LERGP Crop Update
July 17, 2025

Photo credit-
Cara Lanning

Cornell Cooperative Extension
Lake Erie Regional Grape Program

PennState Extension

In this copy:

The next coffee pot meeting is on **Wednesday, July 23** at 10:00am at Schulze Winery, 2090 Coomer Rd. Burt, NY 14028

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Click here to watch Podcasts

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.

Business Management

Andrew Holden, Business Management Educator, Penn State University, LERGP

New York RFSI - Equipment-Only Grants Now Open – DUE JULY 23rd
By: Andrew Holden
Apply: https://www.ffgrowthfund.org/equipment-only-grants

The New York State Resilient Food Systems Equipment-Only Grant is now open and accepting applications until **July 23rd at 5:00 PM**.

This competitive opportunity is focused on funding **equipment for the aggregation, processing, manufacturing, storing, transporting, wholesaling, or distribution of agricultural food products** (excluding meat and poultry products). Eligible applicants may request awards in the amount of $30,000 - $100,000. No match is required for Equipment-Only Grants.
This grant would apply to growers looking to purchase bulk harvest equipment and wineries looking to purchase processing or storage equipment. The Pennsylvania version of this grant just announced the awardees and two growers in Erie County were awarded to buy bulk harvest equipment. A winery in Erie County, PA also received an award to purchase sparkling wine processing and packaging equipment.

Approximately $1,000,000 will be available to eligible applicants. So this grant will be extremely competitive. But, with PA growers receiving awards for bulk equipment, NY growers should be encouraged to apply for this grant.

Reminder: Equipment must be used for post-harvest aggregation, processing, packing, or distribution of eligible agricultural products. Tractors, trucks, sprayers, or other non-specific / pre-harvest equipment is not eligible.

There will be no Match Requirement. Please note that grant funds may go towards pieces of equipment that are more than $100,000; however, the applicant must demonstrate the capacity to pay for the remainder of the equipment cost. For example, if a piece of equipment is $140,000, the applicant can ask for $100,000 in grant funds but must demonstrate that the additional $40,000 is committed or secured at the time the application is submitted.

If you have questions about the grant or the application, please call or text me at (716) 640-2656 or email me at AZH6192@psu.edu.

To Apply:

- Review the RFP for RFSI Equipment-Only Grants.
- Review the pre-application checklist.
- All applications must be submitted via the SMA system at http://ffgf.smapply.us/. No paper applications will be accepted.
- Applicants who have not previously registered in the FFGF SMA Grant Portal will need to register for an account using a verifiable email address.

Applications opened: July 7, 2025
Applications closes: July 23, 2025, 5:00 p.m. ET

What I'm Reading:

- Trump Admin Touts Farm Conservation, Says No Pesticide Crackdown – Farm Policy News
- Farmers: Don't Miss What's in the Big Beautiful Bill – Morning Ag Clips
    - **Estate Tax Relief & Succession Planning**
        - Intergenerational planning becomes more manageable under new tax rules included in the legislation. The bill **doubles the estate-tax exemption** and also makes the **Section 199A pass-through deduction** permanent for partnerships and sole proprietorships.

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Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

In the Vineyard

The Lake Erie Regional Grape Program and the Cornell Lake Erie Research and Extension Laboratory research staff held our Crop Estimation and Fruit Thinning Demonstration Day on July 16, 2025, from 9 AM-12 PM. Dr. Terry Bates and I were prepared to discuss the importance of crop estimation and, if warranted, fruit thinning techniques to bring your vineyard into balance and for sustainable grape production. To achieve vine balance, it's essential to understand the intricate dynamics between vine growth, yield expectations, and business decisions. A balanced vineyard is one where the vegetative growth (leaves) and fruit production (grapes) are in equilibrium, or in a state where vine resources are efficiently used for vine growth and fruit maturation. This event's attendance surpassed our expectations. There was standing room only in our conference room with over 75 in attendance.

