CROP UPDATE
May 27, 2021

Photo-Kimberly Knappenberger

Cornell Cooperative Extension
Lake Erie Regional Grape Program

PennState Extension

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.

CORNELL UNIVERSITY
FOUNDED A.D. 1865

In this Crop Update:

- The Cost of Secondary Control- Kevin Martin
- Vineyard Updates- Jennifer Phillips Russo
- In the Vineyard- Andy Muza
- North East, PA Update- Bryan Hed

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

Coffee Pot Special Guest Speaker next week- Greg Loeb, Dept. Of Entomology, Cornell Agritech

Business Management

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

The Cost of Secondary Pest Control

On the podcast this week Andy discussed the early season secondary pests. Scouting for these pests, if you don't have them, costs next to nothing. It's a great time to be out scouting all sorts of things and spending time in the vineyard executing disease control plans, weed control and last minute trellis repair. In other words, it's the busy season.

Newer insecticides are not always labeled or tested for secondary pest control. The industry primarily relies on Sevin, Danitol and Assail. As an example Leverage 360 is not labeled for Rose Chafer, banded grape bug, or plume moth. So a lot of times if you have an issue you'll end up buying materials that don't work well or at all for GBM anymore.

Current prices for these materials do vary based on supply and quantity. Spot spraying small acreage, while advisable, does have the potential to increase costs per acre.

Assail is about $10 per acre, though higher rates are closer to $20. A non-ionic surfactant that does not cause fruit burn is recommended. A sticker is not recommended. This will increase the cost of Assail. A container is enough to spray 20 or more acres.

Carbaryl prices also vary but for targeting pests like rose chafer cost is $20 per acre at the high rate. High rate is typical for targeting rose chafer.

For secondary pest control, these costs are quite high. Scouting is the best solution to minimize costs. Yield damage tends not to occur in most blocks and in many cases targeted applications along border rows or on top of a sandy knoll may keep costs to a minimum.

Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

Around the Region

The weather this past week has really pushed the growth on the vines. I was out and about and there are primary shoots over 14 inches with six flat leaves out there on the top of some high wires. On average the Concord shoots, in areas without frost/freeze damage, have 3 clusters with the occasional four hanging, while other vinifera and hybrid varieties that I checked were also growing well with two clusters.

I was out scouting for the banded grape bug due to photos from growers that were sent to me. I was unable to find any in the vineyards that I was in, but they are very sneaky and hide and camouflage well in the canopy. I was pleased not to notice any damaged clusters that would indicate feeding but encourage you to look closely at yours. Andy Muza discussed work from Greg Loeb in our most recent podcast and video blog. Be sure to check them out on our website or listen on your device.

Dr. Terry Bates makes his Concord bloom prediction every year based off of Lake Erie's temperature, growing degree days and compared to historical data, and this year his predication is June 8, 2021. There are other bio-indicators matching up with the predicted bloom date as well. The locust trees near the vineyards surrounding Route 20 were in bloom (Photo 1) and they tend to bloom around 7-14 days before Concord grapes. I know that seven days is a big variance, but it all depends on the microclimate that is around your locust tree that can influence bloom earlier or later.

photo 1. locust bloom near a vineyard on Route 20 in Portland, NY on May 26, 2021

There were also signs of wild grape bloom. Once wild grapes are in full bloom (at least 50% of all the flowers are open on the clusters) then Concord grapes usually follow seven days later. Please note that a wild grape cluster near the ground, around a parking lot, or growing in an area of full sun will progress faster in phenology than one that is in the wooded area near your vineyards. The wild grape cluster pictured here was in full sun close to the ground (Photo 2), but I have seen trace bloom near vineyards. Do not use a vine in the Walmart parking lot as your bio-indicator, use one near your vines.

The wild grape bloom date is also the biofix used to start collecting degree days for the Phenology based degree day grape berry moth model found on NEWA http://newa.cornell.edu. While the GBM model on NEWA provides an estimated wild grape bloom date using historical weather and phenology information, it also allows the user to input a wild grape bloom date they observed, which is the best way to ensure the greatest accuracy of the model.

photo 2. grower submitted photo of wild grape clusters in bloom in a full sun, near ground location on May 26, 2021

Bloom doesn't happen at the same time in every area, so, check out your favorite wild grape vine in close proximity to your vineyard site and continue to monitor GBM development as the season progresses.

