (29 total responses).

growth of undesirable microorganisms that may become tolerant to chemicals over a long period of time. Also, some chemicals may be inherently less effective toward certain types of organisms. The rotation of specific chemicals used for cleaning and sanitizing is a known practice in the food industry but is executed less in wineries as 68% did not perform rotations, 29% did, and 3% (one winery) was unsure. (31 total responses). Most of the rotations were reported as being performed either weekly, monthly, or semi-annually.

As sanitation is a team effort at production facilities, employee training is an important component in ensuring effective practices. Results from this survey show that at sixteen of the wineries employees undergo a sanitation training program, fifteen of the wineries do not have an official program, and three wineries did not respond to the question. Developing official training programs is a great benefit to wineries as the information can be conveyed to all employees in the same way and is helpful in demonstrating the good manufacturing practices of the facility.

The maintenance of records tracking cleaning and sanitization activities (performed at only four of the wineries (32 total responses)) is also a great way to document the good manufacturing practices being performed at wineries. Furthermore,

testing to confirm the effectiveness of cleaners and sanitizers is only performed at two wineries. (32 total responses). Testing juice and wine contact surfaces ensures that spoilage microorganisms are not present and able to proliferate. However, a good cleaning and sanitation may reduce the need to perform monitoring tests. Finally, seventeen wineries stated that they currently have a pest control program (32 total responses). Additional information on good manufacturing practices for food processing facilities can be found on the FDA website (<http://www.fda.gov/Food/GuidanceRegulation/CGMP/default.htm>).

This report provides a brief overview of the winery sanitation survey conducted. Additionally, information collected indicated that there is a variety of cleaning chemicals used, methods for cleaning wooden barrels, and cleaning and sanitizing methods used for bottling lines. We hope to report on this data in upcoming newsletters or workshops. This survey is part of an ongoing project on winery sanitation and safety being conducted at the Cornell University Enology Extension Laboratory. We are still seeking responses for the survey. If your winery has not yet participated, the web address is:

https://cornell.qualtrics.com/SE/?SID=SV_e2sm3bnLJTJ3Rrv

ARANDELL AND BEES AT CORNELL'S NOFA-CERTIFIED ORGANIC BLOCK

Cornell viticulture professor **Justine Vanden Heuvel** planted and has maintained an organic grape block at Cornell Orchards, near the Ithaca campus, which she uses to teach her Sustainable Viticulture class. The block is one of a handful in New York that is certified organic, and inspected annually by the Northeast Organic Farming Association (NOFA) of NY. And it's the first time I have ever seen honeybees feeding on grapes.



FRUIT MATURATION REPORT - 10/4/2012

Samples reported here were collected on **Monday, September 30s**. Where appropriate, sample data from 2012, averaged over all sites is included. Tables from 2012 are archived at <http://grapesandwine.cals.cornell.edu/cals/grapesandwine/veraison-to-harvest/2012.cfm>.

We are again reporting berry weight, brix, titratable acidity and pH, and yeast assimilable nitrogen (YAN), as part of a joint project with Anna Katharine Mansfield and Lailiang Cheng. Graduate student Mark Nisbit is running the YAN assays as part of his Ph D project, and other students from the Enology lab are running samples . - TEM

Cabernet Franc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/30/2013	E. Seneca	1.65	21.4	3.12	7.7	38
Finger Lakes	9/30/2013	W. Seneca	1.48	21.0	3.17	8.4	38
Finger Lakes	9/30/2013	Cayuga	1.78	20.1	3.22	7.3	70
Finger Lakes	9/30/2013	W. Seneca	1.51	20.1	3.25	7.2	52
Hudson Valley	9/30/2013	HVL	1.57	19.9	3.48	6.8	136
Lake Erie	9/30/2013	Portland	1.58	17.7	3.40	7.5	180
Long Island	9/30/2013	LI-05	2.00	21.7	3.55	6.3	57
Long Island	9/30/2013	LI-07	1.37	21.9	3.32	6.8	47
Average	9/30/2013		1.62	20.5	3.31	7.2	77
Prev Sample	9/23/2013		1.60	19.3	3.24	7.6	89
'12 Average	10/1/12		1.63	21.5	3.38	5.9	77

Catawba

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/30/2013	Keuka	2.32	16.5	2.89	12.7	102
Prev Sample	9/23/2013	Keuka	2.25	15.0	2.83	14.4	142
'12 Sample	10/1/12	Keuka	2.24	19.5	3.02	9.0	77

