

In the Vineyard

Hans Walter-Peterson

Most varieties that we have been seeing over the past few days are at trace bloom or more. The only variety at the Teaching Vineyard where aren't seeing any signs of bloom yet is Vidal blanc, which is almost always the last to go at our site.

Other than some heavy localized rains on June 1 (totals around the Finger Lakes ranged from 0.3" to 2.5" that day), the month of June has been fairly dry, especially during the critical bloom period. Dry, sunny weather leading up to and during the bloom period is beneficial for the pollination process and fruit set. If cool and cloudy conditions predominate in the prebloom period, the flowers may not develop normally, which will reduce the number that will ultimately form berries. Excessively cool or hot temperatures (below 65°F and above 100°F) during bloom can also slow the growth of the pollen tube towards the egg, which is only viable for a certain amount of time. Rain during bloom can prevent the calyptra (the "caps" or petals on each flower) from completely detaching from the flower, which can also interfere with pollination. It can also dilute the fluid that sits on top of the stigma, which can prevent pollen grains from germinating.



Cut away diagram of a grape flower during pollination. Source: "Grape Berry Growth & Development", N. Dokoozlian. In Raisin Production Manual, ed. L. Peter Christensen The relative vigor of the vine can also influence fruit set. At bloom, the flowers on the vine are competing for resources with the growing shoot tips, but at this time of year the shoot tips are very strong sinks for resources. On an overly vigorous vine (or one that is undercropped), they can outcompete the flower clusters for nutrients and result in poor flower development and set. Vines that are overcropped or with weak growth will generally set poorly as well because of a lack of nutrients for the overall functioning of the vine.

One of the major factors in fruit set that growers actually have some influence over is the nutrient

status of the vine. Poor fruit set can be the result of nutrient deficiencies in the vine. Recall that most of the vine's nutrient needs before bloom are actually

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met by reserves in the permanent structure of the vine being remobilized, which means that significant deficiencies from the year before can impact the development of the flowers in the early part of the current season. The two mineral nutrients most often associated with fruit set are boron and zinc. The ratio of carbon to nitrogen may also play a role in as far as it influences vine vigor, and nitrogen levels have been suggested as a possible explanation for early necrosis of the cluster. Many growers will include boron in one or two sprays before bloom to try to increase B levels in the tissues.

Which leads me to...

Nutrient Testing

I won't belabor the point as I wrote more extensively about this last week, but I just wanted to offer a quick reminder about tissue testing to assess the nutrient status of your vineyard. Most vineyards had yields last year that were significantly higher than normal, which means more nutrients were removed from the vineyard via the fruit. If collecting samples isn't possible at this point in the season, they can also be collected around veraison, which is the other time of year that we have nutrient standards to compare results to.

Sampling materials and forms are available from any commercial lab that can do the analysis, or from your local Extension office.

<u>Video:</u> How to Sample Petioles in the Vineyard, from the FLGP. <u>https://www.youtube.com/watch?</u> <u>v=IrvpQWUEQKw</u>

Finger Lakes Grape Program

IPM

Hans Walter-Peterson

The onset of bloom means that we are in the most critical period of the season for good disease management. Every grape grower should know the lyrics to this song by now:

- This is not the time of the season to cut corners. Use good materials, be sure to include adjuvants if the product calls for them, use enough water and drive down every row.
- Be sure that whatever combo platter you put into the tank covers all of the major diseases of concern at this time powdery mildew, downy mildew, black rot and phomopsis.
- Double-check FRAC codes on all materials to be sure that there is a good program for rotating between chemical types. This is especially important in the newer blended materials (e.g., Revus Top FRAC codes 3 & 40; Inspire Super FRAC codes 3 & 9).

