

Cornell Cooperative Extension Lake Erie Regional Grape Program



PennState Extension

Route 20 Block -CLEREL- Madonna Martin

Crop Update - April 16, 2020

Building Strong and Vibrant New York Communities Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.



In this Crop Update: Reminders for Important Events

- With a Little Help From Our Friends- Jennifer Phillips Russo
- Small Business Relief- Kevin Martin
- NO eNEWA this Season- Kim Knappenberger
- In the Vineyard -Andy Muza

The Lake Erie Regional Grape Program is a Cornell Cooperative Extension partnership between Cornell University and the Cornell Cooperative Extensions in Chautauqua, Erie and Niagara county NY and in Erie County PA.

Contact Information: Jennifer Phillips Russo - LERGP Viticulture Specialist: jjr268@cornell.edu (716) 640-5350

Kevin Martin – LERGP Business Management Specialist: <u>Kmm52@psu.edu</u> (716) 397-9674 Andy Muza – LERGP Disease and Pest Management Specialist: Aim4@psu.edu

(814) 825-0900

Kim Knappenberger – LERGP NEWA and Vineyard Improvement Program Contact Ksk76@cornell.edu

Kate Robinson – Administrative Assistant Kjr45@cornell.edu

How to join a Zoom meeting video (1 minute): https://www.youtube.com/embed/vFhAEoCF7jg?rel=0&autoplay=1&cc_load_policy=1

Joining and Configuring Audio & Video (1 minute): https://www.youtube.com/embed/HqncX7RE0wM?rel=0&autoplay=1&cc_load_policy=1

Don't forget about Team Virtual Office Hours, Viticulture Hour and Business Management Hour- info in Jenn's section on how to connect.







The Only FRAC Group U6 Fungicide Labeled for Grapes, Cucurbits, Cherries, and Pome Fruit Highly Effective on Powdery Mildew No Cross-Resistance Protectant / Preventative Action



FRAC Group 3 Labeled for Grapes and Cucurbits Controls Powdery Mildew, Black Rot, & Anthracnose Protectant + Curative Activity Highly Systemic

Badge SC Badge Sc



High Quality Copper Excellent Mixing Characteristics Highly Active at Lower Rates Enhanced Crop Safety



Flexibility, versatility & a unique approach for your disease control program EPA registered with tolerance exemption Controls Botrytis & Powdery Mildew



The only FRAC Group 13 Fungicide Labeled for Grapes, Melons, Winter Squash, Gourds, Pumpkin, and Stone Fruit Exceptional Preventative Control of Powdery Mildew No Cross-Resistance Gowan Company 800.883.1844



Jennifer Russo, Viticulture Extension Specialist, LERGP

With a Little Help from Our Friends

I hope that this Crop Update finds you all well and able to find time to continue about your everyday vineyard responsibilities, as well as, adjust for our current way of life during these pandemic times! I know that juggling it all can sometimes be difficult, but I will hold onto the cliché that this too shall pass. Please know that the Lake Erie Regional Grape Program is still here for you. We continue to have our Virtual Office Hours and are expanding the availability for the foreseeable future to accommodate those of you with different schedules during this time. We continue to take phone calls via cell and email is always a great way to reach any of the team members. If you are experiencing issues or have questions in the vines, please reach out and we can address them.

Okay, I am sure that you woke up and looked out the window to a snowing greeting. I don't want you to get too nervous. The buds are still pretty tight at this point and I am including the information from a previous crop update for your review. Note the photo below developed by Terry Bates, it illustrates the progression of a bud into a shoot with corresponding Critical Freezing Temperatures. At this stage, 1.5 to 2.0, there is water in the bud and you can physically palpate, or feel, the bud softening.

