



Concord leaves, florets at CLEREL-
05/16/2023- Kim Knappenberger

CROP UPDATE

May 18, 2023

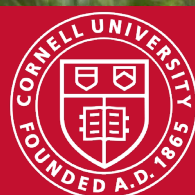


Cornell Cooperative Extension
Lake Erie Regional Grape Program



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2023 LERGP Coffee Pot Meeting Schedule

May 3, 2023	10:00am	Double A Vineyards 10317 Christy Rd. Fredonia NY 14063
May 10, 2023	10:00am	Niagara Landing Wine Cellars 4434 Van Dusen Rd. Lockport NY 14094
May 17, 2023	10:00am	John Schultz & Sons 9510 Sidehill Rd. North East PA 16428
May 24, 2023	10:00am	Brian Chess Farm 10289 West Main Rd. Ripley NY 14775
May 31, 2023	10:00am	Sprague Farms 12435 Versailles Rd. Irving NY 14081
June 7, 2023	10:00am	NO COFFEE POT MEETING
June 14, 2023	10:00am	Betts' Farm 7365 East Route 20 Westfield, NY 14787
June 21, 2023	10:00am	Paul Bencal Farm 2645 Albright Rd. Ransomville NY 14131
June 28, 2023	10:00am	Gary Young Farm 8401 Gulf Rd. North East PA 16428
July 5, 2023	10:00am	NO COFFEE POT MEETING
July 12, 2023	10:00am	Zach & Alicia Schneider Farm 771 Bradley Rd. Silver Creek NY 14136
July 19, 2023	10:00am	NO COFFEE POT MEETING
July 26, 2023	10:00am	Westfield Ag & Turf 7521 Prospect Rd. Westfield NY 14787



In this copy:

In the Vineyard, Freeze Updates, Coffee Pot News, - Jennifer Phillips Russo- [page 6](#)

PA Update - Bryan Hed- [page 18](#)

PA Update - Megan Luke- [page 21](#)

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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.



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Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

In the Vineyard

Today is May 18, 2023, at 9 AM as I write this article. Understandably so, I have already fielded five grower phone calls and one news reporter call about the low temperatures in the early morning hours. Unfortunately, we did hit some temperatures below freezing in some areas. I am crossing my fingers and hoping for the best in some of those areas. I wanted to give you a little background on the physiology of the grapevine shoots that hopefully may ease your worry. Frost on the surface of leaves is not what kills the shoots, it is the internal water of the plant in between the cell walls (inter-cellular) or in the protoplasm inside the cell (intra-cellular) that freezes and cause cell death. Also, the amount of solutes in that water is important. Plants have a defense system to avoid freezing of the water inside the cells. The solutes acts as supercoolant and freezes at a lower temperature (Keller, 2010). There are some specialized plant proteins that limit the growth of ice crystals through a mechanism independent of lowering of the freezing point of water, too. Synthesis of these proteins in the plant are induced by cold temperatures. They bind to the surface of ice and slow further crystal growth, which is what pierces the tender tissue and causes cell death (toTaiz, et al. 2015). The smaller leaves with the above mentioned defenses should be protected down to 28°F at bud burst, 29°F at two-leaf stage, and 30°F at 4-leaf stage (Sugar et al., 2003). Below is the 'Critical Temperature' visual that Dr. Terry Bates put together based off of research that depicts a Concord bud progression and critical temps where we could see damage (Photo 1). Unfortunately, it may take a few days to really see damage, if any, in our vineyards. If you did experience damage, please reach out if you would like a site visit for letter of support in crop insurance cases.