In visiting some vineyards earlier this week, the only disease that was relatively easy to find was phomopsis. This was a little surprising given the relative lack of rainfall we have had, but is probably a reflection of heavier pressure last year, when we had a much wetter spring and phomopsis lesions were fairly common. We did see a few small lesions resembling early downy mildew infections in a couple of blocks yesterday (Tuesday). This kind of situation could be a good time to use one of the phosphorous acid products – ProPhyt, Phostrol, Rampart – or others that have good post-infection activity against DM (check the IPM Guidelines for options).

Grape Leafhopper



We were also seeing some grape leafhoppers in vineyard blocks the past several days. Numbers were not high at this point, but they're definitely there. Feeding damage (see photo) will usually start on suckers closer to the ground and work its way up into the canopy. In most cases, they are more of a nuisance and don't rise to the level of requiring a spray, but damage can be more severe in dry years (we saw this in a few cases in 2016).

From Greg Loeb in this year's Grape Insect & Mite newsletter article: "Sampling for leafhoppers corresponds to sampling for grape berry moth. At the immediate post bloom period sucker shoots should be examined for evidence of stippling (white dots on leaves

caused by leafhopper feeding). If you see stippling throughout the vineyard block an insecticide treatment is recommended. Note that for vineyards at high risk of GBM damage, you may already be applying an insecticide at this time (10-day postbloom). If you use a broad-spectrum material such as Danitol you will also control leafhoppers." (Greg Loeb, *Grape Insect and Mite Pests – 2018*, https://nygpadmin.cce.cornell.edu/pdf/newsletter_notes/pdf103_pdf.pdf_).

Andy Muza, with Penn State Extension and who works with the Lake Erie Regional Grape Program, also wrote an nice summary about leafhoppers, how and when to scout and management options. You can read his article at <u>https://psuwineandgrapes.wordpress.com/2017/06/09/grape-leafhoppers/</u>.

Finger Lakes Grape Program

IPM (continued from page 3)

Hans Walter-Peterson

Grape Berry Moth (GBM)

At the Teaching Vineyard in Dresden, the GBM model stands at 318 degree days as of Wednesday, June 13, using a biofix date of Monday, May 28. We're still probably a couple of weeks off from the 810 DD threshold for an insecticide application, but in the meantime, growers can be looking for early signs of GBM activity by looking for webbing in young clusters. As the first generation of larvae begin to feed in the small clusters and berries, they produce a webbing that is fairly easy to spot if the canopy isn't too dense (see photo). It might be easier to look for this webbing than examining damage to very small berries that are early in development.



Webbing from GBM larvae in an early cluster of grapes. Source: http:// www.omafra.gov.on.ca

Stata		C D					U TDU		
State:	Grape Berry Moth Results for Dresden (FLX TDV)								
New York V	Wild Com				Plaam: 5/28/2018				
Weather station:	Wild Grape Bloom date above is estimated based on degree day accumulations or user input. Enter the actual date for blocks of interest and the model will calculate the results more accurately.								
Dresden (FLX TDV)									
breaden (FBX FBY)	Accumulated degr	ee days (h	ase 47 14º	F) wild ar	ne bloom	through 6/1	3/2018-	300 (0 day	missing
Date of Interest:	Accumulateo orgi	ce days (o	430 47.14	r) who gr	ape bioom	unougnori		sos (o day.	(insing)
6/13/2018		D 11 1		D 6	D 1	TIV	TDIA		
Calculate	Daily Degree Days for Dresden (FLX TDV)								
Calculate	D 7	Past P	Past	Current	ent 5-Day Forecast		Forecast Details		
	Base Temp	Jun 11	Jun 12	Jun 13	Jun 14	Jun 15	Jun 16	Jun 17	Jun 18
	47.14F - GBM	16	22	24	18	18	21	27	31
	Accumulation	273	294	318	336	355	376	403	434
	NA - not available						Do	wnload Time	: 6/13/201
	Pest Status First generation of grape berry moth larvae are hatching and beginning feeding. Grape berry moth will not be at significant population levels in all but the highest risk vineyards.			Pest Management Research has shown that this insecticide timing for the first generation provides little, if any, additional control of grape berry moth in vineyards classified as being at low, intermediate or high risk for grape berry moth damage. However, an insecticide timed with the immediate postbloom fungicide application can be used in vineyards experiencing significant crop loss from grape berry moth on a yearly basis or in high value vinifera blocks.					
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Surge of I-9 Audits This Summer, Are You Ready?

