Lake Erie Regional Grape Program

CROP UPDATE
June 10, 2021

Cornell Cooperative Extension
Lake Erie Regional Grape Program

PennState Extension

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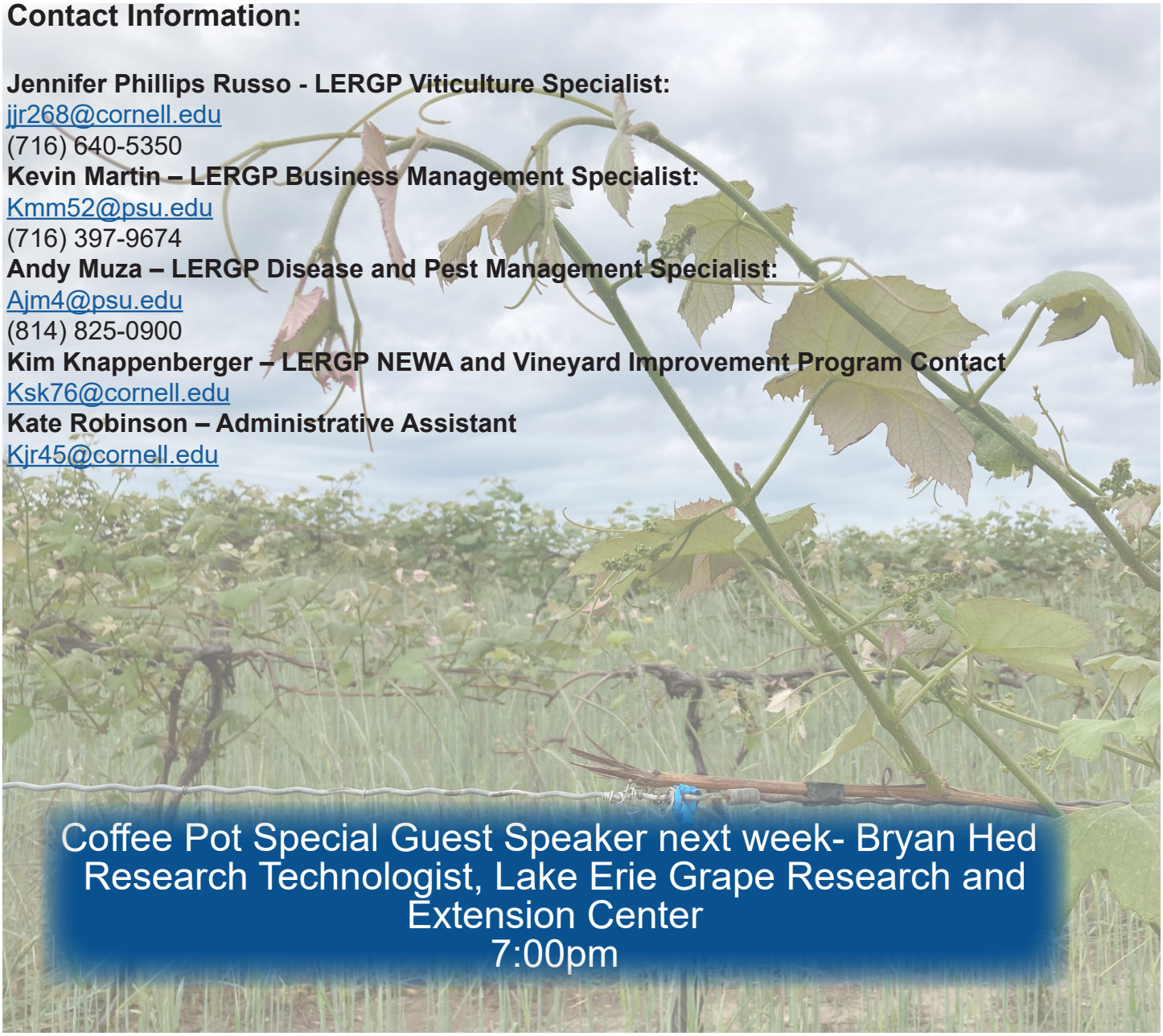
In this copy:

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:
Kmm52@psu.edu
(716) 397-9674
Andy Muza – LERGP Disease and Pest Management Specialist:
Ajm4@psu.edu
(814) 825-0900
Kim Knappenberger – LERGP NEWA and Vineyard Improvement Program Contact
Ksk76@cornell.edu
Kate Robinson – Administrative Assistant
Kjr45@cornell.edu



Business Management

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

Integrating Herbicide and Cover Crop Management for Cost Effective Results

We are starting to see increases in herbicide management costs. Some of you know all to well that 1-2 applications of herbicide do not provide adequate control of weed competition in vineyards. Complicated tank mixes that cost over $100 per applied acre are not a practice I would consider sustainable. Some growers, though, would disagree.

Herbicide costs are now increasing substantially. A few years ago, more frequent applications and a need to apply better materials more often is driving costs up. Now we are seeing increasing costs for materials and more applications. This trend is not universal but when tank mixes exceed $60 per acre sprayed it might be time to consider additional passes. Typical ways to avoid high cost tank mix was a post-emergence program. Relying solely on post-emergence programs is no longer inexpensive and probably not sustainable. This trend and cost saving strategy is typical for under-row management.

With the decline in the effectiveness of round-up, efficient row middle strategies may need to be revisited. One potential to help minimize or avoid the use of high cost materials in row middle management is the use of cover crops. Cover crops do not offer the potential to reduce herbicide applications in situations where growers are applying between 1 and 3 per year. Rather, they offer an option to improve results without adding an additional pass. Particularly where hard to control species get established, some growers have added a late summer or fall application to bring their total number of herbicide application to 4-5. In this scenario, the right cover crop mix offers the potential of superior control with one less pass.

Cover crop mixes being trialed are similar in cost to an herbicide application. Higher end seed mixes with oats, more radishes or even buckwheat range between $12 and $15 per seeded acre in materials. Legumes increase costs but potentially reduce fertilizer use. Easy to kill hybrid crimson clover complicates the economic analysis. It may reduce urea applications by 50%, reduce termination costs but could be more difficult to grow. Understanding effective seed mixes, their primary benefits and potential secondary benefits will be key to the success of moving cover crops into perennially systems in a cost-effective (saving) way.

We continue to work with seed mixes to help define spring cover crop mixes that do not result in undesirable competition with vines. If we are able to delay termination guidelines to the 12” shoot growth stage or later, our ability to reduce the number of passes in row middle management would be significant. The plan is to try both spring seeding of cover crops as well as fall seeding cover crops that over-winter. Different seed mixtures would be focused on their ability to choke out weeds and use less water than traditional bio-mass mixes.

Over the last week I’ve observed some very aggressive cover crops. These mixes include one or more of the following rye grass, medium red clover, grain rye. Some appear to be planted at very high seed rates and are reaching the top wire. On more than one occasion these were observed

on gravel ground. While we are trying to minimize weed pressure, the reason for that is to conserve water. We need to keep berries large for this year and vines large for next year. Given the dry spring we've had these cover crops should be terminated early on gravel. We are a few weeks late for ideal termination. If you have well drained gravel soil, you should terminate most cover crops in the next week. Work does need to be done on less aggressive cover crop mixes. I believe you're still playing a dangerous game in a dry year. Long-term research may prove that less aggressive cover crops do not out-compete grapes for water. Don't stay too dry out there and good luck.

Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

Bloom

On June 7, 2021 the Cornell Lake Erie Research and Extension Laboratory in Portland, NY officially called Concord Bloom. This is seven days earlier than our historical average of June 14th. Please be sure to note your bloom date so that it can help you guide your crop estimations at 30 days' post bloom.

photo 1. Concord clusters in bloom

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: 2021-06-10T05:38:59+00:00
Overnight: Mostly clear, with a low around 66. East wind around 3 mph. Thursday: Sunny, with a high near 77. Northeast wind 3 to 13 mph.
Thursday Night: Mostly clear, with a low around 69. East wind 6 to 13 mph.
Friday: A slight chance of rain showers between 8am and 2pm, then a chance of showers and thunderstorms. Mostly sunny, with a high near 76. East wind 5 to 10 mph. Chance of precipitation is 30%. New rainfall amounts less than a tenth of an inch possible.
Friday Night: A chance of showers and thunderstorms before 2am. Partly cloudy, with a low around 62. Southeast wind 0 to 7 mph. Chance of precipitation is 30%. New rainfall amounts less than a tenth of an inch possible.
Saturday: Mostly sunny, with a high near 79.
Saturday Night: A chance of rain showers. Partly cloudy, with a low around 65. Chance of precipitation is 30%.
Sunday: A chance of rain showers before 2pm, then a chance of showers and thunderstorms. Mostly sunny, with a high near 76. Chance of precipitation is 40%.
Sunday Night: A chance of showers and thunderstorms. Mostly clear, with a low around 62. Chance of precipitation is 30%.

Monday: A slight chance of rain showers before 8am, then a chance of showers and thunderstorms. Mostly sunny, with a high near 73. Chance of precipitation is 30%.

Historical Growing Degree Days (base 50) at CLEREL

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.
The CLEREL cumulative Growing Degree Days (base 50 F) in Portland, NY as of June 10, 2021 are at 508.0, note the thick blue line on figure 1. This total is 52.6 GDDs above the five-year average of 455.4 and the second highest behind 2018.