Using the photo below, a score of 2.0 is similar to the second bud photo. Note the numbers above the photos. These numbers are the critical freezing temperature where bud damage will occur at that stage. A 2.0 bud falls between 13 and 21°F, indicating that as long as our temps stay above 20°F the primary buds should survive. Luckily, we have been above those temperature limits with the exception of higher elevations around the escarpment last night. Our Versailles NEWA station registered a 19.6°F this morning and my fingers are crossed that the buds are just plain tougher up that way being used to colder temps and that a layer of snow helped to insulate them. Please check in via email (jjr268@cornell.edu), to share your thoughts, concerns, or ask questions.



photo 1. illustration of the progression of a bud into a shoot with corresponding Critical Freezing Temperatures by Terry Bates

The information that I share with you this week comes from my colleagues, Dr. James Meyers, Dr. Juliet Carroll, Dr. Lynn Sosnoskie, Dr. Bryan Brown, and Dr. Toni DiTommaso and is speckled with my thoughts and musings.

Dr. James Meyers, Viticulture Specialist with the Cornell Cooperative Extension Eastern New York Commercial Horticulture Program graciously agreed to add Portland, NY to his software system that interfaces with several weather data services and to generate the information below. The purpose of these reports is to compliment with historical, current, and forecasted weather data that is specific to your vineyard location. The reports aggregate data from Cornell's Network for Environment and Weather Applications (NEWA) stations, Cornell's Northeast Regional Climate Center's (NRCC) high-resolution gridded weather database, forecast information from the National Oceanic and Atmospheric Administration (NOAA), and digital elevation models from United States Geographical Survey (USGS).

He explained that the contents and frequency of the report will be variable as the bugs are worked out, new data sources become available, and feedback comes in. Also, the content will vary throughout the season to highlight relevant details and actionable data. As you read through the information, there are links available to the various data sources. It is my intention to share this with you throughout the season and please feel free to contact me with any questions. I am very thankful for the collaboration with Jim Meyers and the information he shares for you all. I hope that you find it a useful tool to incorporate into your operations.

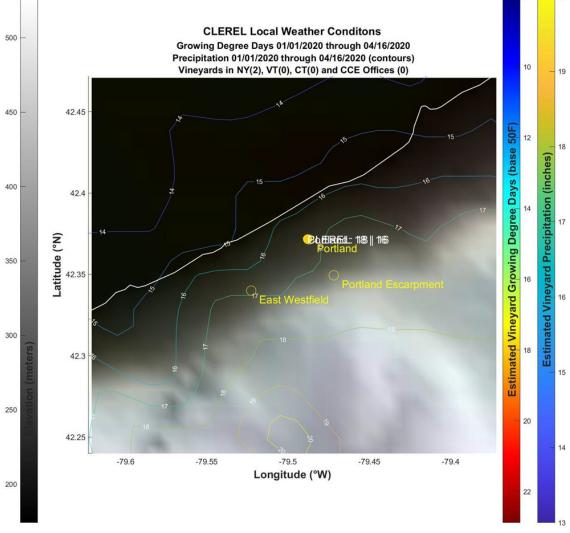


Figure 1. CLEREL Local Weather Conditions with Growing Degree Days, Precipitation, and Latitude/Longitude

Notes: Year-to-date Growing Degree Days (GDDs) are reported as color-coded symbols your vineyard (star), nearby vineyards(circles), and CCE offices (squares). Year-to- date precipitation is reported as color-coded contours. Site symbols are annotated with GDD and precipitation (e.g. 110 | 12 indicates 110 GDDs and 12 inches of rain). Yellow circles are NEWA stations closest to your site. GDDs and precipitation are sourced from Cornell's Northeast Regional Climate Center (NRCC) high resolution gridded data service which calculates GDD using daily high/low temperatures, not hourly. Elevation data is sourced from United States Geographical Survey (USGS) digital elevation model.

NOAA's National Weather Service Forecast by 12 Hour Period

Notes: Weather forecasts are sourced from National Oceanic and Atmospheric Administration's (NOAA) National Weather Service. National Weather Service Forecast (click to link) NOAA's Disclaimer (click to link)

UTC Forecast Time: 2020-04-16T07:37:27-04:00

Today: A chance of snow showers before 11am, then a chance of flurries between 11am and noon. Partly sunny, with a high near 36. Breezy, with a west wind 6 to 11 mph increasing to 18 to 23 mph in the afternoon. Chance of precipitation is 40%. Total daytime snow accumulation of less than a half inch possible.