A balanced viticulture model is crucial. Season-to-season fluctuations can upset the overall health of a vineyard, as we saw in 2024. We touched on how last year's frost created unexpected fluctuations, prompting the need for strategies to balance out these effects of vines that were unbalanced in 2024 with low yields. This demonstration day started inside classroom style, where we walked growers through the crop estimation process, discussed how to utilize either the Crop Estimation Guide and Table or Dr. Terry Bates' Concord Crop Estimation Calculator, answered grower questions on how-to or why, and discussed fruit thinning decision making and techniques. It was our intention to aid growers in adopting a forward-thinking mindset that prioritizes consistent vine health and uniform yields will not only stabilize profits but also foster sustainable practices in viticulture.

Terry and I discussed the importance of fruit thinning in vineyards, particularly for overcropped vines. Terry explained that thinning involves carefully removing fruit to balance vine growth and improve fruit quality. He emphasized that proper machine setup and gentle handling are crucial to avoid damaging vines. We discussed different types of harvester machines and ways of achieving a gentle and effective approach to remove fruit and bring vines into a more balanced state. Dr. Bates outlined that accurate crop estimation involves two key aspects: properly estimating crop on sample vines by clean picking and weighing fruit at 30 days after bloom (or using the calculator to input how many days after bloom that you clean picked), and reminded the attendees that if the end goal is to remove 3 tons/acre of mature fruit, that you only need to remove 1.5 tons/acre at 30 Days After Bloom (DAB) because the berries are at half of their final berry weight at that time. Terry emphasized that balanced Concord and Niagara vines should maintain a Ravaz index between 10-15 for balanced vines. Please watch the recorded video below if you missed this outreach event or if you would like to refresh the information that was presented. After the classroom style discussion, attendees walked into our research vineyards to watch a crop estimation demonstration followed by how to dial in your harvester and thinning technique to obtain the results that meet your individual goal. It was our hope to demonstrate these techniques, encourage attendees to try it in their blocks, and reach out with questions. Click Here to View Recording of Classroom Portion of the Meeting.

If anyone is interested in learning more about the information that was presented during this Crop Estimation and Fruit Thinning Demonstration Day, please reach out and we will gladly provide more information.

Classroom style presentation before outdoor demonstration

Crowd gathering to witness the Crop Estimation and Fruit Thinning Demonstration

Dr. Terry Bates Demonstrates Crop Estimation Techniques

Dr. Terry Bates, Jennifer Phillips Russo, and the Monarch that was interested in attending.

SURVEY: We Need Your Input!

USDA's Office of Pest Management Policy (OPMP) is requesting your participation in a survey on the use of targeted pesticide application equipment and the incentives and barriers to adoption. The questions in this survey are focused on growers' use of targeted spray technologies for chemical pesticides (for example, See&Spray™, Greeneye™, SmartSpray™ and others). Targeted pesticide application technology has the potential to control weeds and other agricultural pests while reducing the overall amount of pesticide used.

Who we want to hear from: Agriculture professionals with knowledge of the barriers and incentives to adopting targeted pesticide application.

Why your input matters: It is important for regulators to understand which crops, regions, and scenarios may benefit the most from the use of targeted pesticide application equipment, what factors could increase adoption, and what factors may prevent adoption.

Participation in this survey is voluntary, and your responses are anonymous. The survey will take approximately 15 minutes to complete and can be saved and re-entered if you are interrupted while responding.

The survey will be open until Monday, July 28th. We greatly appreciate your participation.

If you have any questions or concerns, you can contact us at SM.OPMP.Pesticides@usda.gov

To participate in this survey, click on the link below:

https://usdaopmp.gov1.qualtrics.com/jfe/form/SV_blbLXVN2QEt59no

PA Update

Megan Luke, Penn State Extension Viticulture and Tree Fruit Educator

Insect and scouting update

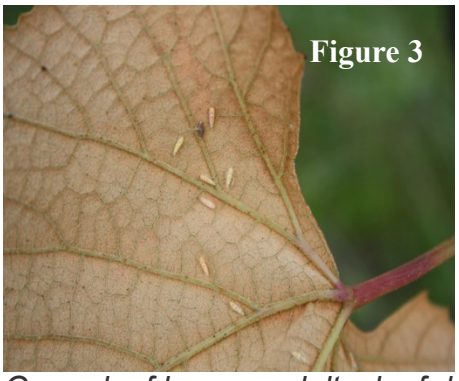
As per Kim's updates this week, most areas are quickly approaching the 1620-degree day marker for grape berry moth- check out Kim Knappenberger's article for more information on NEWA models regarding this pest.