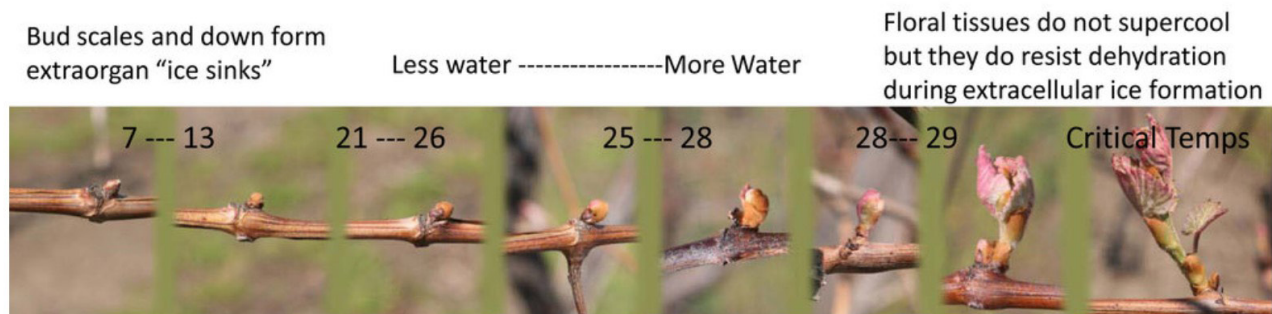


Photo 1. Critical Temperatures for buds and shoots put together by Dr. Terry Bates

Temperatures were forecasted to be at or below freezing for some portion of last night, with light winds, which encourage colder air to settle towards the ground. Growers who have wind machines may have had to use them.

For those growers who don't have wind machines, mowing cover crops down to 3-4" tall (or less) can help cold air settle closer to the ground, further away from the tender shoots in the canopy, and also promote any air movement at that level as well to help mix warmer air with the cold. Kim Knappenburger constructed the table of low temperatures from 12 AM this morning until 7 AM for your reference (Table 1).

Table 1. Lake Erie Grape Region NEWA station information from 12 AM on May 18, 2023, until 7 AM

Station	low temp	duration of below freezing (hours)	avg wind speed (mph)	avg wind gust (mph)
Corwin	30	5	0	0
Burt	29		3	5
Ransomville	32.7	0	1.3	3.5
Brant	32.9	0	1.5	3.5
Versailles	28.8	6	1	3.1
Sheridan	32.6	0	0.5	1.5
Silver Creek (Double A)	30.7	1	0.4	2.6
Silver Creek	32.3	0	2.2	5.2
Hanover	29.6	4	1.8	2.5
Forestville	35.6	0	1.2	3.2
Dunkirk Airport	33	0	0	0
East Fredonia	32.1	0	0.2	1.3
Fredonia	34	0	5	7
Brocton	34.7	0	6.8	7.4
Portland	33.3	0	3.9	5.7
Portland LERGP West	34.4	0	4	5.2
Portland R Block	33.3	0	1.1	3.3
East Westfield	36.8	0	2.7	9.3
Westfield	33.8	0	2.9	4.7
Westfield South	35.2	0	3.8	7
Ripley	33.5	0	3.9	6.5
Ripley State Line	33.1	0	1.4	3.9
Ripley Escarpment	34.2	0	5.4	8
North East State Line	36.6	0	2.2	5.7
North East Lab	34.5	0	3	6.6
North East Escarpment	33.2	0	6	8.2
North East Side Hill	35.7	0	4.5	7.5
Harborcreek Escarpment	33	0	4.6	7.5
Harborcreek	33.7	0	2.2	3.6
Lake City	32.3	0	0.5	1
avg wind speed and gusts are from 1:00AM-7:00AM 5/18/2023				

For another visual, Matt Laird, with National Grower's Coop, made a map that he shared with me this morning and allowed me to share with you all (Figure 1).