Tonight: Mostly cloudy, with a low around 33. West wind 11 to 15 mph.

Friday: Snow, mainly after 1pm. High near 36. Southwest wind 5 to 8 mph becoming east in the afternoon. Chance of precipitation is 100%. New snow accumulation of less than one inch possible. Friday Night: Snow likely before midnight, then a chance of snow showers between midnight and 5am. Mostly cloudy, with a low around 31. Northeast wind 8 to 13 mph. Chance of precipitation is 60%. New snow accumulation of less than one inch possible.

Saturday: A slight chance of snow showers between 8am and 11am. Mostly sunny, with a high near 44. Breezy, with a west wind 5 to 10 mph increasing to 15 to 20 mph in the afternoon. Chance of precipitation is 20%.

Saturday Night: Partly cloudy, with a low around 37.

Sunday: A chance of showers. Mostly cloudy, with a high near 52. Chance of precipitation is 50%. Sunday Night: A chance of showers before 2am. Mostly cloudy, with a low around 34. Chance of precipitation is 30%.

Temperature and Precipitation at Local Weather Stations

Notes: Data is derived from hourly weather station data of individual weather stations which has been sourced from Cornell's Network for Environment and Weather Applications (NEWA). Columns T_Data_Pct and P_Data_Pct refer to percent of data available on NEWA station for temperature and precipitation. (e.g. 92.1 means that 92.1% of the hourly data is available and that 7.9% of hourly data is missing). GDD50 **is based on hourly data, not daily** high/low temperatures. GDD50_HL is based on daily high/low temperatures.

Network	Name	Elev_ ft	GDD 50	T_Data_ Pct	GDD50_ HL	Prcp_i n	P_Data_ Pct
'newa'	Portland	700	'57'	'100.0'	'31'	'12.3'	'94.9'
'newa'	Portland Escarpment	1076	'53'	'78.1'	'28'	'5.0'	'61.6'
'newa'	East Westfield	835	'56'	'100.0'	'25'	'7.8'	'98.3'

Table 1. Temperature and Precipitation at Local Weather Stations data derived from hourly weather station data from NEWA

Portland (click to link) Portland Escarpment (click to link) East Westfield (click to link)

Historical Growing Degree Days (base 50)

Notes: Current season accumulation is reported as the thick blue line from January 1 through date of this report. Historical season data is reported between January 1 and December 31 of each year. The legend indicates how many GDDs had accumulated by the same date in previous years and the final total for the year on December 31.

Data is sourced from Cornell's Northeast Regional Climate Center (NRCC) high resolution gridded data service.

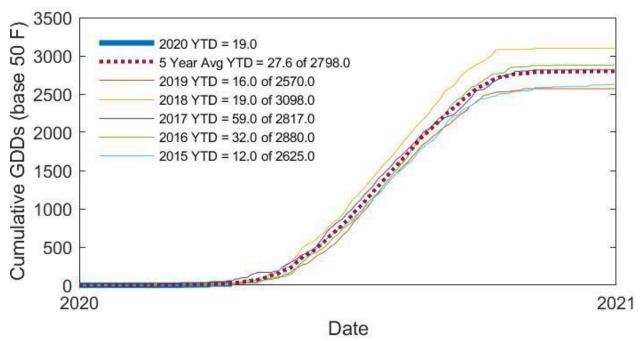


Figure 2. Average Cumulative Growing Degree Days (base 50 F)

7-Day GDD Forecast

Future GDD total accumulations are estimated using temperature forecasts sourced from National

Date	Phenology (GDD base 50F)	Grape Berry Moth Model (GDD base 47F, after wild bloom)	Oceanic and Atmospheric Administration's (NOAA) National
		New Generations (start scouting at 750 and 1470)	Weather Service.
04/14/20	19	0	If you report a date (send me
04/15/20	19	0	an email) for wild
04/16/20	19	0	grape bloom
04/17/20	19	0	near you the
04/18/20	19	0	GBM model will use it, otherwise
04/19/20	19	0	wild bloom date
04/20/20	19	0	will be estimated.