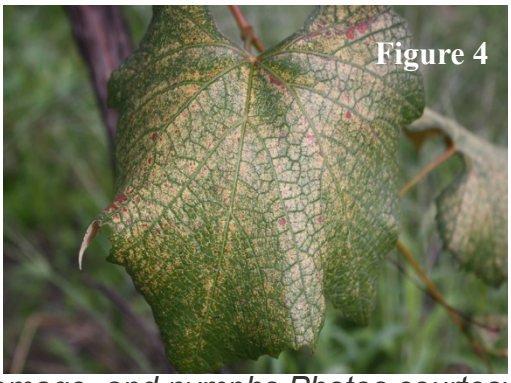
Grape berry moth (GBM): The primary insect pest of concern at this time of year is of course grape berry moth (GBM) (Figure 1). At this time, damage is visible as small holes in berries with a purplish discoloration and sometimes a split in the skin with frass or webbing (Figure 2). In warm years and at high-risk sites, growers need to continue chemical control on a 10-to-14-day interval from mid-August to mid-September. This is due to the fact that while our degree-day model can predict an average hatch date for GBM larvae, this event is, in reality, spread out over several weeks for each flight. That being said- it is a good idea to choose materials that have some staying power on your vines to provide coverage beyond a singular event. Materials that are short acting such as zeta-cypermethrin (Mustang Maxx, etc.) are only efficacious for 1-2 days. If you are looking for a pyrethrin insecticide that has a longer coverage period, you might want a material like bifenthrin which lasts a week or more under optimum conditions. Reminder that grape berry moth has exhibited resistance to danitol in the Finger Lakes region! There are several other classes of insecticide that can be used, be mindful of your rotation and your pre-harvest intervals if you have any early ripening wine grapes in your acreage.

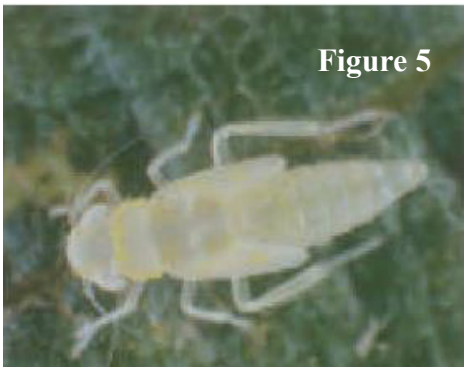
Remember when scouting that the goal is to get a handle on potential damage levels and whether you are exceeding economic thresholds. For Concord grapes, if the percent of clusters that show some GBM damage to berries is **greater than 6% at second flight** and **greater than 15% at third flight**, then a treatment is recommended.

Grape Berry Moth Larvae and Damage Photos courtesy of Penn State Extension, Megan Luke

Grape leaf hopper: Another pest that may become problematic in late July is the grape leaf hopper (Figure 3). If you see stippling (white dots on leaves caused by leafhopper feeding) throughout the vineyard block, scouting should be conducted to determine if an insecticide treatment is recommended (Figure 4). Sampling for leafhoppers is focused on the abundance or quantity of first-generation nymphs. Check four different areas in the vineyard (two exterior and two interior). At each area, look at five lower (basal) leaves (leaves #3-#7 when counting from the base of the shoot) per shoot on five different shoots at each location and check for leaf feeding. If no damage or minimal injury is observed, proceed to the next sampling site. If moderate to heavy leaf stippling is observed, then begin counting nymphs on the undersides of leaves. If a threshold of five nymphs/ leaf is reached, then an insecticide application is recommended.







Grape leaf hopper adults, leaf damage, and nymphs Photos courtesy of Penn State Extension, Andy Muza

Japanese beetles: Finally, many folks have issues with Japanese beetles in the vineyard and overall landscape in the mid- to late-summer. While these pests can be quite destructive to the foliage of plants, they are unlikely to cause enough harm to vines to warrant treatment in most cases. However, if you are choosing an insecticide for GMB or leafhopper control, that material should knock down the number of Japanese beetles as well.