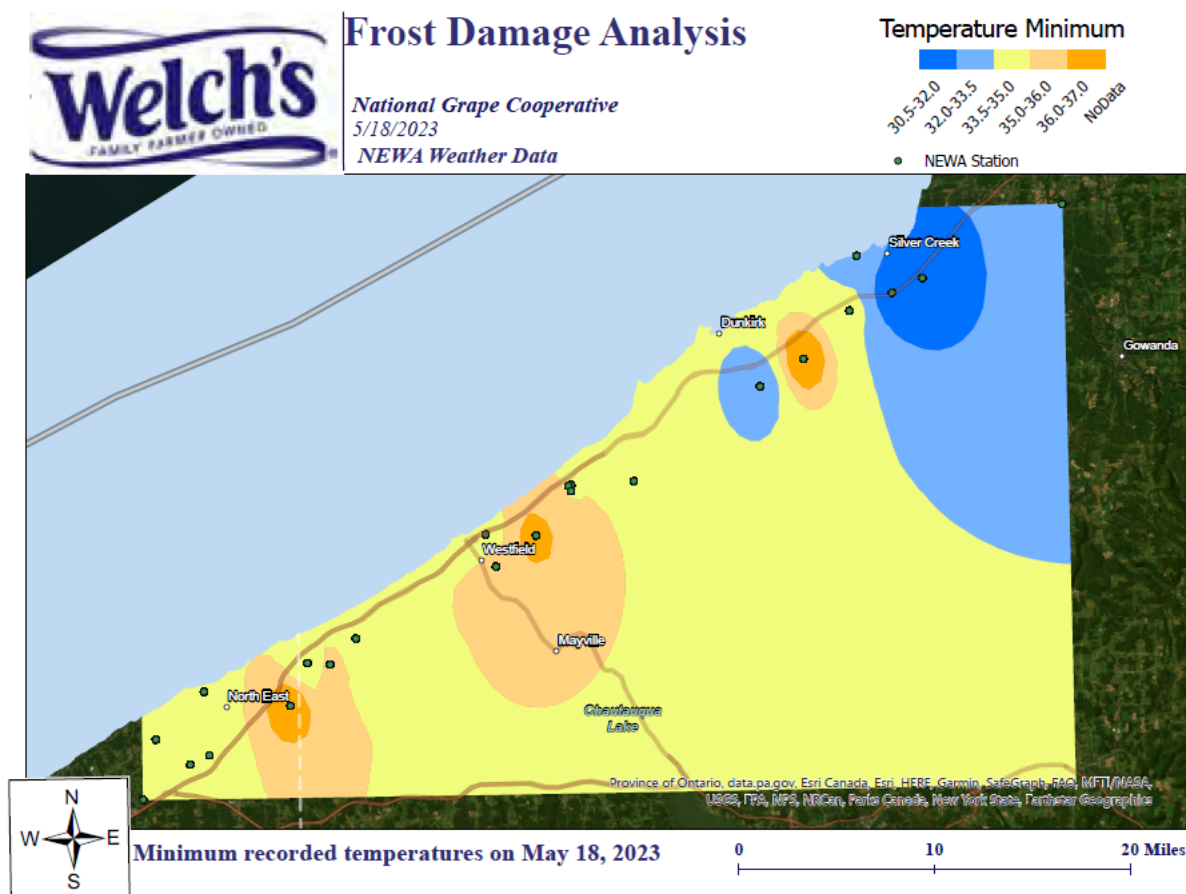


Figure 1. Map of Lake Erie Grape Region low temperatures on May 18, 2023 from Matt Laird of Welch's

Understanding Heat Loss and Frost Protection in Radiative Conditions

Frost can be detrimental to grapevines, causing significant damage to buds, florals, shoots, and leaves. Understanding the processes involved in heat loss and frost protection in radiative conditions is crucial for implementing effective measures to safeguard vineyards. This article explores the factors contributing to heat loss, the role of radiative processes, and the importance of temperature inversions and dew points in frost protection strategies based off of information published (Evans, 2000).

Sources of Heat Loss in Radiative Frost Conditions:

Under radiative conditions, there are two primary sources of heat loss: radiative losses and advection (wind). All objects, including grapevines, radiate heat into their surroundings based on the temperature differences between them. In clear night skies with an effective temperature around - 4°F, exposed objects lose heat at a faster rate compared to situations with cloud cover. Radiative heat losses occur as objects, including grapevines, radiate their heat to space, gradually cooling themselves.

Advection (Wind) and Its Impact:

Wind plays a crucial role in heat loss and frost conditions. When clear, dry air moves into an area with minimal cloud cover at night, the plants, soil, and other objects that are warmer than the cold night sky begin to radiate their own heat back to space. The colder plant tissues that are directly exposed to the sky become the coldest. As the warmer air tries to warm the cold plant parts, it also becomes colder. This heavier, colder air slowly moves down the slope under the influence of gravity, known as “katabatic wind,” and accumulates in low areas or “cold pockets.” This advection process can carry heat from frost protection activities out of a vineyard and replace it with colder air, making it important to account for wind drift when planning frost protection measures.

Temperature Inversions and Frost Protection:

Temperature inversions, characterized by a warmer layer of air above the ground, play a significant role in frost protection systems such as wind machines, heaters, and sprinklers. During radiative processes and with very low wind speeds, a thermal inversion condition develops, where the temperature several tens of feet above the ground may be considerably warmer than the air in the vineyard. This temperature difference, known as an inversion, can range from 34.7°F to 37.4°F in moderate inversion conditions. Frost protection systems rely on this inversion to be effective, as it creates a barrier between the colder air near the ground and the warmer air above. This is why we employ wind machines to mix up that air, pushing the warmer air down and stirring the colder air up. Also, frost fans work in the opposite direction, pushing the colder air up from the ground higher into the air.