As far as other things noticed in the vineyard yesterday, there was leaf Phomopsis, powdery mildew, and lots of sap bubbles that some have mistaken for eggs or larva. The first two require your attention, but if you see clusters that look like Photo 3 there is no need to worry or spray in fear of an infestation. This occurs when there is too much turgid pressure in the vines and these little pearls of sap show up.

photo 3.

NOAA's National Weather Service Forecast by 12 Hour Period for Portland, NY

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: 2021-05-27T06:06:16+00:00

Overnight: Mostly clear, with a low around 51. West wind around 9 mph.
Thursday: Mostly sunny, with a high near 63. Northwest wind 5 to 9 mph.

Thursday Night: A slight chance of rain showers between 7pm and 8pm, then a chance of rain. Mostly cloudy, with a low around 47. Northeast wind 5 to 10 mph. Chance of precipitation is 40%. New rainfall amounts less than a tenth of an inch possible.

Friday: Rain. Cloudy, with a high near 56. East wind 12 to 22 mph. Chance of precipitation is 100%. New rainfall amounts between three quarters and one inch possible.

Friday Night: Rain likely before 2am, then a chance of rain showers. Mostly cloudy, with a low around 45. Northeast wind 18 to 22 mph. Chance of precipitation is 70%. New rainfall amounts between a quarter and half of an inch possible.

Saturday: A chance of rain showers. Mostly cloudy, with a high near 58. Chance of precipitation is 40%. New rainfall amounts less than a tenth of an inch possible.

Saturday Night: A chance of rain showers. Mostly cloudy, with a low around 48. Chance of precipitation is 30%. Sunday: A slight chance of rain showers. Partly sunny, with a high near 63.

Sunday Night: A slight chance of rain showers before 8pm. Partly cloudy, with a low around 50.
Memorial Day: Mostly sunny, with a high near 68.

Historical Growing Degree Days (base 50) for 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 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.

At the Cornell Lake Erie Research and Extension Laboratory in Portland, NY the 2021 year to date growing degree days for May 27th, 2021 is 313.0, which is 61.4 GDD above the five-year average of 251.6. We are currently tracking closest to the 22017 year at this point in the growing season which had 321.0 GDDs.

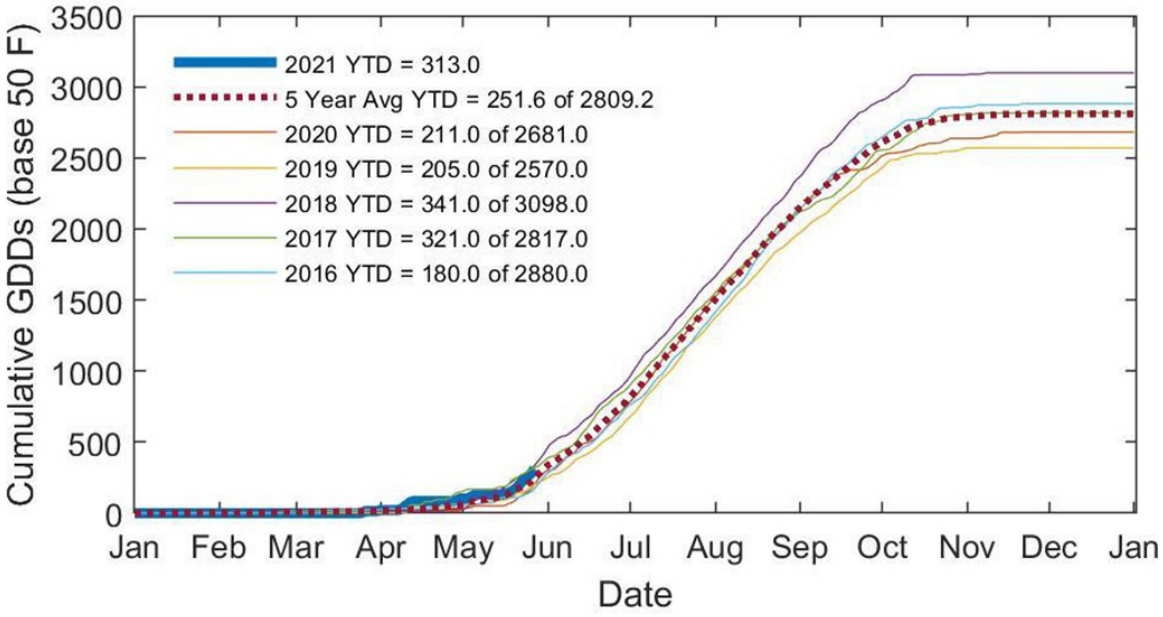

Figure 1. CLEREL historical growing degrees days (base 50) for the last five years

Historical Precipitation (inches)

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.