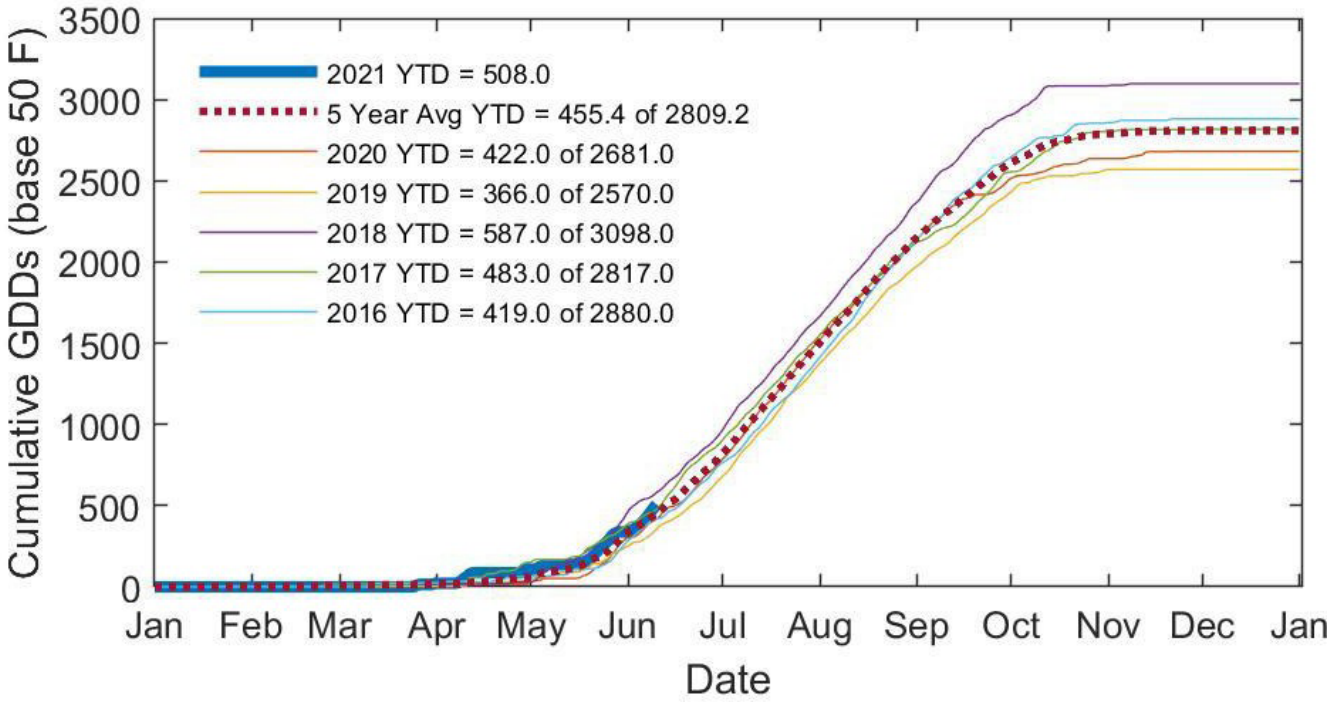


Figure 1. Cumulative Growing Degree Days (base 50F) for Cornell Lake Erie Research and Extension Laboratory in Portland, NY for the last five years

Historical Precipitation (inches) for CLEREL in Portland, NY

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 inches of precipitation 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.
We are still behind all of the last five years in cumulative precipitation for 2021 with a total of 13.9 inches since January 1. 2021, note the thick blue line on figure 2. The five-year average for precipitation on June 10th, is 21.8 inches which is 7.9 inches more than 2021's total. Be mindful to terminate cover crops and weeds that will be in competition with the vine from Bloom to Veraison, especially when precipitation is at a low.

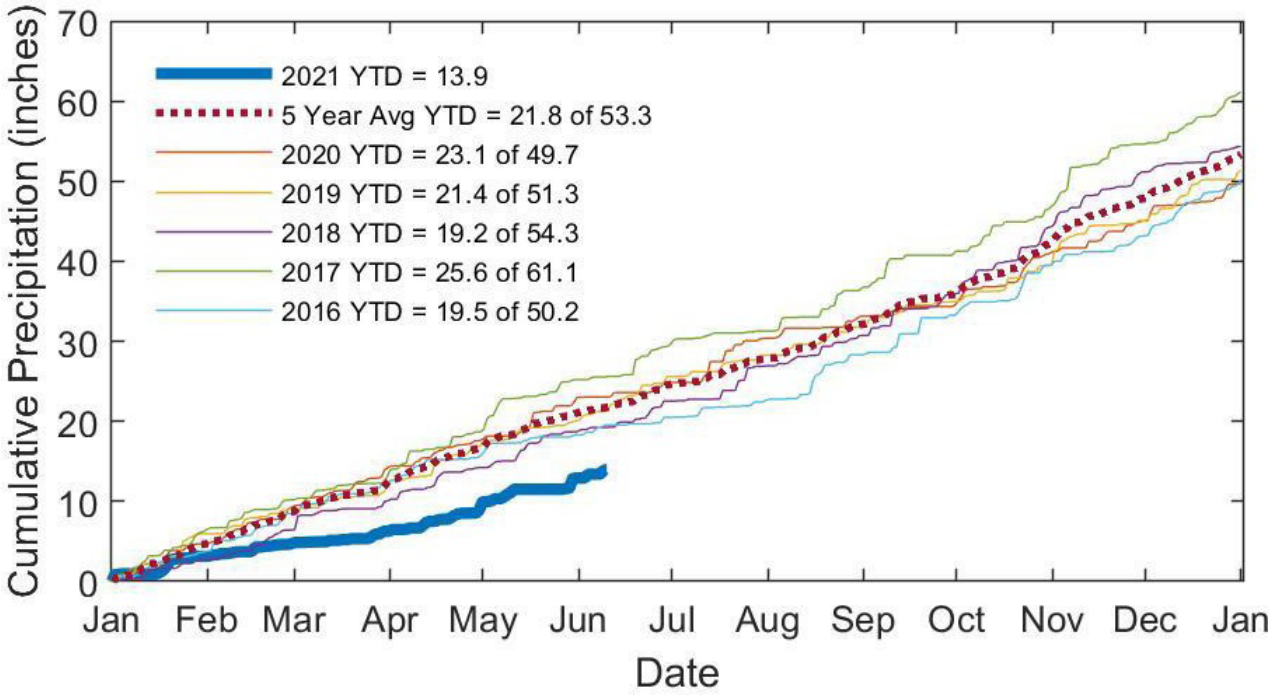


photo 2.Cumulative Precipitation in inches for Cornell Lake Erie Research and Extension Laboratory in Portland, NY for the last five years