Dew Points and Heat of Condensation:

As the air temperature decreases due to radiative losses, a point is reached where the air approaches its dew point temperature. At this stage, atmospheric water begins to condense on the colder plant tissues, releasing the latent heat of condensation. This heat release prevents further temperature decreases, at least temporarily. Exposed plant parts generally reach the same temperature as the air when the dew point is reached. The heat released from condensation replaces the radiative heat losses. Dew points near or above critical plant temperatures are crucial for successful and economical frost protection programs, as the large amount of water in the air provides a significant heat reservoir.

Conclusion:

Understanding the dynamics of heat loss and frost protection under radiative conditions is essential for effective agricultural management. By considering factors such as radiative losses, advection (wind) effects, temperature inversions, and dew points, growers can develop comprehensive strategies to mitigate the damaging impact of frost on vineyards. Balancing these variables is key to ensuring successful and economically viable frost protection programs that safeguard yields.

References:

Keller, M. 2010. *The Science of Grapevines: Anatomy and Physiology*. Publisher: Academic Press.
Sugar, D., R. Gold, P. Lombard, and A. Gardea. 2003. Strategies for frost protection. In: E.W. Hellman (Ed.) *Oregon Viticulture*. Oregon State University Press. Corvallis, Oregon.
Taiz, Lincoln., Zeiger, Eduardo., Moller, Ian Max., Murphy, Angus. 2015. *Plant Physiology and Development, Sixth Edition*. Publisher: Sinauer Associates, Inc.

Shoot Progression

Whichever scales that you choose to use, it is getting time to think about your phomopsis spray that we recommend at 3-5 inches of shoot growth. With the warmer weather last week, growth

to continued as expected with warmer weather. Below are shoots from the same row at Cornell Lake Erie Research and Extension Laboratory from May 9th and May 17th. Please note that it is time consider your phomopsis spray. I know that it has been dry/cooler weather, but per our NY and PA Grape Guidelines, infections are likely to become problematic when the Phomopsis fungus is allowed to build up on dead canes or pruning stubs in the vines and/or when early-season sprays for this disease are omitted. Disease development is strongly favored by prolonged periods of cloudy and rainy weather, which provide both filtered sunlight and high humidities that are optimal for the fungus. We have experienced foggy mornings and heavy dew. Please refer to Chapter 5.2.5 in the Grape Guidelines for more information on the **3- to 5-INCH SHOOT GROWTH (new shoots are 3-5 inches long)**. Management programs may need to be intensified (e.g., shorter spray intervals, higher fungicide rates, more efficacious materials) during periods when such conditions occur.

2. Concord grapevine shoot with floret exposed taken at the Cornell Lake Erie Research and Extension Laboratory in Portland, NY on May 9, 2023.

3. Concord grapevine shoot with floret exposed taken at the Cornell Lake Erie Research and Extension Laboratory in Portland, NY on May 17, 2023.



PEST MANAGEMENT

3" - 6" shoot growth:

Start disease management protocol for Vinifera and varieties highly susceptible to [powdery mildew](#); Start post-infection disease management protocol for varieties with moderate susceptibility to [powdery mildew](#) and high susceptibility to [black rot](#);

Start primary-season protectant disease management protocol for vineyards with a history of severe [Phomopsis](#), [downy mildew](#), and/or [black rot infections](#) or vineyards with severe disease pressure the previous year.

MONITORING REQUIRED: [weather parameters of temperature, precipitation and leaf](#)

Registration open for Staffing and Organizing Your Team online course **Course applicable to all agricultural commodities**

Cornell Agricultural Workforce Development has opened registration for Staffing and Organizing Your Team, a six-week course in the Supervisory Leadership Certificate program. Staffing and Organizing Your Team materials release June 16, 2023 and live weekly Zoom discussions will be held from 3 to 4 PM ET each Thursday from June 22 through July 27, 2023. Participation in the live sessions is highly encouraged and provides a valued opportunity for peer-to-peer learning and networking. Registration is \$275 and closes June 16. Continuing education credits are now available for this course and the Supervisory Leadership Certificate program. Course topics include: becoming a preferred employer, personnel planning, job descriptions, recruiting and interviewing, hiring and onboarding.