CLEREL's historical precipitation in inches for May 27, 2021 totals 11.5 which is which is 9.1 inches below the five-year average of 20.6. There is rain in the forecast so I am hopeful to gain some inches this weekend.

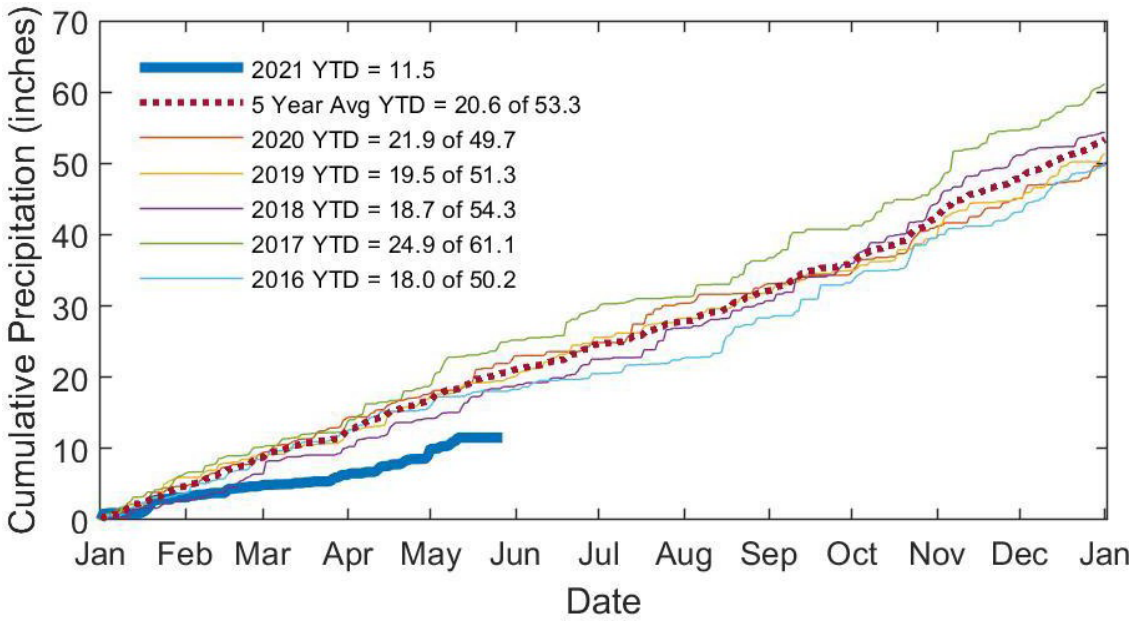

Figure 2. CLEREL historical precipitation for the last five years.

Other Opportunities

Cornell AgriTech
New York State Agricultural Experiment Station
VIRGINIA TECH
PennState Extension

Eastern Viticulture and Enology Forum

Grower and Winemaker Town Hall: Questions From the Field and Cellar

In collaboration with viticulture and enology extension programs at: Ohio State University, University of Maryland, Rutgers University, North Carolina State University, University of Georgia, University of Tennessee, University of Kentucky, Mississippi State University, Texas Tech, Texas A&M, Colorado State University, New Mexico State University, University of Nebraska, Iowa State University, Purdue University, University of Minnesota, Michigan State University, and University of Wisconsin

---

Regional viticulture and enology specialists will present a Grower and Winemaker Town Hall virtual meeting series to give seasonal updates and answer pre-submitted and live questions from grape and wine industry stakeholders.

The structure of these meetings depends on pre-submitted questions.

Use this link to pre-submit questions for viticulture and enology specialists to answer live during the meeting.

Please feel free to submit questions related to any topic by June 1st.
But please see below for the topic area suggestions for our first meeting on June 8th. Updated topic suggestions will follow in forthcoming meeting announcements.

Viticulture focus area: pre-bloom to post-fruit set management (canopy management, fruit zone leaf removal, nutrition, young vine establishment, fruit set, fungal disease management)
Enology focus area: filtration and bottling (types of filtration, filter pad maintenance & usage, pre-bottling sanitation, pre-bottling additions, bottling line cleanliness & quality controls)

There will be a total of four town hall meetings throughout the growing season. Meetings will be held from 3PM to 5PM on the following Tuesdays: June 8th, July 13th, August 10th, and September 7th. The first two meetings will be hosted by Cornell University and the second two meetings will be hosted by Penn State Extension.

