

August 17, 2017

# Finger Lakes Vineyard Update

## In the Vineyard

For a change, dry and sunny weather predominated over the past week, at least until yesterday afternoon. This season's rainfall at Geneva is now within 0.2" of what we get on average during an entire season, and we are starting to see some signs in the vineyard that this is having an impact on the vines beyond heavier disease pressure.

I mentioned a few weeks ago that vines in areas with heavy soils or poor drainage were showing some signs of stress including poor growth and chlorotic (yellowing) leaves due to the high water content in those soils preventing proper root function and nutrient uptake. We have also started to see and hear about young vines (1-2 years old) turning yellow as well over the past couple of weeks. While not 100% sure, it seems likely that these vines are also struggling with nutrient uptake, particularly nitrogen, under these high soil-water conditions this year.





Soil Nitrogen cycle. Source: <u>http://articles.extension.org/</u> <u>pages/18657/soil-microbial-nitrogen-cycling-for-</u> organic-farms Much of the vines' nitrogen supply at this point of the year comes from the mineralization of organic matter, which releases N into the soil solution in forms that plants can take up ( $NH_4^+$  and  $NO_3^-$ ). Under conditions with lots of rainfall, N uptake by plants can be hindered by a few different factors:

• If soil drains relatively easily, more water moves through the soil profile and carries the nitrogen with it out of the root zone.

• Young vines have smaller, more shallow root systems, which means that N doesn't need to move too deep in the soil to be beyond the reach of the roots.

• When soils are saturated and there is no oxygen, soil microbes will cause a process called 'denitrification' to occur, which converts nitrate  $(NO_3)$  into a few different forms nitrogen-containing gas, which volatilize into the atmosphere.

organic-farms So what's a grower to do in this case? Unfortunately, we don't have a clear cut answer to the problem, but here a couple of possible options, and one or two things to consider about each:

<u>Apply foliar nitrogen to the canopy</u> – applying N directly to the leaves can get them to green up somewhat, but multiple studies have shown that we can't alleviate macronutrients deficiencies with foliar fertilizers. Is it enough to get the vines to keep their leaves until the fall? It could be. Applying some foliar N can also help to improve the reserves in the woody tissues of the vine, which are used for early season growth next year.

## In the Vineyard (continued from page 1)

- Remember also that multiple applications of foliar N have been seen to increase botrytis incidence and severity in fruit. However, in a trial in 2011, Tim Martinson found that either 3 pre-veraison or 3 post-veraison sprays of foliar urea didn't dramatically increase botrytis levels in Riesling (but it did increase them somewhat). In the case of young vines where the crop has been removed, however, this obviously wouldn't be a concern. As always, your mileage may vary with regard to the results of any vineyard practice, so just be aware of the potential consequences of using this approach.
- <u>Apply N fertilizer to the ground</u> We all know that the roots are by far the best organ for nutrient uptake into vines (despite what one or two foliar fertilizer sales pitches I've heard in the past might say). The problem with this option is that, if the deficiency is a result of root function being impeded because of too much water, it will be difficult for the roots to take up nutrients regardless of the whether it's from organic matter or a synthetic fertilizer.

Given the options, I think that it can make some sense to try applying one or two sprays of foliar N in these situations, especially if fruit rot isn't a concern because the crop has bee removed. Regardless of what you decide to do regarding nitrogen applications, removing as much weed competition as possible from under the trellis in a young block of vines can also help to reduce some of the competition for N as well.

#### References:

Martinson, T., M. Nisbet, W. Wilcox, L. Cheng. 2011. Project Focus: Foliar Nitrogen Sprays Increase YAN and Botrytis in Riesling. 'Veraison to Harvest' newsletter, October 6, 2011. Accessed at <u>https://grapesandwine.cals.cornell.edu/sites/grapesandwine.cals.cornell.edu/files/shared/documents/Veraison-to-Harvest-2011-6.pdf</u>

# Finger Lakes Vineyard Update

#### Finger Lakes Grape Program

#### IPM

#### Hans Walter-Peterson

Downy mildew continues to be the primary disease concern at this point of the season, but the dry weather the region has had over the past week (until yesterday) has helped to slow the spread further to some extent. Unfortunately, we have still had several nights with high humidity, as indicated by the presence of dew on the leaves in the morning, which are the conditions needed for new spores to be generated and spread by the wind. As a result, we still see new colonies forming on previously healthy leaves.