Table 2. 7-Day Growing Degree Day Forecast

Herbicide-Resistant Super Weeds

Author: Juliet Carroll jec3@cornell.edu Published on <u>April 15, 2020</u> on <u>http://blogs.cornell.edu/</u> swd1/2020/04/15/herbicide-resistant-super-weeds/

Are they in New York State? Yes! Where are they? We're going to find out! A statewide weed herbicide resistance screening project will start this year. Dr. Lynn Sosnoskie, specialty crop weed science, Dr. Bryan Brown, IPM weed management specialist, and Dr. Toni DiTommaso, soil and crop sciences, will find out. *Help them to help you!*

Weeds compete with crops for light, water, and nutrients, which can result in yield reductions. Weeds can also interfere with crop production by serving as alternate hosts for pests and pathogens, providing habitat for rodents, and impeding harvest operations. Consequently, growers employ a variety of control strategies, including the application of herbicides, to manage unwanted vegetation. Although herbicides can be extremely effective at controlling undesirable plants, failures can and do occur. Weeds may escape chemical treatments for many reasons including the evolution of herbicide resistance.

Worldwide, there are 512 confirmed cases (species x site of action) of herbicide resistance. With respect to the United States, 165 unique instances of resistance have been documented.

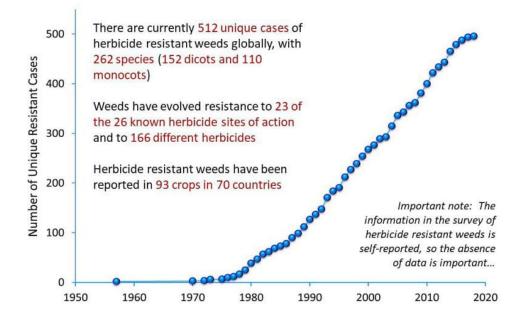


Figure 3. Current status of herbicide resistance, globally, over time according to the International Survey of Herbicide Resistant Weeds (www.weed-science.org)

Current status of herbicide resistance, globally, over time according to the International Survey of Herbicide Resistant Weeds (www.weedscience.org)

In New York, only four herbicide resistance occurrences have been formally reported:

- common lambsquarters (*Chenopodium album*)
- smooth pigweed (Amaranthus hybridus)
- common ragweed (Ambrosia artemisiifolia)
- common groundsel (Senecio vulgaris)
- All described as insensitive to photosystem II inhibitors (e.g. atrazine and simazine)



This, however, does not reflect the current on-the-ground situation in the state. Work done by Drs. Julie Kikkert (CCE) and Robin Bellinder (Cornell) indicates resistance to linuron in some populations of Powell amaranth (*Amaranthus powelli*). Recent studies by Drs. Bryan Brown (NYS IPM) and Antonio DiTommaso (Cornell) suggest that horseweed (*Conyza canadensis*) and waterhemp (*Amaranthus tuberculatus*) populations may be resistant to one or more herbicide active ingredients.

Pennsylvania has nine reported cases of herbicide resistance including glyphosate resistance in Palmer amaranth (*Amaranthus palmeri*), which was recently identified here in NY. While it is tempting to believe that herbicide resistance is a hallmark of agronomic cropping systems, *herbicide resistance can and has developed in orchards, vineyards, vegetable crops, pastures, and along roadsides*.

Photo: Yellow nutsedge (Cyperus esculentus) inflorescence by L. Sosnoskie

Beginning in 2020, we will undertake a screening effort to describe the distribution of herbicide resistance in the state.

You can be a part of this important work. This coming summer and fall, growers, crop consultants and allied industry personnel who suspect they have herbicide resistance are encouraged to **contact Dr.** Lynn Sosnoskie (Ims438@cornell.edu, 315-787-2231) to arrange for weed seed collection.