Be aware of your rotation of chemistries throughout the growing season. Use these links to check your materials before the application:

Mode of action (MOA)- This is the method that a specific product uses to kill a pest. Every pesticide on the market has a code for the mode of action. When you rotate your products, you should choose products with different modes of action. The standard recommendation is to rotate between three products with different modes of action. When a pest population becomes resistant to a specific product, it is likely to be resistant to **all** products with that mode of action.

Modes of action for fungicides can be found here: FRAC

Modes of action for insecticides can be found here: IRAC

Modes of action for herbicides can be found here: HRAC

If you suspect that a specific material is losing its effectiveness in your vineyard, contact us to assess your program. Spray tank pH, spray coverage, and tank mix contents can play a role in the effectiveness of a spray application. In the case of true resistance, it is important to document cases so that research can be conducted into how widespread an issue may be. Documenting resistant pest populations early is critical to retaining the effectiveness of our chemistries. Please help us guide the research accordingly!

Lake Erie Summer Produce Meeting

July 24, 2025

5:30 dinner, 6:00-8:15 meeting

MCR Farms

11086 Brant Reservation Rd, Brant, NY 14027

Must pre-register for dinner by calling CCE Erie at 716-652-5400 by NOON on 7/23.

DEC credits available: 0.5 CORE plus either 0.5 Fruit or 1.0 Vegetable, or 1.5 in 1a

5:30 Pizza & wings dinner sponsored by Nutrien Ag Solutions.

6:00 Project Opportunities with the Erie County Soil & Water District – Allen Young

Numerous programs exist for supporting conservation upgrades across soil improvement, water protection, energy efficiency, and other natural resource-related concerns.

6:15 Potato pest, disease, and variety trial results - Margie Lund, Cornell Vegetable Program

There's a new tool for managing Colorado Potato Beetles! Margie will discuss how best to use Calantha in a spray program. She'll also go over what diseases are popping up and how to stop them. Results of our 2-year tablestock variety trial will also be available.

6:45 Making the most of older or home-made sprayers – Megan Luke, Lake Erie Grape Program

We'll do hands-on work on how to get the best performance out of sprayers that have been around the block and practice optimizing homemade equipment. It's important to keep active sprayers in good condition, so you can be confident that your sprays are on-target, effective, and compliance with labeled rates and drift avoidance language.

7:15 Field Walk - Elizabeth Buck, Cornell Vegetable Program

Sweet corn pest management, tomato bacterial disease control, troubleshooting & responding to herbicide failures, fungal prevention in melons and cukes, and woodchuck control tactics.

7:45 Managing disease concerns in table and wine grapes – Megan Luke

Table and wine grapes can be tricky to manage foliar diseases in. We'll walk a vineyard and discuss cultural and chemical controls, which can be variety-specific!

8:15 Adjourn. Qualifying attendees pick up DEC credits.

DATE:
August 12, 2025

TIME:
9:00 a.m.-5:00 p.m.

LOCATION:
Quarry Hill Winery & Orchard
8403 Mason Rd #2
Berlin Heights, OH 44814

REGISTRATION COST:
Early Registration: $45 per person until July 1

Late Registration: $60 per person July 2 until August 1

New Sprayer Technolgies and Best Practices: Vineyards and Orchards

This workshop will feature presentations on best spraying practices using conventional sprayers and new sprayer technology, including spray drones and Intelligent sprayer units. The afternoon will provide field demonstrations showing adjustments to improve effectiveness of conventional sprayers as well as sprayer operation and calibration demonstration. This workshop is being developed by OSU, MSU, and PSU Extension Specialists and the USDA-ARS Application Technology Research Unit. Registration is required. Please see the agenda for program details. Lunch and workshop materials are included with registration.