Phenological Resources:

- Grape Disease Control, Spring 2021 | *Katie Gold, Cornell University*
- Enterprise Tool for Eastern US Small Vineyard Management | *Cornell University*
- Spotted lanternfly experts debunk myths about the prodigious, pestilent pest | *Amy Duke, Pennsylvania State University*

Regional Resources & Activities:

- ***(Upcoming)*** Innovations towards sustainable viticulture and Enology in a changing world: Session 2 | *Université de Montpellier* | Jun-15

PA Update

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

In the Vineyard (6 -10 - 21) – *Andy Muza, LERGP Extension Team & Penn State Extension – Erie County*

This week at least 17 different vineyard blocks were scouted in the eastern and western portions of Erie County, PA. Bloom was occurring in every Concord vineyard block checked this Monday (6/7/21) from North of Rt. 5 – South of I-90. In Concord blocks, where primary buds were killed by frost, even some clusters on secondary shoots were blooming.

Insects

Rose Chafer – On Monday ((6/7/21) a few rose chafers were found in a Delaware block (Figure 1). On Tuesday, only about 5 beetles were observed in Concord blocks. Usually, beetles emerge about 7-10 days before bloom and feed mainly on the flower clusters. This season beetles are just starting to emerge when Concords are already in bloom. Since the tender flower clusters are no longer available, I expect the potential for any economic losses due to rose chafer will be low this season. But to be cautious, growers should still scout for rose chafers for about another week, at which time most of the beetles start to leave vineyards for other food sources.

Figure 1. Rose chafers on Delaware flower cluster. Photo – Andy Muza, Penn State

Figure 2. Webbing, from grape berry moth larva, in Concord cluster. Photo – Andy Muza, Penn State.

Grape Berry Moth – only a few clusters with webbing (from grape berry moth larvae) were found (Figure 2). According to the GBM model, "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."

Diseases

Powdery Mildew – again this week, powdery mildew was observed on a few Concord leaves in different blocks (Figure 3). More concerning has been finding powdery mildew already on clusters (Figure 4). Although the number of clusters found with powdery is low the numbers are still more than usual and were found before full bloom.

Fruit is extremely susceptible to powdery mildew from immediate prebloom through fruit set. This

is the most critical period to protect from fruit infections. Management programs should be at their peak, emphasizing the use of effective fungicides, full rates, appropriate spray intervals, and superior spray coverage.

Black Rot - The immediate prebloom through early postbloom periods are critical for management of black rot. Keep track of infections events and maintain fungicide protection accordingly. Concords can become infected up to 6 weeks after the last cap has fallen, and *V. vinifera* varieties up through 7 weeks postbloom.

Downy Mildew – Although downy mildew inoculum levels have been low in the Lake Erie region over the last few seasons, Bryan Hed found numerous sporulating lesions on sucker growth in a Chancellor block this week. An effective fungicide for downy mildew in the first postbloom spray is important in the management of this disease.

Phomopsis - Fruit infections can occur from early bloom through the postbloom period, then remain dormant until preharvest. Rachises also remain susceptible during this period. Maintain fungicide protection through pea-sized berry period, especially if the weather is wet during this time.

First Postbloom Fungicide Application – this spray which should be applied within 10 – 14 days of the Immediate Prebloom spray. Again, **DO NOT** stretch spray intervals beyond 14 days during this critical period for protection of the clusters. (Check the NEWA station http://newa.cornell.edu closest to your vineyard blocks for 5-day weather forecasts and for disease models).

Fungicide products which are **highly effective** against Phomopsis, Black Rot, Downy Mildew and Powdery Mildew should be used.

Figure 3. Powdery mildew colonies on young Concord leaf. Photo – Andy Muza, Penn State.

Figure 4. Powdery mildew on Concord flower cluster. Photo – Andy Muza, Penn State.

PA Update

Bryan Hed, Research Technologist, Lake Erie Grape Research and Extension Center

Weather: Our June precipitation has come within two wetting periods: June 2-3 and June 7-8, for a total of 0.49" (dry). We have accumulated about 198 growing degree days so far in June (ahead of average) and we now have 566 gdds as of April 1. The 3-day forecast looks to be mostly dry, but with a chance for thunderstorms on Saturday night (June 12). High temperatures in the 70s over the next several days.

Phenology: Here by the lake we have recorded 50% bloom for Concord on June 9. This is about 5-6 days ahead of average for us here in North East by the lake. For us, this means that Concord bloom began about 515 gdds from April 1 (a little early compared to our long term (22 year) average of 527), and about 44 days from 50% bud break (compared to our average of about 41 days).

Diseases: June rainfall has resulted in two infection periods for all the major diseases. Scouting has revealed relatively little disease so far, but the period around bloom is critical for protecting fruit from all the major diseases.

Scouting for black rot on leaves in the fruit zone is important as it will reveal your risk of fruit infection during bloom and early fruit development. Lesions in the fruit zone would be the result of a May 3-4 infection period. Spores for these early infections on leaves would most likely have come from infected fruit mummies (from last year), either on the ground or in the trellis. These lesions are in prime position to release spores onto developing fruit during rain periods after capfall. If you see black rot leaf lesions in the fruit zone, be warned that first and second post bloom sprays of ziram, and/or sterol inhibitors, will need to be applied in a timely fashion to avoid crop loss from black rot, especially if conditions turn wet. New infections from the wetting periods of June 2-3 and 7-8 will probably not become manifest until early next week, as it generally takes from 10-14 days from infection to symptom expression.

Scout for downy mildew on leaves near the ground, especially sucker growth. "Oil spots on leaves now would be the result of an infection period on June 2-3. Infections from the more recent infection period of June 7-8, will become visible as early as Saturday, June 12. "Downy" sporulation on the undersides of leaves, that coincides with oil spots on tops of leaves, is very diagnostic of this disease.

As we approach the timing for the first post bloom spray, remember that this is the most important spray of the season!! Fruit of all grape varieties are most susceptible to all the major diseases from the time that flower caps come off, to about 3 weeks later. For this reason, do not stretch the interval between the immediate pre-bloom and first post bloom spray beyond 14 days (less is better). If this means spraying again during late bloom, then so be it…spray during late bloom (rather than wait until after bloom) to keep that interval to 14 days or less. This is a no brainer; use best materials you can afford, spray every row, maximize coverage with adequate gallonage per acre, etc.

Best materials for powdery mildew on juice grapes for the first post bloom spray could include Quintec, Vivando/Prolivo, or Endura. Do not rely soley on stylet oil, strobilurins (Sovran or Abound) or sterol inhibitors (tebuconazole or tetraconazole products) for powdery mildew control at this time.

Remember: Teb and tetraconazoles and strobies are great for black rot, but resistance has rendered them too weak on powdery for reliable control of that disease at this critical point in the spray season. After the first post bloom spray, reassess your situation by scouting and closely watching the weather forecast. For wine grapes, you may want to try some of the newer powdery mildew materials that have proven very effective (but will be more expensive) like Luna Experience or Aprovia/ Aprovia Top. All of these contain a FRAC 7 material that is potent against powdery mildew. Luna experience and Aprovia Top also contains a sterol inhibitor, which will provide some extra powdery control, but also control black rot very well. Post bloom Phomopsis and downy mildew can be controlled with a mancozeb product.

For premium wine varieties, now is the time to plan leaf removal in the fruit zone. Leaf removal can be done by machine or by hand and generally provides sizable reductions in bunch rot on rot susceptible wine varieties (Riesling, Vignoles, Pinot noir and gris, Chardonnay, etc). It can even help improve control of other disease as well, like powdery mildew. A preliminary trial we ran last season on several Riesling clones, compared two different timings of mechanized leaf removal (at just before bloom and about two weeks later (about early fruit set)) with no leaf removal. Using air pulse technology to remove leaves, both timings provided for about a 50% reduction in harvest rots, with no reduction in yield. So, timing around bloom didn't matter, but the decision to apply leaf removal resulted in a 50% reduction in rots over not applying it at all. Not only does leaf removal reduce fruit disease (by improving exposure of fruit to light, air, and pesticide penetration), but it improves fruit quality and flavor profiles, and may even reduce manual harvest costs (the clusters are easier to see and remove if you're hand harvesting).

Updates and Information

Kimberly Knappenberger, Viticulture Assistant, LERGP

NEWA

Finally! There is a new Onset HOBO station in Erie County. You can find it on the NEWA website at http://newa.cornell.edu/index.php?page=weather-station-page&WeatherStation=ny_bran, or look for the Brant station when you are on the website. It is located near the corner of Morely and Milestrip roads in Brant and has been reporting data from that area since May 27th. This station has been generously provided to the Lake Erie Regional Grape Program from the New York State Integrated Pest Management program. Dan Olmstead was able to get funding to be able to supply the Lake Erie Region and the Finger Lakes Region each with a new HOBO station to place in an underserved area. These stations are set on a 3 meter tripod and include all of the usual sensors required to report to NEWA: temperature, relative humidity, rain, solar radiation, wind speed and direction, leaf wetness, as well as air pressure.

We are very excited to have this station in Erie County and hope it will be an asset to the growers in that region.

The Grape Commodity Survey is Under Way

This week marked the beginning of the annual Grape Commodity Survey. New York State Ag and Markets in conjunction with Cornell Cooperative Extension's NYS IPM Program and Grape Programs in the main growing regions of New York State – Lake Erie, Finger Lakes, Long Island and the Hudson Valley regions – have set the traps in vineyards and nurseries for the target moths for this year. If you see something like the scene in the photo, that is probably one of these surveys in progress. This year the target moths are European Grape Berry Moth, European Grapevine Moth, and Christmas Berry Webworm. The target moths are set by NYS Ag and Markets who determine which pests need to be included in the survey according to the commodity and the potential damage to that commodity. In addition to those pests, each region is tasked with scouting for Spotted Lanternfly so it can be detected as early as possible. This survey will continue through the growing season and traps will be collected in early September.

VIP

Fast Fact about the Vineyard Improvement Program: Abandoned vineyards are a tremendous source of pest infections to local commercial vineyards. This program is designed to help remove those sources and make that land productive. See the website at https://lergp.com/about-vip or contact Kim at ksk76@cornell.edu.

Information for you

Kate Robinson, Administrative Assistant, LERGP

Coffee Pot Meeting June 16 @ 7:00pm

Please join us at this evening Coffee Pot meeting for discussion and updates with Bryan Hed, Research Technologist, Lake Erie Grape Research and Extension Center, and the rest of the LERGP team too.

Registration Requirements- Please Read!

To receive DEC and PDA pesticide credits, you are required to register for each of the coffee pot meetings you plan to attend. You do this at the LERGP web-site.
You also need to have a camera on for the entire meeting.
Choose the coffee pot meeting you would like to attend-
Click on “view details”
Click on “Register for this event now”
Then send a copy of your pesticide license to kjr45@cornell.edu, In the e-mail include your Date of Birth. This step only needs to be done one time, but continue to register for subsequent meetings.

Registration is open until 8:00am the day of morning meetings and 4:00pm on evening meetings.

Other links of interest:

LERGP Web-site:

Cornell Cooperative Extension website:

Cornell CALS Veraison to Harvest Newsletter:

Efficient Vineyard:

Appellation Cornell Newsletter:

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)