Richard Stup, CCE Agricultural Workforce Development Program

This article is written by Cornell's new agricultural workforce specialist, Dr. Richard Stup, who joined Cornell this past January. Dr. Stup will be meeting with several grape growers this week to get to know a little bit about the industry and to hear about issues related to vineyard labor in the Finger Lakes. You can sign-up to receive emails from his program and find more ag workforce information at <u>http://agworkforce.cals.cornell.edu/</u>.

U.S. Immigration and Customs enforcement (ICE) is planning to ramp up the number of Form I-9 audits this summer according to <u>an article from the Society for Human Resource</u> <u>Management (SHRM)</u>. I-9 Audits are a key part of the ICE's enforcement efforts, the

agency provides <u>a factsheet</u> that documents how they conduct audits. The process starts with a notice of inspection which compels the employer to provide copies of original I-9's and other pertinent HR records such as payroll. Findings from an ICE audit are communicated back to the employer and can result in the following six most common notices (quoted directly from the ICE website):

• **Notice of Inspection Results** – also known as a "compliance letter," used to notify a business that they were found to be in compliance.

• **Notice of Suspect Documents** – advises the employer that based on a review of the Forms I-9 and documentation submitted by the employee, ICE has determined that an employee is unauthorized to work and advises the employer of the possible criminal and civil penalties for continuing to employ that individual. ICE provides the employer and employee an opportunity to present additional documentation to demonstrate work authorization if they believe the finding is in error.

• **Notice of Discrepancies** – advises the employer that based on a review of the Forms I-9 and documentation submitted by the employee, ICE has been unable to determine their work eligibility. The employer should provide the employee with a copy of the notice, and give the employee an opportunity to present ICE with additional documentation to establish their employment eligibility.

• Notice of Technical or Procedural Failures – identifies technical violations identified during the inspection and gives the employer ten business days to correct the forms. After ten business days, uncorrected technical and procedural failures will become substantive violations.

• **Warning Notice** – issued in circumstances where substantive verification violations were identified, but circumstances do not warrant a monetary penalty and there is the expectation of future compliance by the employer.

Notice of Intent to Fine (NIF) – may be issued for substantive, uncorrected technical, knowingly hire and continuing to employ violations.

A NIF obviously includes fines but can also be the beginning of greater civil and even criminal penalties. According to the SHRM article, ICE has plans to further increase I-9 audits by creating a national inspection center and deploying electronic scanning technology to greatly increase their audit capacity. It's more critical than ever for employers to ensure they are in compliance.

Employers are obligated by the Immigration Reform and Control Act of 1986 to verify the identity and authorization to work of all employees. <u>Cornell Agricultural Workforce Development</u> developed a web page to help farm employers understand and comply with I-9 requirements. You can find links to helpful sites and a detailed I-9 Standard Operating Procedure (SOP) on the <u>I-9 page</u>. Farm employers can use and adapt the I-9 SOP to create a business process that will help ensure legal compliance, demonstrate good faith efforts, and avoid severe penalties from ICE enforcement.



June 14, 2018

Seeking grower collaborators for mycorrhizae study.



Representation of the effect of mycorrhizae on grape roots, image from WineLand Magazine, full article available at <u>http://</u> www.wineland.co.za/why-is-mycorrhiza-important-for-grapevines/

Grapevines benefit from a symbiotic relationship with arbuscular mycorrhizal fungi (AMF). Together the vine and the AMF form mycorrhizae, which play an important role in vine health, grapevine nutrition, and water relations. A range of products - generally referred to as soil microbial stimulators - are sold with the goal of encouraging the formation of mycorrhizae.