REGISTER AT GO.OSU.EDU/SPRAY2025

PennState Extension

The Ohio State University
College of Food, Agricultural, and Environmental Sciences

Michigan State University | Extension

Updates and Information

Kimberly Knappenberger, Extension Support Specialist, LERGP

NEWA Location	Wild grape bloom date*	DD total on 7/16/25	Forecasted DD for 7/21/25
Burt (NYS Mesonet)	6/9/25	950	1088
Newfane (Chateau Niagara)	6/5/25	1067	1205
Ransomville	6/3/25	1151	1285
Lockport	6/3/25	1138	1269
Brant	5/29/25	1191	1314
Versailles	5/30/25	1131	1256
Hanover	6/4/25	1097	1224
Silver Creek (Route 5)	6/4/25	1088	1218
Silver Creek (Double A)	5/30/25	1188	1315
Dunkirk (Route 5)	6/4/25	1075	1203
Sheridan	5/29/25	1195	1323
Sheridan (Liberty)	5/31/25	1174	1302
Forestville	6/3/25	1116	1244
East Fredonia	6/4/25	1086	1214
Fredonia (NYS Mesonet)	6/4/25	1073	1203
Brocton Escarpment	6/3/25	1106	1233
Portland/Portland LERGP West	6/3/2025	1115/1139	1244/1273
East Westfield	6/4/25	1076	1207
Westfield	6/3/25	1117	1245
Westfield (South)	6/3/25	1124	1253
East Ripley	6/2/25	1153	1282
Ripley	6/3/25	1140	1272
Ripley Escarpment	6/3/25	1116	1248
Ripley State Line	6/3/25	1131	1265
North East State Line	6/4/25	1075	1200
North East Escarpment	6/3/25	1118	1243
North East Sidehill	6/3/25	1107	1232
North East Lab	6/4/25	1082	1214
Harborcreek	6/2/25	1157	1294
Harborcreek Escarpment	6/4/25	1055	1185
Lake City	6/2/25	1139	1272
Lake City (Mason Farms)	6/3/25	1130	1262

Table 1. Phenology-based Degree Day model results for Grape Berry Moth by NEWA station location in the Lake Erie Region. *Estimated date provided by NEWA website

On the NEWA website the pest status is listed that the second generation larvae are protected within berries and completing their development. The management strategy for now states that the most effective time for treatment of second generation grape berry moth is over. Prepare to scout all vineyard blocks for grape berry moth damage when DD accumulation reaches 1470-1620 DD. During scouting, determine if the number of damaged clusters from previous generation exceeds the treatment threshold of 15%. If above threshold, control measures should be applied starting at 1620 DD.

Erie Horticultural Society Chicken BBQ Meeting Agenda- 2025

Location: Gravel Pit Park, 10300 W Main Rd, North East, PA 16428
Date: Wednesday, July 30th 2025
Time: 4:00 PM- 7:00 PM

A three-hour chicken BBQ and meeting with two core credits and one category credit in the afternoon, providing growers with updated information and research in juice and wine grape production, as well as best practices for pesticide application. Registration is free, and dinner will be provided.

- **4: 00 PM Start:** Equipment show and vendor tables
- 4:30 PM (30 minutes) 1 core recertification credit
  - **Title:** "Worker Protection Standard- What does compliance look like?"
  - **Speaker:** Joni Davis
  - **Description:** Inform-Protect-Mitigate. The whole reason for the regulation is to make sure those who work for you know what they are being exposed to, how to protect themselves from that exposure, and what to do if they are exposed to pesticides while working on the farm. During this talk, you will learn what it takes to gain compliance and how to maintain it year after year.
- 5:00 PM (30 minutes) 1 category recertification credits
  - **Title:** "Update on vineyard weather stations and insect pest research"
  - **Speaker:** Kim Knappenberger and Flor Acevedo
  - **Description:** Discussion of the benefits of hosting weather stations within the vineyard, including degree day models and infection period estimation, and updates on management strategies for grape berry moth and spotted lanternfly.
- 5:30 PM (30 minutes) 1 core recertification credit
  - **Title:** "Pesticide best practices and legal changes to labels for the coming growing season"
  - **Speaker:** Megan Luke
  - **Description:** Brief update regarding label changes to pesticides commonly used in grapes (ziram, captan, mancozeb), and overview of upcoming changes, including use of the EPA's Mitigation Menu and the Bulletins Live! 2 website.
- 6:00 PM (Dinner)