Cayuga White

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2013	Keuka	HARVEST				
Finger Lakes	9/23/2013	Cayuga	HARVEST				
Final sample	9/23/2013	HARVEST	2.98	16.6	2.98	11.4	219
'12 at Harvest	9/5/2012	HARVEST	2.52	18.8	3.18	8.7	284

Chardonnay

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/30/2013	Cayuga	1.62	20.5	3.17	8.3	100
Finger Lakes	9/30/2013	W. Seneca	HARVEST				
Finger Lakes	9/30/2013	W. Seneca	1.64	19.0	3.25	7.3	128
Long Island	9/30/2013	LI-03	1.57	21.8	3.63	6.6	178
Average	9/30/2013		1.61	20.4	3.35	7.4	135
Prev. Sample	9/23/2013		1.61	19.4	3.21	8.3	172
'12 at Harvest	9/17/2012	HARVEST	1.48	20.7	3.60	6.1	245

Concord

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/30/2013	Keuka	2.91	16.0	3.28	7.1	177
Finger Lakes	9/30/2013	W. Canandaigua	3.05	16.5	3.21	6.9	108
Lake Erie	9/30/2013	Portland	3.22	15.8	3.35	11.0	472
Average	9/30/2013		3.06	16.1	3.28	8.3	252
Prev Sample	9/23/2013		3.06	15.5	3.19	8.8	231
'12 Sample	10/3/2011		3.41	17.4	3.34	7.9	199

Lemberger

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/30/2013	Keuka	1.83	22.1	3.13	7.6	42
Prev Sample	9/23/2013	Keuka	1.85	21.7	3.03	6.8	53
'12 at Harvest	9/24/2012	HARVEST 2012	1.79	23.6	3.20	7.2	40

Malbec

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island	9/30/2013	LI-06	2.33	21.2	3.46	7.8	134
Prev Sample	9/23/2013	LI-06	2.47	20.4	3.52	7.6	166
'12 Sample	10/1/12	North Fork S	2.63	19.9	3.61	7.2	231

Merlot

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Hudson Valley	9/30/2013	HVL	HARVEST				
Long Island	9/30/2013	LI-04	1.84	21.7	3.47	6.3	76
Long Island	9/30/2013	LI-08	1.68	20.4	3.44	5.7	97
Average	9/30/2013		1.76	21.1	3.46	6.0	87
Prev. Sample	9/23/2013		1.64	20.0	3.50	6.3	128
'12 Average	10/1/2012		1.84	20.3	3.69	4.8	112

Niagara

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Lake Erie		HARVEST					
Final Sample	9/23/2013	Portland	4.01	14.8	3.28	6.8	335
'12 at Harvest	9/5/2012	HARVEST 2012	3.84	16.6	3.26	7.2	205

Noiret

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Hudson Valley	9/30/2013	HVL	1.61	18.7	3.48	8.6	236
Lake Erie	9/30/2013	Fredonia	1.96	17.0	3.49	10.6	267
Average	9/30/2013		1.78	17.9	3.49	9.6	252
Prev Sample	9/23/2013		1.88	17.8	3.28	10.4	293
'12 at Harvest	9/24/2012	HARVEST 2012	1.74	19.2	3.37	7.5	147

Pinot Noir

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/30/2013	HARVEST					
Final Sample	9/23/2013	E. Seneca	1.58	20.6	3.13	8.0	94
'12 at Harvest	9/10/2012	HARVEST2012	1.46	20.9	3.52	6.4	222

Riesling

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/30/2013	E. Seneca	1.50	17.4	3.03	8.9	41
Finger Lakes	9/30/2013	E. Seneca	1.59	19.2	3.01	8.8	24
Finger Lakes	9/30/2013	W. Seneca	1.34	19.4	3.02	10.1	31
Finger Lakes	9/30/2013	E. Seneca	1.43	18.2	3.03	10.7	109
Finger Lakes	9/30/2013	CL 90 Cayuga	1.53	18.2	3.03	10.1	92
Finger Lakes	9/30/2013	Keuka	1.32	18.3	2.97	9.4	35
Finger Lakes	9/30/2013	W. Seneca	1.67	18.9	3.08	9.1	138
Finger Lakes	9/30/2013	W. Seneca	1.52	18.3	3.09	9.9	115
Finger Lakes	9/30/2013	W. Canandaigua	1.58	16.5	3.16	10.4	236
Hudson Valley	9/30/2013	HVL	1.53	17.3	3.32	6.5	134
Lake Erie	9/30/2013	Fredonia	1.66	15.6	3.16	7.8	107
Long Island	9/23/2013	HARVEST					
Average	9/30/2013		1.52	17.9	3.08	9.2	97
Prev Sample	9/23/2013		1.46	17.3	3.02	10.2	109
'12 Sample	10/1/2012		1.47	19.6	3.10	7.1	59

Sauvignon Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Long Island	9/16/2013	HARVESTED					
Final Sample	9/9/2013	HARVESTED	1.23	22.1	3.23	8.1	141
'12 at Harvest	9/10/2012	HARVESTED	1.70	20.2	3.40	7.5	141

Seyval Blanc

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/16/2013	Harvested					
Final Sample	9/9/2013	HARVESTED	1.77	19.9	3.22	6.4	126
'12 at Harvest	9/10/2012	HARVESTED	1.71	19.4	3.39	6.3	194

Traminette

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/30/2013	Keuka	1.98	21.8	3.04	9.7	119
Hudson Valley	9/30/2013	HVL					
Lake Erie	9/30/2013	Fredonia	1.85	19.3	3.26	8.0	99
Average	9/30/2013		1.91	20.6	3.15	8.8	109
Prev Sample	9/23/2013		1.89	19.9	3.05	8.8	91
'12 Sample	10/1/2012		1.80	21.8	3.18	7.2	109

Vignoles

Region	Harvest Date	Description	Ber. Wt. g.	% Brix	pH	TA g/L	YAN (ppm)
Finger Lakes	9/23/2013	VSP Keuka	HARVEST				
Finger Lakes	9/30/2013	W. Seneca	1.67	23.9	3.16	12.9	179
Average	9/30/2013	W. Seneca	1.67	23.9	3.16	12.9	179
Prev Sample	9/23/2013	W. Seneca	1.73	23.5	3.17	11.6	185
'12 at Harvest	9/10/2012	HARVESTED	1.32	24.5	3.27	8.8	163

SPOTTED WING DROSOPHILA SPOTTED ON SAMPLES FROM LONG ISLAND GRAPES

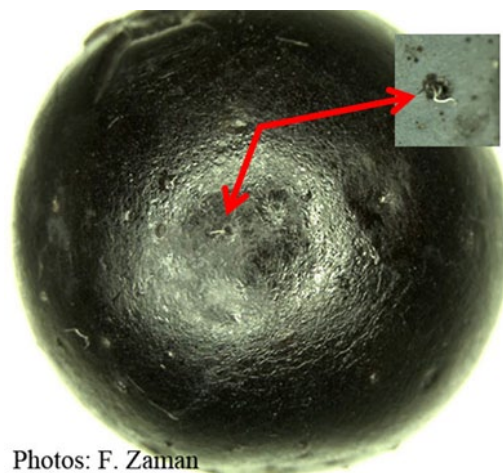
Faruque Zaman and Julie Carroll

Reprinted from [Spotted Wing Drosophila Blog](#), a publication of the NYS IPM program

In September, SWD populations in Suffolk County increased over four-fold, with more than 400 per trap (up from <100). Similar trends have been observed in other regions. Late season raspberries are almost 100% infested in blocks without insecticidal control. Since early August, Faruque Zaman, Suffolk County Cornell Cooperative Extension entomologist, has been checking grapes for SWD infestations, looking for SWD eggs' white breathing tubes extending from within the intact grape. During early September, SWD was detected in <1% of Merlot and Pinot Noir berries. However, on Sept. 27, a Merlot sample (150 berries) showed 25% of berries with SWD oviposition, whereas, no SWD was detected in Chardonnay from the same vineyard. The absence of other preferred hosts at this time of the season and the much higher trap counts this year might be a factor in the sudden upswing in SWD infestations in grapes. Monitoring will continue through fall, but Cornell University entomologists still maintain that SWD poses a low threat to grapes on Long Island and in other regions of New York State. Decisions to [treat grapes](#) should be based on scouting for fruit infestation, projected harvest dates, and the potential for rain which can lead to fruit rots in infested clusters.

Spotted Wing Drosophila oviposition in a Merlot grape. Breathing tubes attached to egg within berry (red arrows) are visible in the center of the grape. Close-up of another oviposition site is shown in the inset at top right.

Photo by Faruque Zaman



Photos: F. Zaman



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