Indicators of suspect herbicide resistance:

- Dead weeds intermixed with live plants of the same species.
- A weed patch that occurs in the same place and continues to expand, yearly.
- A field where many weed species are controlled but a previously susceptible species is not.
- Reduced weed control that cannot be explained by skips, nozzle clogs, weather events, herbicide rate or adjuvant selection, and calibration or application issues.

Growers can take several actions to stop the spread of herbicide resistant weeds and to prevent the development of new ones.

- 1. First and foremost is scouting fields following herbicide applications and keeping careful records of herbicide performance to quickly identify weed control failure.
- 2. Pesticide applicators should ensure that their equipment is properly calibrated and that they are applying effective herbicides at appropriate rates to manage the target species.
- 3. Whenever possible, diversify herbicides to reduce chemical selection pressures that result from the repeated use of a single herbicide or site of action.
- 4. If possible, incorporate physical and cultural weed control practices into a vegetation management plan.
- 5. Be sure to control unwanted plants when they are small and never allow escapes to set seed.
- 6. Clean equipment to prevent seeds of herbicide-resistant weed species from moving between infested and non-infested sites and harvest areas with suspected resistant populations last.

Juliet Carroll, your friendly SWD blogger, says, "It's that time of year, you've put on your pre-emergent and post-emergent herbicides in the rows or between the rows, and you're keeping an eye on things to make sure those weeds are dying or not emerging. Continue your vigilance, flag suspects, and contact the "Super Weed Team" to collect suspect seeds to help them help you fight herbicide resistance." *This article was contributed by Lynn Sosnoskie, Ims438@cornell.edu, Horticulture, Cornell AgriTech.* Please feel free to reach out with any questions, comments, or suggestions for informational articles at either our virtual office hours on Monday and Thursdays during this pandemic time, or by email at <u>jjr268@cornell.edu</u>. I hope that you all stay safe and healthy and I look forward to when we can gather together again.

Connect With Us!



The extension team has scheduled Virtual Office Hours on Mondays from 10:00 AM to 12:00 PM and Thursdays from 1:30 PM to 3:30 PM. During these hours you can join the already in progress Zoom meeting for as long as you need to get some questions answered. In efforts to reach our grower audience that may not be able to join during the already scheduled hours, the addition of Viticulture Questions on Thursday mornings from 7:30-8:30 AM with Jennifer Phillips Russo and Grape Business Management Questions on Wednesday evenings from 7-8 PM with Kevin Martin will be added starting the week of April 13, 2020. These additional office hours are on a trial basis to assist our growers during this pandemic time, but please remember that we can always be reached via email or cell.

The team consists of Jennifer Phillips Russo, LERGP Viticulture Extension Specialist, Kevin Martin, Business Management Specialist, and Andy Muza, IPM Extension. The team is planning to continue to hold these meetings until we are able to meet face to face again. We encourage all grape growers with questions to come and ask! The growing season will not wait, and we know there will be questions.

To access these Zoom meetings with a PC, Mac, Linux, iOS or Android go to <u>https://psu.zoom.</u> <u>us/j/8757764969</u>. If using an iPhone one-tap (US Toll): +16468769923,8757764969# or +13126266799,8757764969#

Or to call in dial:

+1 646 876 9923 (US Toll) +1 312 626 6799 (US Toll) +1 669 900 6833 (US Toll) +1 253 215 8782 (US Toll) +1 301 715 8592 (US Toll) +1 346 248 7799 (US Toll) Heeting ID: 875 776 4969 International numbers available: <u>https://psu.zoom.us/u/aWuWELGMj</u> Meeting ID: 875 776 4969 SIP: 8757764969@zoomcrc.com



Business Management Kevin Martin, Penn State University, LERGP, Business Management Educator

Small Business Relief

Payroll Protection Loans

Relief for small businesses as part of the COVID-19 inspired CARES Act has been mostly delayed. Step one of the payroll protection program is a preliminary application. Following preliminary applications, formal applications are submitted to major banks, local banks and financial apps, like Paypal. Local banks and credit unions have issued the majority of PPP loans to date. While major banks have taken longer to issue loans, preliminary applications at some institutions have been overwhelming. This has been good for some, not so great for others as systems have crashed and some banks gave up on the program altogether. Funding for PPP has likely been exhausted this week. While it still makes sense to submit a preliminary application, to get in line if additional funding is released, it is likely that funding is not currently available for small businesses that have not already submitted a preliminary application. Some businesses are concerned, based on what they've heard from their banks, that there may only be funding for applications formally submitted.