The Vanden Heuvel research program is working with growers to trial some of the more promising products on the market. Some of you are already experimenting with a range of products in the vineyard, however after studying previous experiments we've discovered that the only products that have been proven to work in other crops to encourage mycorrhizae formation have been inoculants that contain Glomus species.

We are seeking more growers to purchase and trial at least one product containing Glomus. If you are interested in trialing a product on a small area of your vineyard please email <u>Justine@cornell.edu</u>. We will help you evaluate potential impacts on your vineyard. This project is funded by the New York Farm Viability Institute.

Finger Lakes Grape Program

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 #4Tuesday, June 26, 20184:30 – 6:00 PMRavines Wine Cellars400 Barracks Road, Geneva NY 14456

Our fourth Tailgate Meeting of the season will be held at Ravines Wine Cellars in Geneva. Pesticide credits have been approved for each Tailgate Meeting this season. No registration required – just bring a chair and your questions and observations about what's going on in the vineyard.

Tailgate Meeting #5

Tuesday, July 10, 2018 4:30 – 6:00 PM Bully Hill Vineyards 9121 Greyton H Taylor Memorial Dr. Hammondsport NY 14840

Respirator Fit Testing

July 16-17, 2018 Fulkerson Winery 5576 Route 14, Dundee NY Anybody who still needs to have their respirator fit test completed can take advantage of this opportunity to do so at Fulkerson Winery. Call the winery at (607) 243-7883 to make an appointment.



2018 GDD & Precipitation

FLX Teaching & Demonstration Vineyard – Dresden, NY							
Date	Hi Temp (F)	Lo Temp (F)	Rain (inches)	Daily GDDs	Total GDDs		
6/6/2018	60.5	50.9	0.00	5.7	525.3		
6/7/2018	72.0	50.8	0.00	11.4	536.7		
6/8/2018	73.4	55.6	0.00	14.5	551.2		
6/9/2018	77.5	52.3	0.00	14.9	566.1		
6/10/2018	75.9	56.5	0.00	16.2	582.3		
6/11/2018	75.6	52.8	0.00	14.2	596.5		
6/12/2018	80.9	57.1	0.00	19.0	615.5		
Weekly Total			0.00"	95.9			
Season Total			6.34"	615.5			

GDDs as of June 12, 2017:

Rainfall as of June 12, 2017: 9.32"



Seasonal Comparisons (at Geneva) as of May 29

Growing Degree Day

	2018 GDD ¹	Long-term Avg GDD ²	Cumulative days ahead (+)/behind (-)		
April	8.2	65.4			
Мау	416.3	251.9			
June	152.5	165.0			
July					
August					
September					
October					
TOTAL	577.0	482.3	+6		

¹ Accumulated GDDs for each month.

² The long-term average (1973-2017) GDD accumulation as of that date in the month.

593.8

³ 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.

2018 GDD & Precipitation (continued from page 10)

Precipitation

	2018 Rain ⁴	Long-term Avg Rain ⁵	Monthly deviation from avg ⁶
April	1.92"	2.87	-0.93"
May	3.15"	3.13	+0.02"
June	0.78"	3.62	
July		3.45	
August		3.14	
September		3.57	
October		3.37	
TOTAL	5.85"	23.16"	

⁴ Monthly rainfall totals up to current date

⁵ Long-term average rainfall for the month (total)

⁶ 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://flgp.cce.cornell.edu</u>.

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

Finger Lakes Grape Program Advisory Committee

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Cornell Cooperative Extension Finger Lakes Grape Program

Hans Walter-Peterson—Team Leader Donald Caldwell—Viticulture Technician The Finger Lakes Grape Program is supported, in part, by six county Cornell Cooperative Extensions Associations: Ontario, Seneca, Schuyler, Steuben, Wayne and Yates.

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