Use this link to register and choose your breakout room (viticulture or enology) for the June 8thmeeting.

-Cain Hickey, Beth Chang, and Tim Martinson
Eastern Viticulture and Enology Forum Hosts

PA Update

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

In the Vineyard (5-27-21) –

For the fourth week in a row, I revisited many of the same sites reported on since the Crop Update on May 6, to determine the status of these vineyard blocks. This week, with warmer temperatures for the second week in a row, shoot growth is impressive.

Vineyard blocks **(north of Rt. 5)**

There are minimal levels of freeze/frost injury in these areas. **This week (5/24/21), most of the primary shoot growth ranged between 8" – 15".** A fewer number of shoots were in the 18"-24" range.

Vineyard blocks (**midway between Rt. 5 & Rt. 20**)

As reported previously, there was minimal to low levels of freeze/frost injury (at majority of sites) in these areas. Last week (5/17/21), most of the primary shoots ranged between 3" – 6". **This week (5/24/21), most of the primary shoot growth ranged between 12" – 24".**

Vineyard blocks (**just south of Rt. 20**)

Primary shoots in this area are categorized into 2 groups.

1) Primary shoots (**with no injury to the shoot tips**) – Last week (5/17), shoots were between 4" – 6". **This week (5/24/21), the majority of uninjured shoots were between 7" – 15".** A fewer number of shoots were in the 17"-23" range.

2) Primary shoots (**with freeze/frost injury to shoot tips**) – although still alive, these shoots are only between 3"- 5" (Figure 1).

Figure 1. Frost injured primary Concord shoot, with lateral shoot growth at leaf axil. Photo – Andy Muza, Penn State.

Vineyard blocks (**around Sidehill Road and up the escarpment**)

Vineyard blocks around this area have the highest primary bud/shoot injury levels. Last week, secondary shoot growth ranged from budbreak – 3". **This week (5/24/21), secondary shoots were between 5" – 14".** Tertiary shoot growth was also evident in this area with some tertiaries as long as 4".

Insects – Insects that I observed in vineyards this week; grape plume moth and a few adult grape leafhoppers.

Banded Grape Bug – while scouting this week I did not find any banded grape bug (BGB) nymphs in blocks that were checked. However, Mark Amidon (National Grape Cooperative) reported finding nymphs.

BGB nymphs have the potential to cause economic crop loss. Nymphs have piercing - sucking type mouthparts and feed on rachises, flower pedicels and florets in a cluster. Feeding can result in floret drop, reduced berry set and fewer clusters. **Economic losses can occur when more than 1 nymph per 10 shoots are found.** Feeding by nymphs occur on flower clusters up to bloom. Nymphs progress to the adult stage around bloom. Adults have not been documented as causing economic damage.

Nymphs of these insects emerge in the spring from overwintering eggs. Nymphs are small (1/8 -1/4 inch), have a green coloration with brown–black wing pads and antennae with alternating black and white segments. These insects are often found near vineyard edges and may not be widespread throughout the vineyard. A video with a picture of a BGB nymph and demonstration of scouting techniques can be found at https://www.youtube.com/watch?v=FrEJ6IJB_is.
Insecticides listed in the **2021 New York and Pennsylvania Pest Management Guidelines for Grapes** for management of these pests include: Sevin 80 Solupak, Danitol 2.4 EC, Imidan 70W, and Assail 30SG.

Rose Chafer – No rose chafers were found this week. However, in our region, beetles emerge from the soil and move into vineyards to feed on flower clusters about 7-10 days before bloom. Adult beetles are about ½ inch long, have a light brown body coloration and long, spiny legs. Scouting for rose chafers should begin next week in vineyards with a history of this pest or blocks with sandy soils. Scouting should be conducted frequently for this pest until about 2 weeks after bloom. Infested areas can lose extensive numbers of flower clusters if beetles are not detected early and treated. **If a threshold of 2 beetles per vine is reached an insecticide application is recommended.** Insecticides for management of rose chafer listed in the **2021 New York and Pennsylvania Pest Management Guidelines for Grapes** include Assail 30 SG, Danitol 2.4 EC and Sevin 80 Solupak.