Supply Chain

The supply chain is creating delays in the procurement of pesticides. So far delays are related to delivery as warehouses and transportation industries socially distance and struggle with the logistics of this strange world. With the snow falling and no pesticide applications being made, there have been no reports of actual shortages yet. Pricing reports have been mixed. The initial forecast of pesticide prices trending lower is holding steady but declines in pricing are less than initially expected. As our local suppliers and growers source from a number of different places, please check in with us if your results vary. (You can reach me via email, text and cell throughout this quarantine period). The need for specialty chemicals in low volumes is usually during the post-bloom period. While our high volume chemicals are currently being delivered; few growers are purchasing things like Movento and Altacor in March. We'll continue to monitor this potential issue.

Labor Supply

In a strange turn of events, anecdotal evidence has been an increase in labor availability over the last three weeks. I suspect this is a result of errors in anecdotal evidence. The good news is, at least for some growers, labor for renewal work is more than adequate.

Please keep in mind that any labor you do have is only allowed to be working because they are deemed essential personnel. Essential personnel must be provided face coverings in NYS. As governors try to unite policies going forward, I would recommend PA growers also source face coverings as well.

Pruning crews, just like paid full time workers are eligible for COVID-19 related sick time and family leave. This leave is paid by the employer and only for specific events related to COVID-19. Check our last crop update for more information.



Vineyard Improvement Program

Kimberly Knappenberger, Viticulture Assistant, LERGP

No eNEWA for the 2020 Growing Season

We regret to inform you that eNEWA will not be available to growers for the 2020 growing season. eNEWA is an email system that allows growers to select the NEWA station(s) nearest their vineyards and then have emails sent directly to their inbox with the latest weather information and disease updates.

Due to restrictions in place as a result of COVID-19, the resources critical to this service that are housed on the Ithaca campus are not accessible to technicians and so the notification service cannot be reliably provided this year.

We do want you to know that NEWA operations are continuing uninterrupted and as always we appreciate any feedback on station operating status. So if you see something that doesn't look right please contact Kim Knappenberger at <u>ksk76@cornell.edu</u>.

As a temporary alternative to eNEWA, Dan Olmstead, the NEWA Coordinator, has developed this one page guide that describes steps to directly access online NEWA reports that are typically summarized in daily eNEWA messages. To directly access the grape disease tools follow this link at http://newa.cornell.edu/index.php?page=grape-diseases. As always, if you have any questions you can contact Kim at ksk76@cornell.edu or try the NEWA help desk at support@newa.zendesk.com.



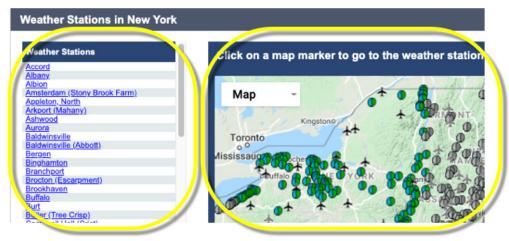
How to access 2020 daily NEWA grape reports in lieu of eNEWA

Send a message to <u>support@newa.zendesk.com</u> to get help from NEWA Help Desk staff at any time regarding the use of online grape tools in lieu of eNEWA email notifications in 2020.

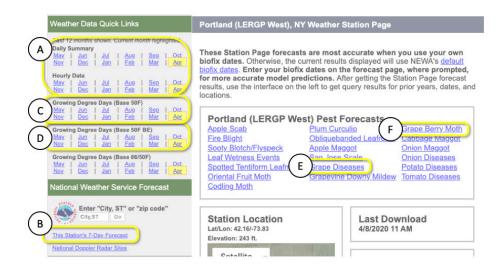
- 1. Go to http://newa.cornell.edu
- 2. In the blue menu bar, navigate to 'Station pages' and choose your state from the dropdown menu.



