Cornell Cooperative Extension Finger Lakes Grape Program

July 1, 2020

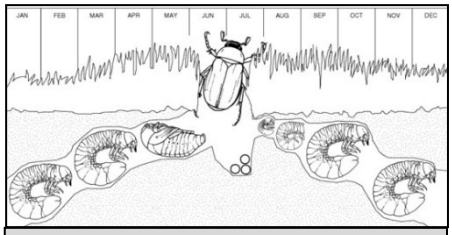
Finger Lakes Vineyard Update

IPM

In This Issue:

Japanese Beetles

The first of this year's crop of Japanese beetles (JB) are starting to appear in Finger Lakes vineyards. As we discuss every year, the damage done to vineyards by these pests feeding on leaves is mostly cosmetic, but can have an impact on productivity and ripening with enough feeding.

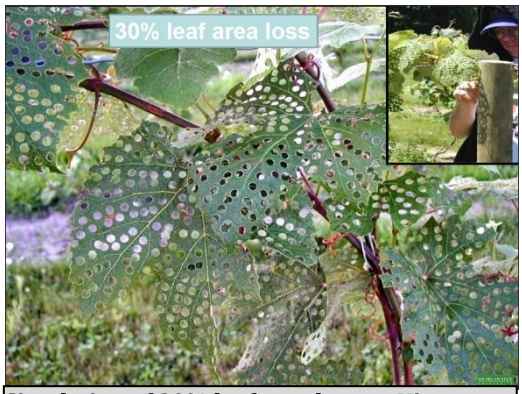


Life cycle of Japanese beetle. The beetles produce one generation each year. Source: https://blogs.cornell.edu/jentsch/2016/07/03/japanese-beetle-

Japanese beetles go through only one generation per year, so this year's population is dependent on how many eggs were laid by females last year, and how many larvae were able to survive underground as they developed before emerging from the soil as adults. The eggs and early larvae are vulnerable to dry soil conditions during the summer, which can reduce the number of larvae that survive and emerge as adults the following year (Pfeiffer and Schultz). This is probably at least part of the reason that we are seeing higher populations this year, and why numbers were so low in 2017 following the previous year's drought.

Adults emerge from the soil in mid-summer and begin feeding and then mating and egg-laying. The big question, as always, is "How much feeding is too much?" In many cases, the amount of feeding that takes place is inconsequential to the overall health of the vine and its ability to ripen the fruit. The actual impact of feeding on leaves will depend on a few factors, including how much functional leaf area remains, the amount of crop hanging in the vines, and the cultivar.

Rufus Isaacs (Michigan State University) looked at the impact of 30% leaf area loss on non-bearing Niagara vines (see photo) and found that there was little effect on the amount of vine growth and the following year's crop. Higher value cultivars, however, should probably be considered to have lower thresholds of damage before taking action. Greg Loeb says that 15-20% foliar damage seems to have little to no impact on most vines, but factors like those mentioned above should be considered when deciding whether or not to apply an insecticide for JBs. Young vines, of course, are especially vulnerable to damage from JB feeding as they have relatively little leaf area and vine reserves to compensate for any damage that is caused, so action thresholds in new plantings should be even lower.



Simulation of 30% leaf area loss on Niagara leaves. Source: http://www.isaacslab.ent.msu.edu/Images/talks/Isaacs%20Viticulture%202010%20JB%20for%20web.pdf

IPM (continued from pg.2)

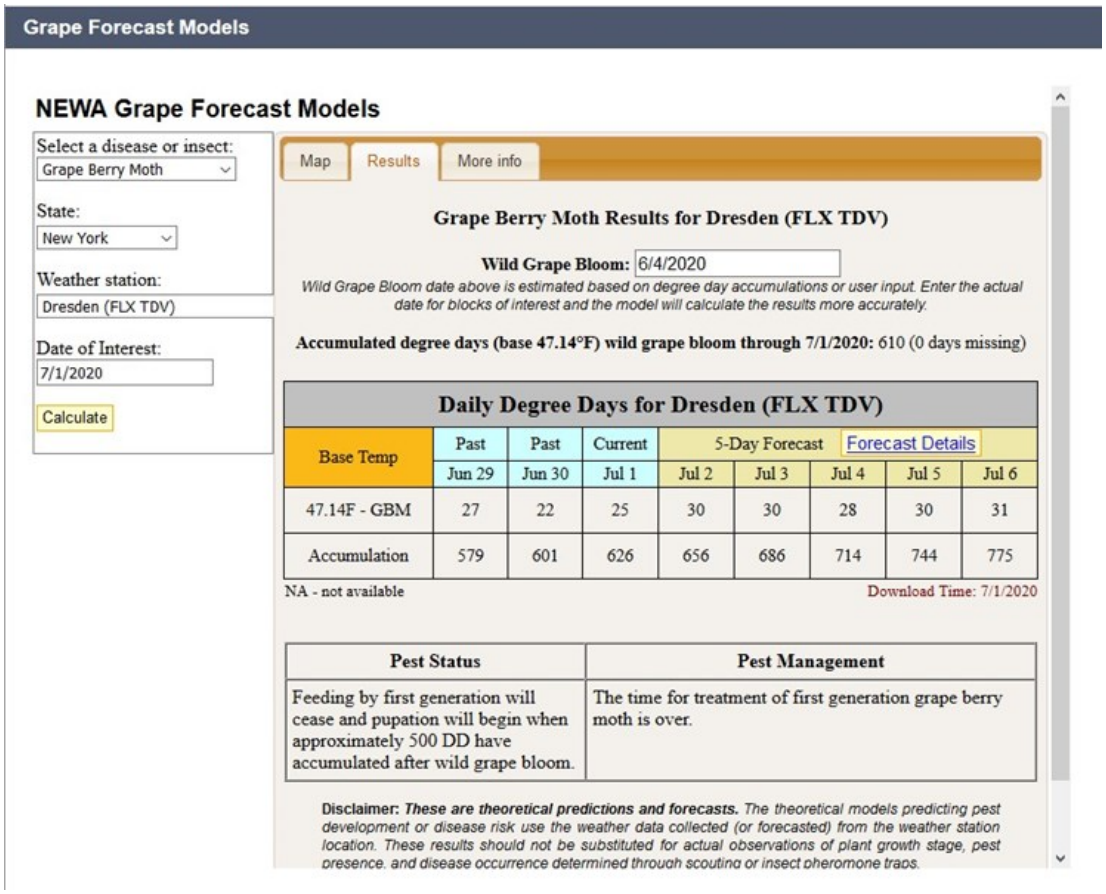
There are a number of insecticides that can be used for JB control if it is warranted. Most of them have some activity against other insect pests as well, but also are toxic to natural enemies to various extents. Some of the most widely used insecticides that affect JB, including Danitol, Sevin, Brigade and Mustang Max, are toxic to predatory insects in the vineyard as well. Materials that are somewhat less harmful to beneficial species but still effective against JB include Altacor, Imidan, Assail, and Provado, along with a handful of others. You can find more options in Table 4.2.2. of the NY/PA Grape Pest Management Guidelines.

Grape Berry Moth

Webbing and frass from GBM larva. Photo: Rufus Isaacs, Michigan State Univ.

We are also approaching the point where scouting should begin for grape berry moth (GBM) to determine if a spray will be beneficial once we reach 810 GDDs on the GBM model. As of today (July 1) at Dresden, we are at about 626 GDD based on a biofix date of June 4. Scouting should begin sometime around 750 GDDs, which should be within just a few days based on the high temperatures forecast for the next several days. Applications should be made if greater than 6% of clusters show signs of damage from GBM.

Materials like Intrepid and Altacor need to be put on as close to 810 GDDs as possible (just before, ideally) in order for them to be ingested by the larvae as they feed. Other materials like carbamates (Sevin) or pyrethroids (Mustang Maxx, Danitol) should be applied between 810 – 900 GDDs in order to be most effective. Be sure to take a look at the GBM model using the nearest weather station to identify scouting windows and when to spray if needed



Grape Forecast Models

NEWA Grape Forecast Models

Select a disease or insect: Grape Berry Moth

State: New York

Weather station: Dresden (FLX TDV)

Date of Interest: 7/1/2020

Calculate

Map | Results | More info

Grape Berry Moth Results for Dresden (FLX TDV)

Wild Grape Bloom: 6/4/2020

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.

Accumulated degree days (base 47.14°F) wild grape bloom through 7/1/2020: 610 (0 days missing)

Daily Degree Days for Dresden (FLX TDV)

Base Temp	Past Jun 29	Past Jun 30	Current Jul 1	5-Day Forecast Jul 2	Jul 3	Jul 4	Jul 5	Jul 6
47.14F - GBM	27	22	25	30	30	28	30	31
Accumulation	579	601	626	656	686	714	744	775

Forecast Details

NA - not available

Download Time: 7/1/2020

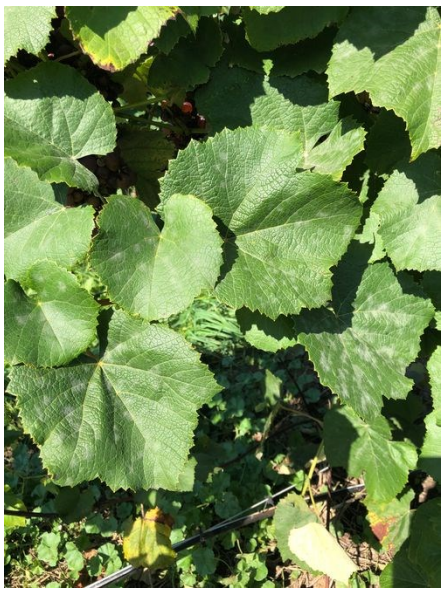
Pest Status	Pest Management
Feeding by first generation will cease and pupation will begin when approximately 500 DD have accumulated after wild grape bloom.	The time for treatment of first generation grape berry moth is over.

Disclaimer: ***These are theoretical predictions and forecasts.*** *The theoretical models predicting pest development or disease risk use the weather data collected (or forecasted) from the weather station location. These results should not be substituted for actual observations of plant growth stage, pest presence, and disease occurrence determined through scouting or insect pheromone traps.*

Grapevine powdery mildew fungicide resistance survey

Michigan State University is seeking help to conduct a survey for QoI/FRAC 11 resistant powdery mildew populations around the Great Lakes region.

Nancy Sharma and Timothy Miles, Michigan State University, Department of Plant, Soil and Microbial Sciences



Powdery mildew sporulation at the Clarksville Research Center. Photo taken Sept. 18, 2019, by Timothy Miles, MSU.

While this article was directed at the Michigan grape industry, New York growers are also eligible to participate in this project. Katie Gold is collaborating with Tim Miles on this field survey, and they will also be starting a similar project looking at resistance to FRAC 40 materials (e.g., Revus) in downy mildew in NY vineyards next year. If you have questions about the survey, feel free to reach out to me or Katie. - Hans

Powdery mildew, caused by the fungal pathogen *Erysiphe necator*, is a devastating disease in grapevines. This disease can affect all green tissues of the grapevines and results in reduction of yield, fruit quality, vine growth and winter hardiness. Signs of this disease on leaf include small white or grayish-white powdery patches on the upper and lower leaf surface (Photo 1). Later, these small patches will enlarge and cover the entire leaf surface. Similar white powdery patches are observed on other green tissues of the vines. Infection of blossom cluster may lead to withering and drop out of flowers without fruit setting, and cluster stem infection may cause berry drop. Affected berries may get distorted and split open if severely infected. Late in the season, black colored fruiting bodies (chasmothecia) of powdery mildew will begin to form on leaf surfaces.

Due to current and forecasted weather conditions in 2020, there is a significantly higher chance of powdery mildew disease this season in Michigan. Numerous fungicide applications are required for the grape powdery mildew management. However, the site-specific fungicide classes that are available for powdery mildew control can lead to the development of fungicide resistance. Resistance has been already reported across the U.S. for one extremely important group, the quinone outside inhibitor (QoI) fungicides (FRAC code 11).

QoI fungicides were first labeled in the early 2000s in grapes and resistance was first found in 2009 in Michigan *E. necator* samples. Several products that are labeled in grape contain FRAC 11 components, including Abound and generics (azoxystrobin), Flint/Flight Extra (trifloxystrobin), Intuity (mandestrobin) and Sovran 50WG (kresoxim-methyl) as well as products that have contain a portion of QoI fungicides such as Pristine (pyraclostrobin and boscalid), Tanos (cymoxanil and famoxadone) and Quadris Top (difenoconazole and azoxystrobin). To consult which specific products contain FRAC 11 fungicides and their perceived efficacy, please consult the E154 Fruit Management Guide from Michigan State University Extension.

QoI resistance has been investigated previously in Michigan by MSU as part of the Fungicide Resistance Assessment, Mitigation and Extension Network (FRAME), which includes a team of grape researchers from around the U.S. that are trying to understand resistance to several site-specific fungicide products. In 2018 and 2019, widespread QoI resistance was found in both years in Michigan vineyards. For more information about fungicide resistance might develop, please see this video and look at some of the resources that FRAME provides to limit resistance development in your vineyard.

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Grapevine powdery mildew fungicide resistance survey (continued from pg.3)

Timothy Miles processing a sample of QoI fungicide resistance. Photo by Laura Miles, MSU.

This year, FRAME would like to look at Michigan powdery mildew populations using a molecular biology test that can quickly and rapidly identify powdery mildew resistance so that you can use these results for management decisions for the next year's growing season. Samples typically can be sent to our laboratory and we will process them and return information to you (Photo 2).

MSU and FRAME are seeking your help to conduct this survey. Please contact Nancy Sharma, a plant pathology graduate student, at sharm115@msu.edu if you are interested in helping us. You will receive a kit to test your grape powdery mildew samples in your vineyard. The samples will then be sent in a provided overnight mailer back to MSU. We will send you the detailed procedure for sample collection as well.

Guidance for Essential Workers Arriving in NY from U.S. States with Significant Community

Richard Stup, Cornell Agricultural Workforce Development Program

On June 24, 2020 the NY State Department of Health (NYSDOH) issued Interim Guidance for Quarantine Restrictions on Travelers Arriving in New York State Following Out of State Travel. This was in response to the high rates of COVID-19 infection now occurring in many southern U.S. states. NYSDOH is providing a regularly updated list of the restricted states and it currently includes 16 states. The NYSDOH Guidance requires anyone entering NY from those states to quarantine for 14 days. Some NY agricultural producers source part of their seasonal farm workforce from the southern U.S., especially during the fall harvest when labor demands reach peak. The June 24 NYSDOH Guidance contains the following language specific to long-term, essential workers:

Long Term – for essential workers traveling to New York State for a period of greater than 36 hours, requiring them to stay several days. This includes instances such as an essential worker working on longer projects, fulfilling extended employment obligations, and other longer duration activities.

- Essential workers should seek diagnostic testing for COVID-19 as soon as possible upon arrival (within 24 hours) to ensure they are not positive.
- Essential workers should monitor temperature and signs of symptoms, wear a face covering when in public, maintain social distancing, clean and disinfect workspaces for a minimum of 14 days.
- Essential workers, to the extent possible, are required to avoid extended periods in public, contact with strangers, and large congregate settings for a period of, at least, 7 days.

Note that the first bulleted item above indicates that essential workers should seek diagnostic testing as soon as possible upon arrival. It seems logical that if an essential worker receives a negative result from a COVID-19 diagnostic test then they can discontinue quarantine, we are working to confirm with the state that this is the case but **do not have confirmation** at the time of this post.

Farm employees continue to be classified as “essential workers,” this means that farm employees can work during their quarantine period. They are required to maintain a strict routine while at work and employers are well-advised to support and reinforce this working quarantine in order to protect others employees. NYSDOH and NYS Dept of Ag and Markets clearly described the working quarantine protocol in the Interim Guidance for Prevention and Response of COVID-19 at Farms issued on May 27, 2020.

Workers who are considered essential personnel, as described in the Department’s Health Advisory: Protocols for Essential Personnel to Return to Work Following COVID-19 Exposure or Infection, who meet quarantine criteria described above, may be allowed to work in accordance with the Department’s Health Advisory and if they:

- Remain asymptomatic.
- Remain in quarantine when not at work. Workers may be quarantined in their own home or at a location designated by the operator that meets LHD (local health department) quarantine requirements.
- If it is difficult to provide for 6 foot separation between essential workers while in quarantine, essential workers may be quarantined in a recreational vehicle, a motel/hotel room, at home in their own room, etc.

Guidance for Essential Workers Arriving in NY from U.S. States with Significant Community

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- Rely on LHDs and employers to provide essential needs such as healthcare, food, medications, and laundry.
- Undergo temperature monitoring and symptom checks upon arrival to work, and at least every 12 hours thereafter while at work, and self-monitor (i.e. take temperature, assess for symptoms) twice a day when not at work. Operators must have thermometers on site to perform temperature checks.
- Wear a face covering while in the presence of any other individual.
- Immediately stop work and notify their supervisor if they develop ANY symptoms consistent with COVID-19. The LHD may be consulted on next steps as outlined below.
- Testing should be prioritized for essential personnel with symptoms.

COVID-19 diagnostic testing is available for all essential personnel. Contact your local health department for details about how to get the test.

Upcoming Events

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

FLGP Virtual Tailgate Meeting

July 7, 2020 4:30 – 6:00 PM

Join FLGP viticulturist Hans Walter-Peterson (and the occasional guest speaker) for any or all of this year's Tailgate Meetings, held every other Tuesday afternoon during the 2020 growing season. These meetings feature a free-flow discussion of what's been happening in vineyards, timely reminders about important practices, and updates on some of the applied research being done in grapes this year. Tailgate Meetings have been approved for 0.75 NY pesticide recertification credits.

Register for this year's online Tailgate Meetings at

https://cornell.zoom.us/meeting/register/tJwvc-6qpjoiHtS5I2AQssfPXzXe_iKnx4f7

Tuesday Timely Topcis: Winemaking Topic TBD

July 14, 2020 4:30 – 5:30 PM

Speakers: Chris Gerling, Enology Extension, Cornell AgriTech;
Misha Kwasniewski, Penn State University

Enologists Chris Gerling (Cornell) and Misha Kwasniewski (Penn State) will discuss some important winemaking topics that we're sure will be fascinating.

If you have not registered for the Tuesday Timely Topics series of webinars, register at: https://cornell.zoom.us/meeting/register/tJAuf--tpjgiGdQdY3QLFP1g2FHWDfxCbkkp

ENOCERT 101 Certification Course: Basic Viticulture & Enology*

(Formerly New Grower/New Winery Workshop) (NEW Online format!)

August 18-19, 2020 *Register Here!*

This course will feature synchronous sessions from 9:00 AM - 12:00 PM on August 18 and August 19. There will also be pre-recorded lectures that can be viewed on your own time.

Overview: This course will cover the basics of grape growing from the ground up. Through live interactive lectures, participants will understand how vineyard site, climate, and trellising systems impact grape production and quality. Participants will also expand their understanding of production steps for specific wine types. Upon completing this course, attendees will learn how different wine types (white, red, rosé, sparkling) are produced, and the key decisions that need to be made to influence wine style.

2020 GDD & Precipitation

FLX Teaching & Demonstration Vineyard – Dresden, NY					
Date	**Hi Temp (F)**	**Lo Temp (F)**	**Rain (inches)**	**Daily GDDs**	**Total GDDs**
6/24/2020	75.8	59.8	0.01	17.8	737.0
6/25/2020	79.0	59.0	0.05	19.0	756.0
6/26/2020	82.2	59.0	0.00	20.6	776.6
6/27/2020	79.5	60.7	0.34	20.1	796.7
6/28/2020	80.6	68.7	0.00	24.7	821.3
6/29/2020	81.9	65.4	0.00	23.7	845.0
6/30/2020	73.3	64.2	0.00	18.8	863.7
Weekly Total			**0.40”**	**144.6**	
Season Total			**6.54”**	**863.7**	

GDDs as of June 30, 2019: 759.1

Rainfall as of June 30, 2019: 10.59”

Seasonal Comparisons (at Geneva)

Growing Degree Days

	2020 GDD [1]	Long-term Avg GDD [2]	Cumulative days ahead (+)/behind (-) [3]
April	12	63.8	-23
May	261.5	254.4	-3
June	543.1	480.2	+1
July		643.6	
August		592.2	
September		358.3	
October		110.0	
TOTAL	816.6	2502.6	

[1] Accumulated GDDs for each month.

[2] The long-term average (1973-2019) GDD accumulation for that month.

[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

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Precipitation

	2020 Rain [4]	Long-term Avg Rain [5]	Monthly deviation from avg [6]
April	2.54”	2.83	-0.29”
May	1.30”	3.16	-2.16”
June	1.44”	3.60	
July		3.42	
August		3.23	
September		3.53	
October		3.42	
TOTAL	5.28”	23.19	

[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)

COVID-19 Resources

Need information? View the following Cornell CALS and CCE Resource Pages Updated Regularly

General Questions & Links:

https://eden.cce.cornell.edu/

Food Production, Processing & Safety Questions:

https://instituteforfoodsafety.cornell.edu/coronavirus-covid-19/

Employment & Agricultural Workforce Questions:

http://agworkforce.cals.cornell.edu/

Cornell Small Farms Resiliency Resources:

https://smallfarms.cornell.edu/resources/farm-resilience/

Financial & Mental Health Resources for Farmers:

https://www.nyfarmnet.org/

Cornell Farmworker Program

www.farmworkers.cornell.edu

www.trabajadores.cornell.edu (en espanol)

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 http://flgp.cce.cornell.edu.

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

Cornell Cooperative Extension
Finger Lakes Grape Program

Hans Walter-Peterson—Team Leader
Donald Caldwell—Viticulture Technician

The Finger Lakes Grape Program is a Cornell Cooperative Extension partnership between Cornell University and the Cornell Cooperative Extension Associations in Ontario, Seneca, Schuyler, Steuben, Wayne and Yates Counties.

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