Diseases - Phomopsis lesions are now visible on basal leaves (Figure 2). Leaf lesions are visible as small brown-black spots surrounded by a yellow margin. Although leaf infections are not of concern in further spread of the disease they can serve as indicators of the presence/extent of this disease in the vineyard. Clusters should be protected until Phomopsis spores are depleted (i.e., about pea-sized berry stage).

Figure 2. Concord leaf with Phomopsis lesions. Photo – Andy Muza, Penn State.

This year, Dr. Terry Bates predicts that Concord bloom should occur during the second week in June. Therefore, growers should be prepared to apply the Immediate Prebloom fungicide spray starting by mid – end of next week. This is a critical spray needed to protect rachises, pedicels (berry stems) and berries from our four major diseases (Phomopsis, Black Rot, Downy Mildew and Powdery Mildew). Fungicide products which are **highly effective** against these diseases should be used. Refer to Bryan Hed's Crop Update for additional information and to the **2021 New York and Pennsylvania Pest Management**

Guidelines for Grapes to compare efficacies of fungicides (Table 3.2.2, pages 48 - 50).

Primary and secondary shoots in frost injured blocks will be at different phenological stages. Therefore, clusters on secondary shoots will also have to be protected against diseases during critical growth stages (e.g., Immediate Prebloom, First Postbloom).

Honeyvine Milkweed (HvM) - A persistent, perennial, weed that has gained a foothold in a number of Concord vineyards in the Lake Erie Region. HvM is a twining, perennial vine which grows rapidly and can reach lengths greater than 10 feet. This week, HvM was observed in vineyards around the Rt. 5 area with growth ranging from just emerging to about 9" in length (Figure 3). Begin scouting now, and frequently throughout the season, to identify areas with Hvm. Record areas with HvM on your vineyard maps. Begin spot spraying with glyphosate or glufosinate (check label for restrictions/precautions/rates) using highest labelled rate when HvM is between 1 - 2 feet in length and/ or before vines start wrapping around grape trunks. Be careful not to allow sprays to contact green, grape tissue. Continue spot spraying as needed.

Figure 3. Honeyvine milkweed (9" height). Photo – Andy Muza, Penn State.

PA Update

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

Weather: With the little rain we had yesterday, our May precipitation total is now at 1.2"; way below average. Growing degree days (gdds) now total 254 for the month, with 5 days to go. We should end up above average in gdds, despite almost no heat accumulation during the first half of he month. Almost two thirds of those gdds have been accumulated over the past week. We now have 351 gdds as of April 1. For North East PA, the short-term forecast looks dry today, with 60-80% chance of rain on Friday, the 28th (we may actually get an additional half to three quarters of an inch of rain before the end of the month!). After that, mostly sunny and dry through the weekend.

Phenology: Grapevine growth has exploded over the past week. Our Concord shoots averaged about 9 inches in length and 5 leaves unfolded on the 24th of May (Monday). I suspect they're probably pushing 12 inches now. Wild grapes at our location by the lake have just begun to bloom (on May 26) as the first caps open (trace bloom). Last year trace bloom in wild grapes was on June 4, with the berry moth biofix (full bloom) set on June 8. In Concord, trace bloom last year was about June 16 (twelve days after trace bloom in our wild grapes), with full bloom on June 18. If last year's relationship between wild bloom and Concord bloom is any indication of this year, we will go into trace bloom here by the lake around June 7/8. This is an adjustment from what I estimated last week for our location. Our long term average for trace bloom in Concord here is about June 11.

Diseases: A Phomopsis infection period earlier in May (3-4) has left a little lesion development on the first and second internode areas and leaves at those nodes, of new shoots in some of our Concord and Chancellor vines. However, the damage is very minimal and is not expected to amount to any economic loss.

Rainfall on Friday will likely result in an infection period for Phomopsis, black rot, powdery mildew, and possibly downy mildew. For Phomopsis, the risk is not so much shoot lesions at this point, as basal internodes are now fully or nearly fully elongated at this time and will not show further lesion development. However, inflorescences are vulnerable to cluster stem infections that could result in fruit loss later in the season. For black rot, we're currently concerned about leaf lesions in or a little beyond the fruit zone. Black rot generally takes about 10-14 days to show up after infection has occurred, and so the effects of tomorrow's infection period will become manifest during or shortly after bloom. Leaf lesions in the fruit zone will be in prime position to release spores for infection of fruit during the bloom and early fruit development stages. So, the presence of tan, black rot lesions on leaves in the fruit zone is a BIG RED FLAG. However, with the abundance of clear, dry weather up to now, I don't anticipate big problems with this disease early on. Soon those leaves will be resistant to lesion formation (once they're fully expanded) and we'll shift to controlling black rot only on fruit when bloom begins.