[Register for Staffing and Organizing Your Team](#)

Who should attend?

This course, and the whole certificate series, is appropriate for both new and experienced farm supervisors and managers, and those preparing to become supervisors. All participants will learn leadership concepts and practice skills that will improve their ability to build a positive workplace and get results through leading others. Past course participant management experience ranges from a few years to over 20 years. All participants say the course content made them more effective at their job.

From the comfort of your home or office, watch prerecorded presentations on your own schedule, and engage with classmates and instructors during weekly, live discussion sessions. Corresponding assignments are due each week. To get the most out of the experience, expect to spend approximately two hours per week on lessons and assignments.

Direct questions to Rachel McCarthy, Agricultural Supervisory Leadership Coordinator, at rachel.mccarthy@cornell.edu.

Learn more about the [Agricultural Supervisory Leadership certificate program](#)

Supervisors are critical to the success of farm businesses. They have a major impact both on employees' daily work experiences and on the production performance of the business. The Agricultural Supervisory Leadership certificate helps farm supervisors and managers learn and apply human resource management practices and leadership skills that foster rewarding workplaces and drive business results. Confident managers who thoughtfully apply leadership and management skills improve employee performance, develop teams, reduce employee turnover, and increase employee engagement. The courses within the certificate program will offer extensive practice and engagement activities to build confidence and skill sets.

Each course includes up to six weeks of instruction on topics that will build your leadership and management skills. Instruction includes a combination of pre-recorded lectures, reading assignments, written exercises, live discussion sessions and quizzes. For those looking to learn more on a particular topic, supplemental videos and articles may be recommended by the instructor. To get the most out of the course, students should plan to spend two to four hours each week on

combined course activities.

Courses in the Agricultural Supervisory Leadership certificate include:

- Transitioning to Supervisor: Develop essential communication skills and manage conflict. Lead a multi-cultural team. Build an effective workplace culture.
- Organizing Work for High Quality Results: Develop clear expectations and standard operating procedures. Delegate effectively. Diagnose and correct performance problems.
- Managing Performance: Understand motivation. Harness the power of performance feedback and coaching. Build clear and effective workplace communications. Set safety expectations. Conduct effective performance improvements.
- Staffing and Organizing Your Team: Develop job descriptions. Learn how to find potential employees, interview and select the right people. Implement new hire documentation, employment authorization, and onboarding: bringing new employees into the business successfully and productively.
- Employee Development and Training: Identify training needs. Understand learning styles. Design and plan learning experiences that accommodate learner needs. Develop effective training skills and techniques. Evaluate learning results and training effectiveness.
- Ethics and Employment Regulations for Supervisors: Implement responsible and ethical labor practices and understand why this matters for agriculture. Recognize and prevent sexual harassment. Understand and follow minimum wage and overtime laws. Implement Equal Employment Opportunity laws to prevent discrimination and harassment. Use an employee handbook. Handle employee discipline and termination.

Course instructors include:

Richard Stup, Cornell Agricultural Workforce Development Specialist

Elizabeth Higgins, Ag Business Management/Production Economics Extension Specialist with the Eastern New York Commercial Horticulture team

Libby Eiholzer, Dairy Technical Specialist, Cargill

Bob Milligan, Cornell University Professor Emeritus

Kaitlyn Lutz, Bilingual Dairy Management Specialist

Transitioning to Supervisor students say:

All modules had great value. It got me to rethink some things. The elements fit together pretty well, building upon each other. The breakout rooms were good. I liked the variety of learning. I found the country differences extremely valuable to better understand our multicultural workforce. Communication lessons gave perspective on different ways to communicate effectively with your team. The lesson with power distances was helpful to teach different ways people of other countries view topics. I really enjoyed the videos during the course and being able to ask questions to instructors and getting a quick response. The self-evaluation to find out what kind of a supervisor you are was helpful.

Organizing Work for High Quality Results students say:

All the aspects of the course were good. The weekly zoom meetings I think are important. The break-out sessions were very useful. It allowed us to discuss similar issues with peers. I thought the course was great. I liked being able to ask questions to instructors and getting a quick response.

Cornell Agricultural Workforce Development's mission is to help farms and agribusinesses build committed and effective teams who will carry out the important work of feeding the world. We believe that agricultural work can, and should be, engaging and rewarding for everyone involved. Managers can build committed teams by applying the best human resource management practices

for the agricultural setting. Key program goals include:

- Provide leadership and management development education focused on farm supervisors, middle managers, and owners
- Clarify workforce regulations that apply to farms and increasing levels of compliance
- Build consistent channels of communication and learning opportunities about agricultural workforce issues
- Conduct research into workforce problems and challenges that confront agriculture

Business Management Specialist Position Posted!!!

As of March 16, 2023, our program has had a vacancy in our Business Management Specialist position on the Penn State University side, with Kevin Martin's decision to join the grower side of the business. The job posting to fill his position has gone live this past weekend. That means that they are now **ACCEPTING APPLICATIONS!** [Click Here to Apply or Share the Job Posting](#)

Below is the job and position description with more information included in the link above. If you know of someone that may be a good fit for the position and meets the below requirements, then please encourage them to apply by clicking the link above.

JOB DESCRIPTION AND POSITION REQUIREMENTS:

[Penn State](#) Cooperative Extension is seeking an Extension Educator to provide commercial grape growers/producers with the knowledge and educational resources necessary to assess production and management practices that will enhance their profitability and sustain the growth of the grape and wine industry in the Lake Erie Region of New York and Pennsylvania. This is joint program between Cornell and Penn State.

The Extension Educator will provide leadership for planning, implementing and evaluating educational programs that address producer identified needs and opportunities. Emphasis is on business management for commercial growers and small winery operations. This program will include but not be limited to:

- 1) record keeping and business analysis;
- 2) economics of production practices;
- 3) financial management, forms of business organization and taxation;
- 4) labor management; and
- 5) marketing.

Qualifications:

This position will be filled as a level 3 or 4, depending upon the successful candidate's competencies, education, and experience. Typical requirements for a level 2 includes a Master's Degree or higher plus 2 years or more of related experience, or an equivalent combination of education and experience. Additional experience and/or education and competencies are required for higher level jobs. Preference will be given to candidates who have a concentration in Business Administration or a closely related field. Coursework in labor management, marketing, database management, agriculture economics, education and communication is desired. Two years relevant experience in Cooperative Extension, Agribusiness, Grape Production, Adult Education or closely related field is required. Five years of relevant experience and knowledge and/or experience in current and emerging Grape and Wine Production and Marketing practices is desired. Salary and educator rank will be commensurate with education, training and experience.

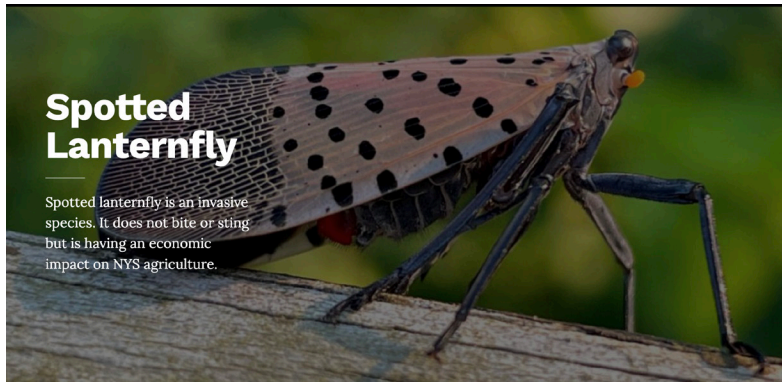
Coffee Pot News

We have had two of our Coffee Pot Meetings already this growing season, and I was asked to include some of the information that we discussed in the Crop Updates. You will find that information in this section for the rest of the growing season.

This week attendees asked for us to share the links to the Spotted Lanternfly PSA so that they may share with friends and family to start a Community Campaign to bring awareness to others outside of our industry in efforts to be proactive in keeping numbers down in the community and hopefully in our vineyards as well. Every little bit helps, so please share this widely:

[Click Here for Spotted Lanternfly PSA \(English\)](#)

[Click Here for Spotted Lanternfly PSA \(Spanish\)](#)



4. Spotted Lanternfly information found on NYS IPM website

Attendees also asked for the information on how to identify Tree of Heaven, one of the Spotted Lanternfly's preferred hosts and the list of chemicals approved in grapes for treatment of Spotted Lanternfly.