3. Click a location listed the left-hand weather station list OR click a location on the station map.



- 4. Access NEWA grape tools directly from your chosen weather station page. Use this key to access information normally provided in your eNEWA daily updates.
 - A. Past and Current Weather Data
 - B. 5-day weather forecast
 - C. Base 50F growing degree days (past and current only)
 - D. Base 50F BE growing degree days (past and current only)
 - E. Black rot and Phomopsis Disease Management
 - F. Grape Berry Moth Management



PA Update Andy Muza, LERGP Extension Team & Penn State Extension- Erie County

In the Vineyard (4-16-20)

It is hard to believe that I am talking about preparing to scout for insects in the vineyard when you can see snow on the vines. But Concord buds are starting to swell and this means that the first insects of economic concern will start to appear in vineyards. Both grape flea beetle and climbing cutworms feed on grape buds during the bud swell stage.

<u>Grape flea beetle</u> – these insects overwinter as adults and emerge in the spring to feed on buds of grapevines and Virginia creeper. Adult beetles are small (about 3/16") and described as metallic blue in coloration (Figure 1). Beetles are most active on warm, sunny days and will jump like a flea when disturbed. Populations of grape flea beetle are usually localized around their overwintering sites (e.g., wooded or overgrown areas) around the edges of vineyards.

Feeding by GFB adults can result in entire buds being eaten or enough tissue consumed that the developing bud is destroyed (Figure 2).



Figure 1. Adult Grape Flea Beetle. Photo: https://ecommons.cornell. edu/handle/1813/43101



Figure 2. Flea beetle injured grape bud. Photo: https://ecommons.cornell.edu/handle/ 1813/43101

Scout vineyard rows bordering wooded or overgrown areas throughout the bud swell stage. Examine canes for injured buds and/or presence of adult beetles. If bud injury levels of 2% or greater are recorded then an insecticide treatment is advised. (Grape Flea Beetle fact sheet available at: <u>https://ecommons.cornell.edu/handle/1813/43101</u>).

<u>Climbing Cutworm</u> – about a dozen species of cutworm larvae have been documented in vineyards. These larvae are immature stages of noctuid moths. Climbing cutworm larvae feed on grape buds during the swell stage. A common climbing cutworm found in Pennsylvania and New

York vineyards is the spotted cutworm (Figure 3). These larvae have a brown to gray coloration with darker stripes along the body.

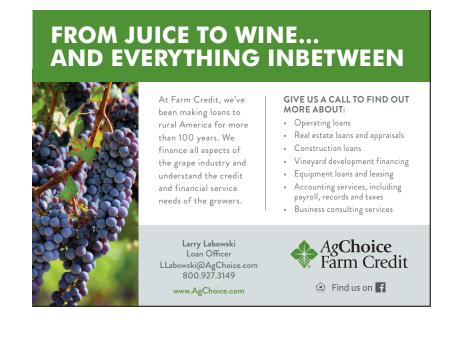
During the day cutworm larvae hide under stones or weeds beneath vines. Larvae climb vines during the night to feed on buds. Vineyards with weed cover under the trellis and areas with sandy soils are at greater risk for injury. Be aware that bud feeding by cutworm larvae can be confused with grape flea beetle injury.

Scout frequently during the bud swell stage. Examine canes for injured buds and if injury is detected then examine weeds/soil beneath vines for presence of larvae. If bud injury levels of 2% or greater are recorded then an insecticide treatment is advised.

(Climbing Cutworm fact sheet available at: <u>https://ecommons.cornell.edu/handle/1813/43085</u>).



Figure 3. Spotted Cutworm Larva. Photo: https://ecommons.cornell.edu/han-dle/ 1813/43085



Other links of interest:

LERGP Web-site:

Cornell Cooperative Extension website:

Cornell CALS Veraison to Harvest Newsletter:

Efficient Vineyard:

Appellation Cornell Newsletter:

