



May 2024 LERGP Newsletter

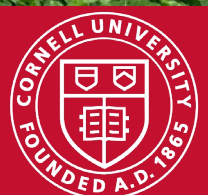


Cornell Cooperative Extension
Lake Erie Regional Grape Program



PennState Extension

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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.



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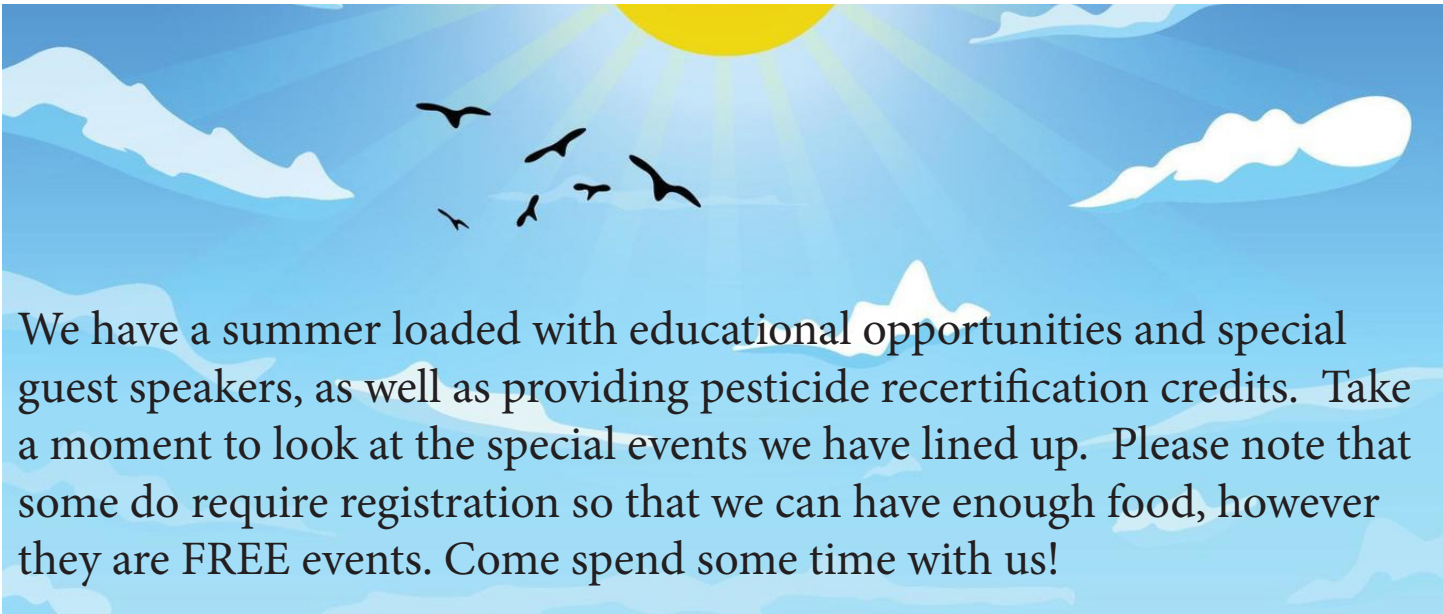
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[Click here to watch Podcasts](#)

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.



We have a summer loaded with educational opportunities and special guest speakers, as well as providing pesticide recertification credits. Take a moment to look at the special events we have lined up. Please note that some do require registration so that we can have enough food, however they are FREE events. Come spend some time with us!



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2024 LERGP Coffee Pot Meeting Schedule

May 1, 2024 9:00am	SLF Meeting- Burch Farms 9210 Sidehill Rd. North East, PA 16428
May 8, 2024 10:00am	Sprague Farms 12435 Versailles Rd. Irving NY 14081
May 15, 2024 10:00am	Brian Chess Farm 10289 West Main Rd. Ripley NY 14775
May 22, 2024 10:00am	Schulze Vineyards & Winery 2090 Coomer Rd. Burt, NY 14028
May 29, 2024 10:00am	Kirk Hutchinson 4720 W. Main St. Fredonia, NY 14063
June 5, 2024 10:00am	LERGREC Field Day 662 N. Cemetery Rd, North East, PA 16428
June 12, 2024 10:00am	Betts' Farm- Soil Health Day 7366 East Route 20 Westfield, NY 14787
June 19, 2024 10:00am	NO COFFEE POT MEETING
June 26, 2024 10:00am	Zach & Alicia Schneider 771 Bradley Rd. Silver Creek, NY 14136
July 3, 2024 10:00am	Liberty Winery 2861 US Route 20 Sheridan, NY 14135
July 10, 2024 10:00am	NO COFFEE POT MEETING
July 17, 2024 10:00am	Chateau Niagara Winery 2466 West Creek Rd. Newfane, NY 14108
July 24, 2024 10:00am	Grower Demo Day at CLEREL 6592 West Main Rd. Portland, NY 14769
July 31, 2024 10:00am	Mason Farms 8603 West Lake Rd. Lake City, PA 16423



Cornell Craft Beverage Institute

Cornell Cooperative Extension
Lake Erie Regional Grape Program

Wine Sensory Evaluation Workshops

Thursday, May 23rd
2PM – 5PM

21 Brix Winery
6654 West Main Rd
Portland, NY 14769

Friday, May 24th
9AM – 12PM

Chateau Niagara Winery
2466 W Creek Rd
Newfane, NY 14108

In collaboration with Jennifer Phillips Russo, Viticulture Specialist with the LERGP, Anna Katharine Mansfield and Chris Gerling, Enology Extension Specialists with the Cornell Craft Beverage Institute, will be presenting a wine production-focused, interactive workshop on sensory evaluation. Topics include:

- 1) Are you a “super taster”? What does that mean?
- 2) Learn your personal sensory thresholds and anosmias
- 3) Practice identifying flaws, faults, and taints
- 4) The perils of sensory descriptors

REGISTRATION IS REQUIRED:

<https://cornellfswrkshps.securepayments.cardpointe.com/pay>

\$20 per participant



We thank Cornell AgriTech Smith-Lever for their funding toward this initiative.