- 7:00 PM **End**

This is a FREE Event but you **MUST REGISTER !**

REGISTER ONLINE HERE

or call Katie at

716-792-2800 ext 201

PA Update

Jessica Clippinger, Lake Erie Grape Research and Extension Center

Downy Mildew, Powdery Mildew, Black Rot, Botrytis Pre-closure Spray

While the last couple weeks at the PA station in North East have been relatively dry, powdery mildew nolonger needs rain to facilitate primary infections and is continuing to infect leaves on a daily basis (Concord berries are resistant, Vinifera berries may still have one more week of susceptibility) due to high humidity. Downy mildew has been continuing to spread with dew formation despite the low rain levels. It is important to scout for diseases and pest often during midsummer so that small diseases problems can be stopped before they progress into BIG disease problems. The main diseases of concern midsummer are downy mildew, powdery mildew, and black rot. For Vinifera with tight clusters, it is time to consider a Botrytis spray just prior to bunch closure.

Figure 1. Downy Mildew. Photo by Jessica Clippinger

Downy Mildew:

We have been hearing of downy mildew problems in local vineyards, particularly vinifera, hybrids, and Niagara. For these susceptible varieties, berries do not acquire resistance to downy mildew until about 3 weeks after bloom (we are approaching 3 weeks here at the lab), but berries can still be infected until 4 or 5 weeks after bloom via pedicel infections. Leaves of susceptible varieties never become highly resistant to infection and even older leaves can become heavily infected when disease pressure is high. Under favorable conditions epidemics can defoliate vines if not managed properly.

If you find that downy mildew has taken hold in your vineyard at moderate to high levels, then 2 sprays of copper about 10 days apart is a good approach to reduce infections. Applying single site inhibitors during high infection periods can rapidly promote resistance development. In 2023 and 2024, high levels of downy mildew resistance were found to stobilurins (FRAC 11: Abound, Flint, Pristine, Sovran, Quadris Top, Topguard EQ), carboxylic acid amides (Revus, Revus Top), and phosphorous acid (ProPhyt, Phostrol, Rampart, Reliant) in the Lake Erie region. Therefore, it is no longer recommended that these products be solely relied upon for downy mildew control. Spray options for downy mildew include the multi-site inhibitors that are not prone to resistance development: (mancozeb (note 66-day preharvest interval), captan(do not apply with stylet oil), and copper (note that these can be washed off in heavy rain events) and single site inhibitors: Ridomil (FRAC 4: mefanoxam), Ranman (FRAC 21: cyazofamid), Zampro (FRAC 45 and 40: ametoctradin and dimethomorph), which provide good to excellent control of downy mildew but are all prone to resistance development. These should not be used more than twice in a season. But they can be rotated to help delay resistance development. If disease pressure is low, biologicals such as Howler EVO or Theia could be included within a conventional fungicide rotation.

Figure 2. Powdery Mildew. Picture by Jessica Clippinger

Powdery Mildew:

Fortunately, Concord fruit is immune to powdery mildew as we are past 2 weeks after fruit set. For those expecting a large crop, protecting leaves may help to ensure minimum brix levels are achieved as well as reduce overwintering inoculum for next year.

Vinifera are considered resistant 3-4 weeks after bloom and we still have about a week to go. Leaves remain susceptible throughout the season. Powdery mildew fruit infections at this time can contribute to bunch rots later in the season. With temperatures in the 70s and 80s and high humidity, every day is an infection period.

Some very effective options are Endura(boscalid), Gatten(flutianil), Quintec(quinoxyfen) and Cevya (mefentrifluconazole: don't use with stylet oil on Concord as it can burn leaves). Sulfur is a good powdery mildew tank mix for Vinifera (but is phytotoxic to Concord and should not be sprayed within 2 weeks of an oil spray). Nutrol(potassium salt) is another good tank mix option that provides moderate post-infection powdery mildew control. There is possible powdery mildew resistance to Vivando (metrafenone), therefore it is not recommended for use. Strobilurin resistance, however, is confirmed and will provide little to no control of powdery mildew. As a general rule of thumb, (determined from Bryan Hed's work) newer fungicides (Endura, Cevya, Gatten) perform better than older fungicides (Torino, Quintec, Tebuzol) and can ripen a larger crop. If disease pressure is low and varieties are not too susceptible to powdery mildew, Harvestmore and biologicals could be included in a powdery mildew fungicide rotation. Biologicals include: Howler EVO, Theia, Ecoswing, and Stargus.