And then there's powdery mildew. For powdery mildew, scout cluster/berry stems, where this disease typically shows up first. The presence of pre bloom powdery mildew colonies on cluster stems and leaves is another red flag for a potentially problematic year with this disease. I don't anticipate high pressure for this disease thus far, as primary infection periods have been few and far between this spring. But temperatures have warmed up, enabling primary infections to churn into secondary cycles, and you should be putting something into the spray tank for this disease for your next spray.

We have not had any infection periods for downy mildew yet, but we are at the '5-6 unfolded leaves' stage that marks the beginning of downy mildew season. Your earlier mancozeb spray should provide some protection to cover you for this disease should tomorrows' rain generate an infection period for downy mildew. The effects of a downy mildew infection period can generally be seen within a week and will appear as yellow oil spots on tops of leaves, especially leaves close to the ground (the pathogen overwinters on the ground). On the undersides of infected leaves, you'll see the classic white, downy sporulation of the pathogen.

The Immediate pre-bloom spray: With vine development taking a great leap forward this past week, we anticipate beginning of bloom at end of the first week in June/beginning of the second week in June. The next spray will be your immediate pre-bloom spray and it should probably go on around mid-next-week or so; getting it on right before bloom is always a challenge. A mancozeb product can still be used for control of Phomopsis, black rot, and downy mildew as long as we're not seeing any bloom yet. For vineyards with heavy damage to primary shoots, you may have shifted to a spray cycle more in tune with your secondaries. If this is the case, your immediate prebloom spray might take place after blooms have already opened for primaries, and in that case you'll have to steer clear of mancozeb products and divert to Ziram instead, for control of Phomopsis, black rot, and downy mildew. For vineyards that are more of a mix of primaries and secondaries, you may have to apply an extra spray this season for primary fruit disease control; one prebloom for your primaries and one for your secondaries, in addition to your post bloom spray(s). And, a good powdery mildew material needs to be added to the spray tank now as well. Materials like Quintec or Vivando would be appropriate for Concord at this time. Revus Top is a viable choice for Niagara, a variety that is less susceptible to powdery, more susceptible to downy, and can tolerate the difenoconazole in that product.

Start thinking about that first post bloom spray at this time too. A great material for powdery in the post bloom position is Endura. It's a FRAC 7 material (a FRAC class that has not been used much at all around here; no resistance issues expected) that is effective on powdery mildew and is very affordable. Remember!!...these next two sprays (or three in the case of damaged vineyards with a mix of primary and secondaries) are the most important of the season. Don't cut corners on materials, spray every row, use optimal gallonage for best coverage..etc. I would steer clear of strobilurins at this time. Several powdery mildew samples I had collected last year from Erie county PA vineyards, turned up positive for the gene that confers resistance to strobilurin fungicides.

Information for you

Kate Robinson, Administrative Assistant, LERGP

2021 Coffee Pot Meeting Schedule

Please join us on Wednesday, June 2 for special guest speaker, Greg Loeb, Department of Entomology, Cornell Agritech. If you have specific questions, submit them prior to jjr268@cornell.edu.

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.

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.

June 2, 2021	10:00am	2021 LERGP Coffee Pot Meeting #5	**Virtual Platform - Zoom**
June 9, 2021	10:00am	2021 LERGP Coffee Pot Meeting #6	**Virtual Platform - Zoom**
June 16, 2021	7:00pm	2021 LERGP Coffee Pot Meeting #7	**Virtual Platform - Zoom**
June 23, 2021	10:00am	2021 LERGP Coffee Pot Meeting #8	**Virtual Platform - Zoom**
June 30, 2021	10:00am	2021 LERGP Coffee Pot Meeting #9	**Virtual Platform - Zoom**
July 7, 2021	10:00am	2021 LERGP Coffee Pot Meeting #10	**Virtual Platform - Zoom**
July 14, 2021	10:00am	2021 LERGP Coffee Pot Meeting #11	**Virtual Platform - Zoom**
July 21, 2021	7:00pm	2021 LERGP Coffee Pot Meeting #12	**Virtual Platform - Zoom**
July 28, 2021	10:00am	2021 LERGP Coffee Pot Meeting #13	**Virtual Platform - Zoom**

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)