We continue to see sporatic evidence of botrytis infection in pre-veraison clusters, but things still look relatively clean for the most part. Concerns about sour rot shouldn't be ignored, of course, and growers with susceptible varieties should be ready to manage it when the time comes. When is that time? Work done in Canada by Wendy McFadden-Smith showed that berries don't develop sour rot problems until they reach about 15° Brix and are wet from rain. As mentioned before, a combination of an anti-microbial material (e.g., Oxidate) and an insecticide approved for use on spotted wing drosophila (Mustang Max, Delegate, Entrust, Spintor; Danitol and Triple Crown have PHIs of 21 and 30 days, respectively) seems to be an effective combination for sour rot management, especially when started soon after fruit reaches 15 Brix and before symptoms develop or just after. For both of these diseases, of course, good canopy management also plays an important part in reducing the impacts to the fruit, between more rapid drying of the fruit after rains or morning dew and better penetration of materials to the fruit zone.



Source: Jodi Timer, Penn State University. http:// psuwineandgrapes.files.wordpress.com/

#### Grape Berry Moth

In warmer parts of the Finger Lakes, we are past the window for applying an insecticide to control damage from the third "hatch" of berry moth larvae. Based on the weather stations around Keuka Lake, vineyards in that part of the region are just entering the 1620-1700 GDD window to apply materials for control of GBM. The action threshold at this point in the season is 15% of clusters scouted showing signs of GBM damage. Growers in Wayne County will reach the window this weekend or early next week.

When using the GBM model, be sure that the wild grape bloom biofix date is correct. The model enters a "best guess" date itself based on conditions at that time of year, but this date can sometimes be off by several days, which can make a big difference in the dates that the model suggests for spray

applications for your best chance of success.

## Tailgate Recap-August 15, 2017

#### Gillian Trimber

It rained, it poured, and still folks came out in droves to chat at our Tailgate meeting last night on the Bluff. Perhaps the rain had something to do with it—it's been a tough year for disease control, and we had plenty to talk about in that realm. In particular, many growers are finding that they've applied more pesticide applications than they normally do, and have already twice cycled through the materials they had planned to use... making it difficult to manage for resistance development. Fortunately, with veraison at hand, we're coming into the home stretch for the spray season.

Looking around at a few Concord and Catawba blocks near Branchport yesterday, and hearing from everyone at the meeting, it seems like berry size is really big this year! We have the potential for some pretty high yields, in large part because of this, as long as we're able to ripen the crop. Larger, mature vines seem to be doing pretty well with all of this water. We have been seeing yellowing on smaller or younger vines, most likely due to nitrogen being flushed from the soil or waterlogged roots... and so we spent time at the meeting discussing what to consider before applying foliar urea, and how to balance the vine's needs with the potential increase in botrytis that may come from spraying nitrogen.

The real highlight of the meeting, though, was having Jim Meyers, the newly hired grape specialist for Eastern New York, come to speak about work he's been doing with NDVI (Normalized Difference Vegetation Index) imaging and mapping in vineyards using drones. He showed the group detailed 3-D vineyard maps created using images he had taken that morning, as well as maps showing differences in vigor across a vineyard. This technology has a number of far-reaching applications for differential management strategies and for developing more representative sampling procedures in order to get more accurate crop estimates. Though it was too wet for a demonstration flight at last night's meeting, we're hoping that Jim will be out next week at our field meeting to show how it all works.

We're incredibly grateful to the Gridleys for hosting our meeting last night—they even brought snacks and wine!—as well as to Jim for making the drive out to speak. Our next, and final, Tailgate Meeting of the year (woah!) will be Tuesday, August 29<sup>th</sup>, at Lamoreaux Landing from 4:30-6:00 PM. See you then!



## Personal touch plus professionalism earn Excellence in IPM award for grape specialist

## NYS IPM Program Press Release

As a kid, Tim Weigle often tagged along with his dad, a plant breeder at Iowa State University. It gave him a taste for agriculture and research. But once in college he took an entomology class — and everything changed. That class included an introduction to integrated pest management (IPM).

"I was fascinated by the interaction of plant systems and pest complexes," Weigle says. So he added IPM to his bachelor's program, then topped it off with a master's in horticulture. "It gave me the solid foundation in crop production I needed to practice IPM," he says.

Now, for nearly 30 years of innovative, farmer-focused IPM research and outreach in the Lake Erie Regional Grape Program (LERGP), Tim Weigle has earned an Excellence in IPM award from the New York State IPM Program (NYS IPM).

Examples? Weigle helped build a dense concentration of grower-owned weather stations linked together online through NEWA — the Network for Environment and Weather Applications — to predict when to scout for destructive grape berry moths and a hit list of other pests. And he's applied LERGP research to use tractor-mounted sensors, each with a chip providing data for creating color-coded maps. These maps pinpoint where destructive grape rootworms are probably at work underground.

"This means you can check just those spots for grape rootworm and spot-treat only them," Weigle says."

Then there's Weigle's leadership on the Organic Guide for Grapes and the Pest Management Guidelines for both grape and hops. He's also been a trailblazer in IPM research and outreach for the hopyards that help fuel New York's microbreweries.

But it's his way with people that really sets Tim Weigle apart. Sure, the internet has a lot to offer. But nobody wants a faceless Extension. Weigle created weekly "coffee pot meetings," held at vineyards all along Lake Erie's grape belt. Indeed, they're what "face time" is all about. They don't even have an agenda. Instead, they're driven by what's got farmers curious or worried that week.

"Some of those early coffee pot meetings were at our vineyard, back when our son was just a little kid," says Dawn Betts of Betts Farms LLC. "I remember one time we'd all gone out to the vineyard, and Tim was talking about grape berry moths. Well, our son went down the row and picked some of the stung berries where the moths had laid their eggs. And Tim said 'if this young man can do it, you can too.'

The Betts family goes to a lot of those meetings. "We learn from each other," Betts says. "If one of us has an issue, chances are the others will soon."

"Tim does a fabulous job of incorporating the fundamentals of biology while bringing the latest science to address growers' challenges," says Jennifer Grant, director of NYS IPM. "We're proud to have him on our NYS IPM team."

Weigle received his award at the Lake Erie Regional Grape Program's Summer Conference on August 11, 2017. Learn more about IPM at <u>nysipm.cornell.edu</u>.





## **Upcoming Events**

Don't forget to check out the calendar on our website (<u>http://flgp.cce.cornell.edu/events.php</u>) for more information about these and other events relevant to the Finger Lakes grape industry.

#### **Tailgate Meeting**

*Tuesday, August 29 4:30 – 6:00 PM Lamoreaux Landing Wine Cellars 9224 Route 414 Lodi, NY* 

Our ninth and final Tailgate Meeting of the year will be held at Lamoreaux Landing in Lodi on Tuesday, August 29.

These meetings are held every other week at various grape farms around the Finger Lakes, and are intended to be informal, small-group meetings where FLGP staff and growers can ask questions and discuss issues about vineyard management, IPM strategies or other topics appropriate for that point in the growing season. 0.75 DEC recertification credits will be available.

#### **FLGP Field Meeting**

Thursday, August 24 4:30 – 6:00 PM Finger Lakes Teaching & Demonstration Vineyard at Anthony Road Wine Company 1020 Anthony Road, Penn Yan NY

For a number of years, growers have been hearing about the use of various digital imaging technologies in agriculture. We have had a few different talks by members of the Lake Erie Regional Grape Program at our B.E.V. NY conference about their work using NDVI images and other technology to understand vineyard variability, and then using that information to improve management practices, including the incorporation of various mechanization tools.

Next week, growers will get a chance to see some of this technology up close and person. Terry Bates and Jackie Dresser from the LERGP will be here to show us some of the imaging equipment that they use in their work on the "Efficient Vineyard" SCRI project that Terry is leading. In addition, Jim Meyers, our new

viticulture extension specialist in Eastern NY, and Justine Vanden Heuvel will be here to discuss how they are using NDVI imagery captured by a drone to help growers better manage their harvest. Both groups will present data from a local vineyard that they will scan earlier that day in order to provide an example of how the two different systems work, and what types of information each one can provide. We'll talk about the ways that growers can potentially use this kind of data to improve their vineyard management.

We will also be discussing and demonstrating a method we have been working on to spread cover crop seed under the vine trellis as part of a project funded by the NY Farm Viability Institute. Justine Vanden Heuvel will review some of the research behind the practice, and we will show an example of a row seeded with buckwheat earlier this season.





August 17, 2017



# 2017 Growing Degree Days and Rain Fall

FLX Teaching & Demonstration Vineyard – Dresden, NY							
Date	Hi Temp (F)	Lo Temp (F)	Rain (inches)	Daily GDDs	Total GDDs		
8/9/17	81.0	59.8	0.00	20.4	1804.2		
8/10/17	80.0	62.0	0.00	21.0	1825.2		
8/11/17	77.0	61.0	0.00	19.0	1844.2		
8/12/17	82.0	66.0	0.00	24.0	1868.2		
8/13/17	77.0	59.0	0.00	18.0	1886.2		
8/14/17	81.0	59.0	0.00	20.0	1906.2		
8/15/17	83.0	66.0	0.20	24.5	1930.7		
Weekly Total			0.20"	146.9			
Season Total			18.91"	1930.7			

GDDs as of August 15, 2016: 2049.6 Rainfall as of August 15, 2016: 8.22"

Data for the preceding week was taken from the NEWA station at the Penn Yan airport. *Our station at the Teaching & Demonstration* Vineyard has been down for about 10 days but is back up and running as of Wednesday afternoon.



### Seasonal Comparisons (at Geneva)

## **Growing Degree Day**

	2017 GDD <sup>1</sup>	Long-term Avg GDD <sup>2</sup>	Cumulative days ahead (+)/behind (-) <sup>3</sup>
April	125.8	64.0	+12
May	219.1	252.7	+3
June	492.7	480.8	+3
July	624.0	641.1	+1
August	293.2	591.7	+1
September		353.5	
October		106.4	
TOTAL	1754.6	2490.3	

<sup>1</sup> Accumulated GDDs for each month. <sup>2</sup> The long-term average (1973-2016) GDD accumulation for that month.

<sup>3</sup> Numbers at the end of each month represent where this year's GDD accumulation stands relative to the long-term average. The most recent number represents the current status.

# 2017 Growing Degree Days and Rain Fall

## Precipitation

	2017 Rain <sup>4</sup>	Long-term Avg Rain <sup>5</sup>	Monthly deviation from avg <sup>6</sup>
April	3.42"	2.85	+0.57"
Мау	5.35"	3.08	+2.27"
June	4.00"	3.61	+0.39
July	7.42"	3.36	+4.06"
August	2.54	3.13	
September		3.64	
October		3.22	
TOTAL	22.73"	22.95"	

<sup>4</sup> Monthly rainfall totals up to current date

<sup>5</sup> Long-term average rainfall for the month (total)

<sup>6</sup> Monthly deviation from average (calculated at the end of the month)

# **Additional Information**







Become a fan of the Finger Lakes Grape Program on Facebook, or follow us on Twitter (@cceflgp) as well as YouTube. Also check out our website at <u>http://</u> flgp.cce.cornell.edu.

Got some grapes to sell? Looking to buy some equipment or bulk wine? List your ad on the <u>NY Grape</u> <u>& Wine Classifieds website today!</u>

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