Black Rot:

Concord fruit are nolonger susceptible to infection at 5 weeks post bloom (we are at about 4.5 weeks now). Vinifera are very susceptible until 3-5 weeks post bloom and are not immune until 6 or 7 weeks post bloom. If there is no visible disease through 4 weeks post bloom, then you may be able to end black rot sprays at 4 weeks post bloom. If you see black rot in your vineyard now, then those infections can provide inoculum for continued infections warranting further sprays. Spray options include strobilurin fungicides (FRAC11: Abound, Flint, Pristine, Sovran, Quadris Top, Topguard EQ), which are very good protectants but provide little postinfection control (apply before rain or infection period). For post infection control, where black rot has already caused infection, DMI fungicides (FRAC 3) are very effective at stymieing an existing infection and can provide post infection activity up to 3 days after the start of infection. These include difenoconozole products (NOT for use on Concord: Aprovia Top, Revus Top, Quadris Top, Inspire Super), flutriafol products (Rhyme, Topguard EQ), as well as Mettle (tetraconazole), Cevya (mefentrifluco-

Figure 3. Black Rot. Picture by Jessica Clippinger

nazole, don't apply with stylet oil) and Rally (myclobutanil). Miravis Prime (FRAC 7, pydiflumetofen) also provides good black rot control and does not wash off. Mancozeb (and Ziram if you have it) are good protectants but are prone to washing off in heavy rains.

Botrytis pre-closure spray

Botrytis cluster infections are not often not visible until after veraison or just before harvest, but latent infections that occur around bloom or later can remain dormant until conditions are favorable for disease development. Cultural practices that loosen clusters and open up the fruit zone to air and spray penetration can greatly reduce disease development. Leaf removal is most effective when applied shortly after fruit set, and in very susceptible varieties with tight clusters, a second leaf removal midseason may be helpful. Good control of powdery mildew will also help control Botrytis as powdery mildew infections make berries more susceptible to Botrytis infections. Fungicide applications are recommended just prior to berries touching or bunch closure (which is soon for susceptible varieties) to achieve fully berry coverage. There are 7 FRAC groups (FRAC 2, 7, 9, 11, 12, 17, 19) labeled for Botrytis control providing lots of options for sprays but all are prone to resistance development. Therefore, care needs to be taken to develop a fungicide rotation that rotates different FRAC groups and does not use fungicides within the same FRAC group more than twice a season. This is because fungal populations resistant to one active ingredient in a FRAC group are also resistant to all other active ingredients in that same FRAC group. Here is a breakdown of products by FRAC group (Note: some products appear in two FRAC groups due to multiple active ingredients, Pre harvest intervals (PHI) provided):

Figure 4. Bunch Rot. Picture by Bryan Hed.

(see next page for chart)

Jessica Clippinger
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Lake Erie Regional Grape Research and Extension Center
662 N. Cemetery Rd
North East, PA 16428

Table 1. Botrytis Fungicides. Rotate between FRAC groups to reduce resistance development.

FRAC Group	Product	PHI (days)
2	Rovral	7
	Meteor	7
7	Endura	14
	Luna Experience	14
	Luna Sensation	14
	Pristine	14
9	Vangard	7
	Scala	7
	Switch	7
	Inspire Super	14
11	Flint Extra	14
	Intuity	10
	Pristine	14
12	Switch	7
	Miravis Prime	14
17	Elevate	0
19*	OSO	0
	PH-D	0

**FRAC 19 only provides fair to good activity against Botrytis (and powdery mildew)*

Links of Interest:

Cornell Cooperative Extension:
https://cals.cornell.edu/cornell-cooperative-extension

Efficient Vineyard:
https://www.efficientvineyard.com/

LERGP:
https://lergp.cce.cornell.edu/

https://lergp.com/

NYSIPM:
https://cals.cornell.edu/new-york-state-integrated-pest-management

Veraison to Harvest:
https://cals.cornell.edu/viticulture-enology/research-extension/veraison-harvest

Spotted Lanternfly Pocket Guide:
https://lergp.com/spotted-lanternfly