If you are in need of assistance or special services to participate, please contact Beth Chang at eab54@cornell.edu to discuss accommodations at least 10 days prior to the event.

Cornell AgriTech

New York State Agricultural Experiment Station

EQUAL OPPORTUNITY STATEMENT: Cornell University is an employer and educator recognized for valuing AA/EEO, Protected Veterans, and Individuals with Disabilities and provides equal program and employment opportunities.

LERGREC Field Day Meeting Agenda-

June 5th, 2024

10am-2pm

662 Cemetery Rd, North East, PA 16428

Register at

<https://lergp.cce.cornell.edu/>

This is a FREE
Event

A four-hour open house and meeting with one core credit in the morning and three category credits throughout the day providing growers with updated information and research in juice and wine grape production as well as best practices for pesticide application and precision agriculture methods in vineyards. Registration is free and lunch will be provided.

- **Sign-in and Welcome 9:45 AM**
- **Start: 10:00 AM (30 minutes) 1 core recertification credits**
 - **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.
- **10:40 AM (30 minutes) 1 category recertification credit**
 - **Title:** “Grape Disease Management Update”
 - **Speaker:** Bryan Hed
 - **Description:** Review of current grape disease development, potential grape disease threats for the remainder of the season, and recommendations as to how growers need to respond to those threats with the chemical and cultural disease control options available
- **11:20 AM (30 minutes for multiple options)**
 - **Booth 1**
 - **Title:** Spotted Lanternfly and Tree of Heaven Identification
 - **Speaker:** Dr. Flor Acevedo
 - **Description:** Hands-on demonstration booth with preserved specimens, with guidance on identification/management/scouting
 - **Booth 2**
 - **Title:** Business and Grant Programs
 - **Speaker:** Andrew Holden, Tom McClure, Ryan Nagoette
 - **Description:** LERGP Business management specialist Andrew Holden will be available to discuss upcoming regional business opportunities and Erie Conservation specialists will be available to talk about the process of applying to the PA VinES program
 - **Tour 1**
 - **Title:** LERGREG Research- Potato update
 - **Speaker:** Mike Campbell, Emily Dobry
 - **Description:** Walking tour to the LERGREG potato research grounds with updates on this new research
- **12:00 PM (Lunch)**

****see more on the next page**

- **12:50 PM (30 minutes) 1 category recertification credit**
 - **Title:** “Viticulture during bloom- nutrient sampling and best practices”
 - **Speaker:** Dr. Cain Hickey or Jennifer Philips-Russo
 - **Description:** Demonstration and practical tips for performing plant tissue sampling, overview of timing, and rationale.

- **1:20 PM (30 minutes) 1 category recertification credit**
 - **Title:** “Pest Identification in Vineyards”
 - **Speaker:** Megan Luke and Kim Knappenberger
 - **Description:** Walking demonstration of scouting and identification techniques for insects, diseases, and weeds in the LERGREC vineyards. Discussion of why to scout, mapping vineyards for precision pest management, and how to assess management strategy efficacy over time.

- **2:00 PM End**



Now in our 40th year, we have a tradition of providing quality products, education and superior service to both farm and home growers. Our products and spray programs are tried and tested in our own vineyards, ensuring you have a solid program for your own vineyard. We deliver products, programs and services to our customers in an efficient and personal way to enhance their growth and profit opportunities for the long term.

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Precision and Digital Viticulture Field Day

Thursday, June 6th, 2024 | 10:00 am – 3:00 pm

Cornell Lake Erie Research and Extension Laboratory Regional Grape Program

6592 West Main Road

Portland, NY 14769

Register at

<https://lergp.cce.cornell.edu/>

This is a FREE
Event

10:00 – 10:10 **Welcome** – Jennifer Phillips Russo & Dr. Terry Bates

Research Updates

10:10- 10:25 **Drone Sensors** – Dr. Rob Chancia, Rochester Institute of Technology – Rob is working together to address vineyard nutrition through better monitoring techniques and guidelines for grape production across the nation and all grape markets. He will discuss his research as a part of this collaborative project conducted at the Cornell Lake Erie Research and Extension Laboratory.

10:25 - 10:40 **Hyperspectral Sensing Technology** - Kathleen Kanaley, Dr, Katie Gold Lab, Cornell University - Kathleen will update on her research with using satellite and drone imagery to develop remote sensing tools for early disease detection.

10:40 - 11:00 **Meet PPB & Research Update** – Dr. Yu Jiang, Cornell University – Yu will discuss his research utilizing the power of robotics and artificial intelligence to tackle major challenges facing farmers and drive a revolution in agricultural productivity and sustainability.

11:00 - 11:20 **Carnegie Mellon University Pruning Robots** – Dr. Abhi Silwal, Carnegie Mellon University – Abhi will present the design and field evaluation of a rugged and fully autonomous robot for end-to-end pruning of dormant season grapevines.

11:20 – 11:40 **Vision Spraying and Electric Weeding** – Dr. Lynn Sosnoskie, Cornell Weed Scientist – Lynn will update us on her research for sustainable programs that investigate other tools and technologies for controlling unwanted vegetation exploring non-chemical strategies for weed suppression including covering crops and mulches and vision-guided and electric weeders.

11:40 – 12:00 **Naio Ted Robotic Tool Carrier**– Chuck Baresich, Owner of Haggerty Creek – Chuck will be talking about the Naio Ted Robot and the potential use of robots to help improve efficiency in vineyards. Ted is the only autonomous straddle robot for vineyards with Augmented Autonomy. Perfect for mechanical weeding on the row.

12:00 – 1:00 **Lunch**

1:00 – 3:45 **Outdoor Demonstrations of Precision & Digital Tools**

3:45 – 4:00 **Closing Remarks** - Jenn Phillips Russo, LERGP

Betts Farms

Soil Health & Climate Resiliency Field Day

Wednesday, June 12th, 2024 | 10:00 am – 3:00 pm
7366 Route 20, Westfield, NY 14787

1.5 DEC Credits Available

Register at
<https://lergp.cce.cornell.edu/>

Agenda

This is a FREE
Event

- 10:00 – 10:20 **Registration & Welcome**
- 10:20 - 10:40 **Our Soil Health Journey** – Bob Betts, Betts Farms
- 10:40 - 11:05 **Soil Health in Perennial Fruit Systems: why it matters** – Debbie Aller, Cornell University
- 11:05 - 11:35 **Cover Cropping in Concord Grape Trials** – Jenn Phillips Russo, CCE Lake Erie Regional Grape Program
- 11:35 – 12:00 **Cover Crop Options for Different Applications** – Rod Porter, Kings Agri-Seeds
- 12:00 – 12:45 **Lunch**
- 12:45 – 2:15 **Soil Pit** - Dan Ufnar, USDA-NRCS
- &**
- Soil Health Trailer and Demonstrations** – Debbie Aller and Michael Glos, Cornell University
(2 groups, rotate after 45 minutes)
- 2:15 – 2:45 **Roller Crimping in Concord Grapes (Demonstration)** – Bob Betts, Betts Farms
- 2:45 – 3:00 **Closing Remarks** - Jenn Phillips Russo, CCE Lake Erie Regional Grape Program

Cornell Cooperative Extension
Lake Erie Regional Grape Program



Cornell CALS
College of Agriculture and Life Sciences



Business Management

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

NY Resilient Food Systems Infrastructure Program/Grant

In an earlier Crop Update I shared information on the *Resilient Food Systems Infrastructure Program* that was offered to all states by the USDA. This program aimed to, “expand statewide capacity and infrastructure for the aggregation, processing, manufacturing, storage, transporting, wholesaling, or distribution of targeted local and regional agricultural food products”. Through the program, each state was awarded money that they would then award to entities that apply for the grants. The Pennsylvania grants are both closed as of May 15th. The state of New York has two grant opportunities that will soon be available (the grants are not yet open to apply as of writing this [5/15]).

Here are the two grants that will be offered in NY:

Infrastructure Grants: This competitive opportunity is focused on funding infrastructure for the aggregation, processing, manufacturing, storing, transporting, wholesaling, or distribution of locally produced agricultural food products (excluding meat and poultry products). Applications may be submitted for projects ranging from \$100,000 - \$3,000,000. Applications must include match funds of 50% or 25% for historically underserved groups.

Equipment-Only Grants: 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 \$10,000 - \$100,000. No match is required for Equipment-Only Grants. The infrastructure grant seems more aimed towards processors than growers and would be applicable to any entity that works with local ag products. The equipment grant would likely be applicable to growers and processors in the area. No explicit guidance has been given regarding using the grant for bulk equipment, but bulk equipment is for agricultural food product aggregation. Below is what the NYS Ag & Markets Department recommend potential applicants do to prepare for the grant before it opens. They encourage you to get your UEI number. This number previously was called a DUNS number. This UEI number allows your business to be identified and is required to receive federal grant funding or receive federal contracts. After assisting growers in PA with getting their UEI, I have found that some can obtain their number quickly in a day or two, and some may take up to a week to confirm their business identity. I have also heard from some growers who had a DUNS number in the past that they had a challenging time updating to the new UEI. All that being said, now is a great time to get this done, as the grant windows are often short and we don't know when it will be opened.

Interested in Applying? Do this now to get ready:

Unique Entity ID

1. Obtain a federal Unique Entity ID

Sub-awardees are required to obtain a UEI in SAM.gov prior to being issued a subaward. This process can take multiple weeks in some instances, so it is important to start the process now. For information on how to register with SAM.gov and get a UEI number, visit <https://sam.gov/content/entity-registration>. It is free to register at SAM.gov.

2. Get your project shovel ready!

RFSI applicants will need to have shovel-ready projects because of the relatively short-timeline of the grant (projects must be completed by February 2027.) Make sure you know if you will need any local permits for your project.

3. Explore options for matching funds.

- NYS Community Development Financial Institutions (“[NYS CDFI Coalition](#)” website)
- NYS Small Business Credit Initiative website (“[State Small Business Credit Initiative \(SSBCI\) | Empire State Development \(ny.gov\)](#)”)

NYS Job Development Authority Agriculture Loan Fund web page (“[JDA Agriculture Loan Fund | Empire State Development \(ny.gov\)](#)”)

If you have any questions regarding this future grant or obtaining your UEI, please contact me.

My contact information:

Mobile (call or text): (716) 640-2656

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Email: AZH6192@psu.edu

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PA Update

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

Downy mildew has not emerged yet, but its time to plan for how you will be dealing with it on susceptible varieties. Old standard fungicides, like captan, copper, and especially mancozeb, are very effective. Just remember that they are protectants only and are not as rain fast as the newer fungicides, like Ranman, Revus, the phos acids, Ridomil, and Zampro. However, the newer, single site inhibitors are best used later, around bloom.

Powdery mildew: As we approach the 10-12" shoot stage, many growers are planning their first powdery mildew sprays. For Concord growers, some options are i) a FRAC 3 like tebuconazole, tetraconazole, triflumizole, or flutriafol product, ii) an oil, like JMS stylet oil, iii) a product like Nutrol (monopotassium phosphate) with a spreader/sticker. Powdery mildew pressure in juice grape vineyards should be quite low at this point in the season: we've only had about 3 primary infection periods since bud break, and cool temperatures over the past several weeks have kept the pathogen growing at a slow pace. Therefore, juice growers should not use any of the 'big guns' at this time (Gatten, Endura, Cevya)...save those for the immediate prebloom and first post bloom sprays. For many wine varieties, there's sulfur (for varieties that are not injured by it: *Vitis vinifera* and white hybrids). If you're using captan for other diseases like black rot, Phomopsis, and downy mildew, be aware of label restrictions regarding tank mix partners and subsequent sprays (for example, avoid mixing captan and oil or applying them within 10 days of each other, etc). **Remember to read labels carefully.**

Phomopsis and black rot: Rainfall on May 5 resulted in Phomopsis, black rot, and powdery mildew infection periods. However, these were infection periods pretty moderate in their intensity. Rainfall releases spores of the pathogens that cause all three diseases, and I suspect that there will be some, but not a lot of infection, resulting from the May 5 event. Growers that had a lot of black rot last year, need to consider getting a black rot material on (for example, mancozeb) before the next rain period. If you can, it would be best to time the application as close to the next predicted rain as possible; shoots are growing rapidly right now and can quickly outgrow the protection you apply.

Eutypa: At about 10 inches of shoot growth, its time to scout for the effects of Eutypa infections in trunks and cordons. The Eutypa fungus infects grapevines through pruning wounds, especially large pruning wounds created during your dormant pruning activity throughout the winter months. The fungus grows very slowly within the vine, and an infected vine will take years to show symptoms, but once the fungus has made inroads into the trunk, it may be only a matter of time before problems arise. There really aren't any practical ways for juice grape growers to spray their way out of the effects of this fungus, though there are some chemical controls that may help temporarily protect large pruning cuts from invasion that might be practical for "high end" wine varieties. The best way for juice growers to do battle with Eutypa, is to scout your vineyards at about the time you see 10 inches of shoot growth. Its at this stage that the symptoms such as yellow/chlorotic, stunted shoots, and small cupped leaves, are most easily seen (the left photo in Figure 1 below)



Figure 1: On the left, stunted, yellow shoots, with cupped leaves; diagnostic of a vine infected with *Eutypa lata*. Compare with the shoots on a healthy vine (right image).

Affected branches, cordons, and even trunks (if the whole vine is affected) should be cut out at least 6 inches below the lowest canker on that organ. If the whole canopy is affected, you have to remove the whole top of the vine, and suckers will have to be retained and trained as replacements. In this case, try to select suckers that emanate from the very bottom of the trunk or even below the soil line. These suckers are most likely to emanate from below any *Eutypa* cankers low on the diseased trunk. Suckers that are selected from higher up on the diseased trunk, risk being affected by trunk cankers below them, and may result in trunk failure all over again, just a few years “down the road” (Figure 2).



Figure 2: On the left, a canopy of a recently renewed vine, just a couple of years old, completely stunted by Eutypa problems that originate in the lower part of the trunk...inspite of the fact that it was just renewed! On the right, the base of that renewed trunk. Note how it emanates from an old, heavily cankered and decayed trunk base. The decay from the old trunk has already crept a foot or more up the base of the new trunk (seen where I've sliced away the bark on the new trunk) and has doomed the renewal to failure within a few years. If you can't get decent suckering (or there's no suckering at all) on vines that require trunk replacement, you might be able to run a dipper next year from an adjacent, healthy vine. In that case, vines involved in the replacement/renewal can be flagged for easy identification later. Cankered, diseased wood should be removed from the vineyard and buried or burned as practicable.

And lastly, Juice vineyards *heavily* damaged by late frost will warrant a more minimal disease management program this season, centered on protecting the fruit around bloom (immediate pre bloom and first post bloom spray) from diseases like powdery and downy mildew and black rot. I wouldn't scrimp on weed control, but rather focus on growing bigger vines this year (try to turn up something positive about having a small crop this season), for potentially bigger returns in future seasons.



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Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

The growing season is off to a slow start for some.

Dr. Lynn Sosnoskie, our Cornell Weed Scientist, forwarded the below information for us to share: Please see the forwarded message from Dr. Bill Chism on behalf of the Weed Science Society of America (WSSA) with respect to WSSA approved 1-page summary on the ESA that is recommended for inclusion in pest management guidelines.

Please note the a valuable link to the WSSA's ESA webpage, which contains additional information.

Pesticides and The Endangered Species Act: What You Need to Know

The following description has been endorsed by the Weed Science Society of America, Entomological Society of America, and American Phytopathological Society.

1: What is the Endangered Species Act (ESA)?

The Endangered Species Act is a long-standing federal law, first passed in 1973, which requires government agencies to ensure any actions they take do not jeopardize a species that has been federally listed as endangered or threatened. When an agency has a proposed action that might affect a listed species or its habitat, they consult with one or both of the agencies that helps enforce the ESA, the U.S. Fish and Wildlife Services or the National Marine Fisheries Service (this is known as “*a consultation*” with “*the Services*”). The Services then may recommend changes to the project or action to protect listed species or habitats.

2: How does the ESA affect pesticide use?

The Environmental Protection Agency (EPA) Office of Pesticide Programs (OPP) is the federal agency that regulates pesticide use. Because the use of pesticides can affect animals and plants (or their habitat), pesticide registrations are considered “actions” that would trigger an endangered species consultation.

3: Why am I hearing about the ESA and pesticide use now?

Due to the complex nature of the process, the EPA has not fully completed the required endangered species consultations with the Services for pesticide registrations in the past, which has left many of those pesticides vulnerable to lawsuits. Courts have annulled pesticide registrations which has led to their removal from market. To make pesticide registrations more secure from litigation, ultimately all pesticide registrations will comply with the Endangered Species Act (<https://www.epa.gov/endangered-species>).

4: How will this affect the pesticide I use today?

Many pesticide labels **will likely have changes that could include:**

- Requirement to check the EPA's Bulletins Live! Two website and follow current ESA restrictions for the pesticide product in the bulletin (<https://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins>)
- Measures to reduce spray drift
- Measures to reduce runoff/erosion
- Other measures to reduce pesticide exposure to listed species and their habitat

In short, farmers and applicators should expect to see some new application requirements on their pesticide labels. But there is no need to panic. To date, no pesticide has ever been fully removed from the market based solely on endangered species risks, and that remains an unlikely scenario in the future.

5: Why does complying with the ESA matter?

By starting to fully comply with the ESA, **EPA anticipates that this will give farmers and applicators more stable, reliable access to the pesticides they need.** Furthermore, the ESA has been successful at bringing back some species Americans care about – such as the bald eagle or the Eggert sunflower – and restoring them to healthy populations, which has benefited the natural and cultivated ecosystems that agriculture (and society) rely on.

The EPA Workplan to Comply with the ESA and Updates to the Herbicide Strategy

The Endangered Species Act (ESA) aims to protect federally threatened and endangered (T&E) species and their critical habitats. Administered by the US Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS), the act prohibits the unlawful “taking”, which includes harming, harassing, hunting, etc., of these species. It also mandates that federal agencies ensure that the actions they authorize, fund, or carry out do not jeopardize T&E species, directly, or adversely modify the environments that are essential for T&E species conservation and recovery. In recent years, the Environmental Protection Agency (EPA) has faced criticism for failing to meet its obligations under the ESA regarding pesticide decisions. In response to lawsuits, the EPA developed a work plan to ensure ESA compliance while meeting Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) responsibilities for pesticide registration: *“Balancing Wildlife Protection and Responsible Pesticide Use.”* The goal is to balance wildlife protection and environmental preservation with supporting the effective use of pesticides for agriculture, public health, and other purposes.

The draft Herbicide Strategy details the EPA’s plan for complying with ESA mandates to prevent herbicide off-target movement via drift, run-off, or erosion. The Strategy is expected to streamline future ESA pesticide consultations with the Services, especially the FWS. The strategy proposes mitigations to prevent off-target herbicide movement, such as the implementation of buffer zones or the use of hooded sprayers. If a mitigation strategy is to be employed nationwide, it will be clearly stated on the product label. In cases where only certain parts of the US are required to apply mitigation practices due to potential impacts on specific species or habitats, the label will direct users to consult the EPA’s Bulletins Live! Two (BLT) system. Stakeholders will use BLT to determine if a proposed application site (e.g., field, orchard block, pasture, etc.) is within a Pesticide Use Limitation Area (PULA) that requires the incorporation of additional mitigation measures.

In April 2024, the EPA released a progress report on the Herbicide Strategy, which was prompted by over 1000 public comments, some suggesting that the Agency needed to make it more understandable. Previously, the Strategy used a nine-point system to classify herbicides for mitigation requirements; the new approach will now employ four tiers—none, low, medium, and high—to describe mitigation needs for each herbicide. The Agency aims to reduce mitigation requirements when growers already implement practices to reduce pesticide runoff or are farming in naturally low-runoff areas (e.g., with minimal precipitation). Additionally, the EPA is exploring options for growers to meet mitigation requirements through agricultural conservation programs or when working under expert guidance. Lastly, the Agency is refining the maps used to determine where mitigation measures must be employed to protect listed species,

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which could potentially reduce the land area subject to pesticide restrictions.

Relevant links:

EPA ESA Workplan (2022): https://www.epa.gov/system/files/documents/2022-04/balancing-wildlife-protection-and-responsible-pesticide-use_final.pdf

EPA Herbicide Strategy (2023): <https://www.epa.gov/pesticides/epa-releases-draft-strategy-better-protect-endangered-species-herbicide-use>

EPA Update on Herbicide Strategy Progress (2024): <https://www.epa.gov/pesticides/epa-publishes-update-herbicide-strategy-progress>

Life After Broad Spectrums... Can We Survive?

By Dave Combs and Katie Gold

EPA restrictions against broad spectrum pesticides are imminent. What does that mean for the future of Eastern grape production? Dave Combs, Research Support Specialist in Dr. Katie Gold's Grape Pathology Laboratory at Cornell AgriTech shares his take what grape disease management will look like in a post-broad-spectrum world.

Going the way of the dodo

In early December 2023 the EPA announced to a small stakeholder audience over Zoom what many of us in the industry consider to be the first in a forthcoming series of restrictions upon broad spectrum pesticide use. Despite the public comments received during a 2021 review period, the EPA is deregistering (aka cancelling) all conventional crop use of Ziram (as well as Thiram and Ferbam) beginning in 2026.

The EPA regularly reviews pesticide registrations. This process determines what crops are allowed to use what chemistries and to what extent. Both Captan and Mancozeb are due to begin this process sometime this calendar year (2024). It is likely that grape growers' ability to use these materials will be significantly reduced or outright withdrawn.

Things are changing and changing rapidly. In the future, materials we have traditionally built grapevine disease management programs around will be less available, if at all. Milder winters will increase overwintering disease pressure. Some think that this will mean the end of Northeast grape production... but is that truly the case?

Are the good ol' days behind us?

Every generation thinks it has advantages over the last, and yet, every generation yearns for the 'good ol' days.' For example, many of us still pine for the era of big muscle cars, V8 engines, and the days when a gallon of gas cost only \$1. Yet, that hasn't stopped us from making the swap to electric vehicles for family and farm use. Sure, an electric engine just doesn't have the presence of a 4-barrel carburetor sucking down leaded fuel at 8 miles to the gallon, and it certainly is an adjustment to have to schedule a mid-trip car charging break on long drives.... but you can't deny that an EV runs laps around those old behemoths when it comes to gas expense, benefit to the environment, and carbon credits.

This is a surprisingly accurate metaphor for the grape disease management situation we face. We may be losing the 'old V8's' because of compounding environmental and health issues, but fortunately for us, there are effective 'electric vehicles' just waiting to be picked up on the lot. The choice is yours: either put in that charging station or keep doing burn outs at stop lights.

The future is calling

The agrichemical industry has prepared for these forthcoming changes. In recent years, even the stoutest conventional chemistry manufacturers have jumped to develop new modes of action and biofungicides. Some were a little more ahead of the curve than others, but none the less, everyone seems to be on the same road now. And fortunately for grape growers, we are well past the days of the Prius being the only EV on the lot and are solidly in our Tesla era.

I run Cornell Grape Pathology's fungicide efficacy evaluation program, which includes five unique disease trials that span nine vineyard acres. Our trials regularly have well over 100 unique combinations of conventional, biofungicide, and mixed rotational programs and form the foundation of the NY/PA Grape Pest Management Guidelines. We share these results through articles like this one, talks at grower events and conferences, Dr. Gold's annual "manifesto," (aka her [Annual Disease Control Update](#)), and peer-reviewed publications. These trials are the hardest arena any chemistry, conventional or biological, will ever go up against as they are intentionally managed to encourage disease development.



1 Dave Combs (left) runs Cornell Grape Pathology's Fungicide Efficacy Evaluation Program and has 20+ years of experience testing agrichemicals for disease and insect control. Dr. Katie Gold and Dave (right) evaluating Chardonnay clusters for downy mildew severity.

I have been testing agricultural chemicals since before cell phones were the norm. I remember testing early formulations of kaolin clay at 50 lbs/A, or more accurately, I remember the absurd amount of ethanol I had to use to clean that sludge out of my equipment. I was not exactly *excited* when we first started receiving "untraditional" products to test.

Believe me when I say *no one* is more surprised than *me* to discover I've become a biological fungicide enthusiast!

Every year since 2019, we have seen an increase in the number of new chemistries, both conventional and biological, from new and traditional agrichemical players in our trials. In 2023, new biological products outnumbered new conventional products in our trials by a factor of 5 to 1! [In 2022, Dr. Gold and I published an Appellation Cornell article introducing some of these new biological materials, their unique modes of action in comparison to traditional chemistries, and some preliminary efficacy findings.](#)

Most of these materials have comparable label rates to the old ones we're used to, and some are even lower. In addition to being much safer for human health and the environment, I have found them to be easy to work with, requiring far less PPE and applicator caution. A huge bonus is that [biofungicides are unlikely to have resistance develop due to their unique modes of action in comparison to conventionals.](#) **But most importantly.... THEY WORK!**

However, just like the electric car, we must make lifestyle adjustments to get the best performance. **Getting the best bang for buck**

Let's continue with the car metaphor. Think of your pesticide shed as your home garage: there should still be 2 bays. We don't want you to *get* rid of the muscle car, we want you to consider only driving it on Sundays.

Over the course of 4+ years of testing, we have found that biological materials are most effective when they are used in rotation with traditional chemistries. **We recommend preserving highly effective conventional material use for critical control periods and severe disease conditions, while otherwise rotating between conventional and biomaterials.**

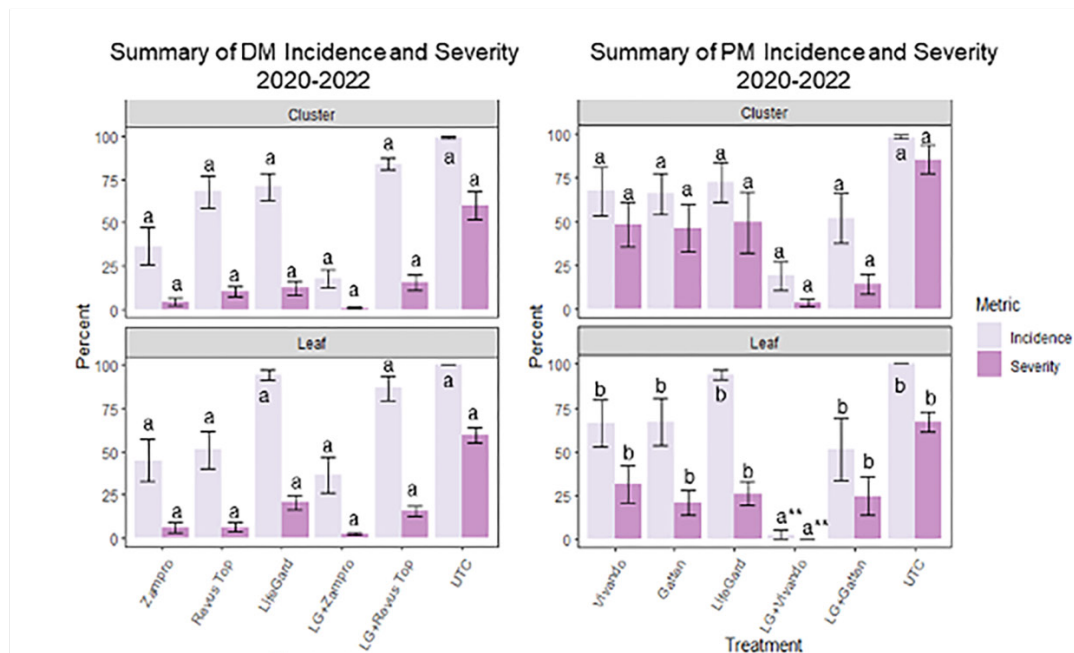


Image Caption ButtonData from the Cornell Grape Pathology's powdery mildew (PM) and downy mildew (DM) trials.

Data from the Cornell Grape Pathology's powdery mildew (PM) and downy mildew (DM) trials. Remember our trials are the hardest arena any chemistry will ever face! Control programs that rotate biopesticides with conventional chemistries (such as Lifegard+Zampro [left] and Lifegard+Vivando [right]) can provide statistically and numerically similar levels of control to conventional only programs. From Paul et al. in review.

It is no secret that the New York grape industry struggles with fungicide resistance. By reducing powerful conventional material use frequency via rotation with biologicals, *we are also preserving and lengthening their active lifespan for effective disease control!*

Our current data suggests that biopesticides should be used first when in rotation with traditional chemistries. However, because this is such a new frontier, we are still learning what conventional and biological materials pair best with each other and at what application timings.

We've been busy at Cornell Grape Pathology planting new vineyards so that we may seek the answers to these questions. In 2021, the New York Wine and Grape Foundation awarded us a sustainability grant to plant a 1-acre Traminette Pathology Vineyard at Cornell AgriTech in Geneva, NY to serve as a biopesticide trial home base to evaluate application timing and tank mix combos. The 2024 season will be the first year of this trial, and we look forward to sharing the results!

In 2023, we joined [VitisGen3](#), the third renewal of a highly successful USDA NIFA Specialty Crop Research Initiative. That spring season we planted two new vineyards of multiple highly promising varieties with innate powdery mildew and downy mildew resistance developed over the project's previous 10-year span. [These grapevines produce European variety quality wines with resistance genes from diverse Vitis species.](#) Once these vineyards come to maturity, we will use them to

design ideal spray programs that combine conventional and biologicals to best preserve their innate resistance.

In the meantime, until we have more data on how biological and conventional active ingredients impact one another, we suggest you *avoid* tank mixing biopesticides with conventional products or other biopesticides, *unless specified by the manufacturer*. The reasoning behind this is simple: some biopesticides contain live agents that are reactivated when added to water. By mixing them with a material designed to kill live agents (e.g. a conventional, or even another biopesticide), we may be wasting money, material, and time by inactivating the biological before it reaches the nozzle.

But what to do in the meantime?

Ziram has a broad activity spectrum against phomopsis, black rot and downy mildew and will be a sad loss, especially for concord growers. However, there are both biologicals and conventional materials showing great promise that will likely be acceptable replacements.

Phomopsis trials have been difficult to manage, and we have not yet been able to gather any useful data with any material. Always wrong year, wrong vineyard. We're trying again in the 2024 season so keep your fingers crossed for us. In the meantime, we still have manzate available for the time being. The PHI and max amount/A are always concerning, however there are some other that will likely prove efficacious. Several copper formulations, both conventional and organic, are effective for Phomopsis control. Cornell Grape Pathology has been testing a low dose formulation in development by a Geneva, NY based startup that will hopefully be available in 2025 that shows great promise here. Ecoswing, Theia, Howler EVO and Lifeguard are all biofungicides that will likely have some effect on this pathogen. Conventional options with probable, but unproven activities are Aprovia, Cevya, Mettle and Miravis Prime.

We have conducted **black rot** trials have been conducted in our Niagara vines for the past three years. Biofungicides have done very well against this pathogen and in some seasons are stand out treatments. In particular, a tank mix of Stargus, a living agent, and Regalia, a plant extract. Yes, I did just say not to tank mix, but here me out: these are two materials that were intentionally designed to complement each other in the tank. The living material that comprises Stargus was specifically selected for its performance in the presence of the plant extract that makes up Regalia. Lifeguard consistently has been effective and Howler's new EVO formulation has also done well. Across all three years of our black rot trial thus far, Aprovia 0.83EC has consistently provided the best cluster and foliar protection. Other conventional materials that have provided satisfactory black rot control in our trials include Cevya, Mettle, Rhyme and Rally.

Biofungicides against **downy mildew** have been tested for quite some time, and unfortunately there hasn't been a panacea. With the resistance issues of FRAC's 40 and 11, coupled with potential phosphorous acid tolerance, this could prove to be a troublesome issue soon. Again, we find that Lifeguard provides consistent, commercially acceptable downy mildew control. Romeo, a product with similar mode of action but a different active ingredient, has also performed satisfactorily. In 2023, Howler EVO (the new formulation) and Theia performed exceptionally. Certis has acquired both materials from their former manufacturer, both will be available for use in the 2024 season. Some conventional materials remain effective. Ranman worked well in our trials, especially when tank mixed with a phos. acid. Zampro is composed of 2 active ingredients, one of which is a FRAC 40, but the other component is a FRAC 45 and still very effective. Ridomil is still highly effective against downy but limited to one application per year and should not be used as a rescue material.

Final thoughts

Think of a racetrack. On its own, the Tesla can give a racecar a run for its money, but probably not beat it. But if you give it a head start and a pristine track.... now we're talking!

The same is true for biological fungicides. It is imperative that you provide your biologicals the best starting environment possible for them to succeed. Keep your canopy in check for best spray

coverage and penetration. This has the added benefit of improving airflow and reducing disease development risk. Calibrate and pattern your sprayer, use enough water per acre to get proper coverage, and use the proper materials at the proper rates.

Given their unique modes of action, such as defense activation, biofungicides have a low resistance profile, however this is something that we should not push to find out. Rotate modes of action/FRAC groups every application. Make no more applications per year than the label allows. Personally, I don't like to use any one MOA more than twice a season, be it biological or conventional, but I know reality doesn't always shadow research.

Without broad spectrums, there will be more use pressure on the remaining available conventionals, which could lead to fungicide resistance development. Not good. To prevent this, save the 'hot rods' for when they are most needed in the critical control periods and otherwise rotate between biologicals and conventionals.

As a long-term solution, consider planting newly released grapevine varieties that have more innate resistance than European-only grapevines, such as historical releases from Cornell Grape Breeding like Traminette, and new releases from VitisGen3 as they become available. [Future results from our VitisGen3 variety trial will help us all better understand how and when to use biofungicides for effective disease control.](#)

So, will there be life after broad spectrums? YES, I do believe there will be. But just as we've seen with electric cars, you will have to make some lifestyle changes and take some extra steps to accommodate their quirks to ensure you're getting the best performance possible. Vroom vroom- the future is calling!

Dave Combs is a Research Support Specialist in Dr. Katie Gold's Grape Pathology Laboratory at Cornell AgriTech in Geneva, NY with 20+ years of experience in chemical and cultural grape disease management. He runs Cornell Grape Pathology's annual fungicide efficacy evaluation program. These trials challenge conventional, biological, and mixed fungicide programs against five common grapevine diseases in the 9+ acre Cornell Pathology vineyards. Dave can be contacted via email at dbc10@cornell.edu.

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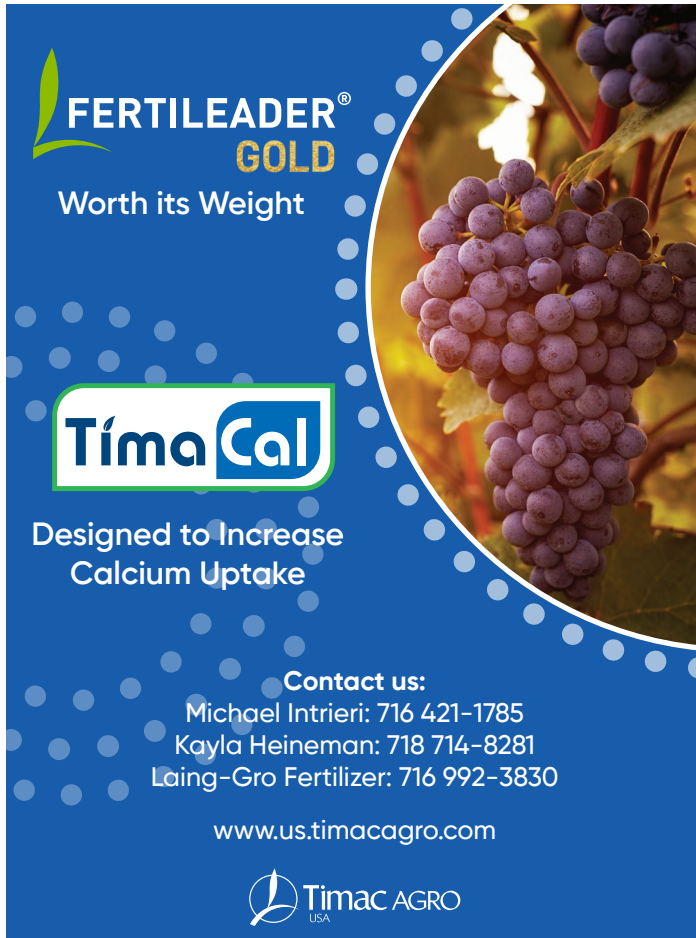


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