Here is a link to Spotted Lanternfly information on our website and also a video on Tree of Heaven that Tim Weigle produced:

[Click here for LERGP SLF information](#)

[Tree of Heaven Podcast with Tim Weigle](#)

Below is a photo taken for the PSU extension publication for Tree of Heaven (Photo 5). For more information [Click Here](#)



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- A. Bark
- B. Compound leaf
- C. Smooth leaf margin showing glandular teeth
- D. Brown spongy pith
- E. Leaf scar on twig
- F. Winged seeds called samaras
- G. Clonal patches growing along highway

Photos by Dave Jackson

5. Pictures of Tree of Heaven for identification from PSU website link above.

Below is the excel of chemical treatments for Spotted Lantern fly located on the [NYS IPM website](https://www.nysipm.org/).

March 2022 – Insecticides for Control of Spotted Lanternfly (a fulgoid invasive insect) in New York Grapes – Quick Guide

Compiled by Juliet Carroll, Hans Walter-Peterson, Dan Gilrein, and Greg Loeb, Cornell University.

Visit NYSPAD www.dec.ny.gov/nyspad/products to search for primary label and 2(ee) or 24(c) information.

Read the pesticide label and 2(ee) recommendation or 24(c) special local need label for directions, details, and additional restrictions.

Must have 2(ee) or 24(c) in possession when applying the material.

GRAPES									
Product (registration type)	AI ¹	Use Restrictions	EPA Reg No.	IRAC Group ²	Rate/A	REI ³	PHI ⁴	Probable efficacy on nymphs	Probable efficacy on adults
® Actara (2(ee))	thiamethoxam	NYS, LI	100-938	4A	3.5 oz	12 hr	5 d	Excellent	Excellent
® Drexel Carbaryl 4L (2(ee))	carbaryl	NR	19713-49	1A	2 qts	2 days; 6 days if girdling or cane turning	7 d	Excellent	Excellent
* Imidan 70WP (2(ee))	phosmet	NYS	10163-169	1B	1.333 lb to 2.125 lb	14 days, see label. No U-pick allowed	≤ 1.333 lb/A = 7 d > 1.333 lb/A = 14 d	Excellent	Poor
® Dupont Avaunt (2(ee))	indoxacarb	NR	352-597	22A	6 oz	12 hr	7 d	Excellent	Poor
® Brigade WSB (2(ee))	bifenthrin	F	279-3108	3A	8 - 16 oz	12 hr	30 d	Excellent	Excellent
® Brigade WSB (researcher 2(ee))	bifenthrin	F	279-3108	3A	10 oz	12 hr	30 d	Excellent	Excellent
* Brigade 2EC (2(ee))	bifenthrin	F	279-3313	3A	6.4 fl oz	12 hr	30 d	Excellent	Excellent
Brigade 2EC (24(c))	bifenthrin	F	279-3313	3A	6.4 fl oz	12 hr	postharvest	Not relevant	Excellent
* Hero (2(ee))	zeta-cypermethrin & bifenthrin	F	279-3315	3A	5 - 10.3 fl oz	12 hr	30 d	Excellent	Excellent
® Mustang MAXX (2(ee))	zeta-cypermethrin	F	279-3426	3A	4 fl oz	12 hr	1 d	Excellent	Good
* Sniper Helios (2(ee))	bifenthrin	F	34704-858	3A	3.2 - 6.4 fl oz	12 hr	30 d	Excellent	Excellent
® Danitol 2.4 EC (2(ee))	fenprothrin	F	59639-35	3A	16 - 21.33 fl oz	24 hr	21 d	Excellent	Excellent

Use Restrictions: NR = None; NYS = Restricted-use by the DEC, requires applicator certification; F = Federal restricted-use, requires applicator certification; LI = no use on Long Island.

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^ Approved for organic use in NY.

* May be phytotoxic, follow label restrictions.

¹Active Ingredient.

²Mode of Action, IRAC group code. (UN = undesignated)

³Restricted Entry Interval (hr = hours).

⁴Pre-Harvest Interval (d = days).

GRAPES									
Product (registration type)	AI ¹	Use Restrictions	EPA Reg No.	IRAC Group ²	Rate/A	REI ³	PHI ⁴	Probable efficacy on nymphs	Probable efficacy on adults
* Pyronyl Crop Spray	Pyrethrin+PPO	NYS	89459-26	3A	12 fl oz	12 hr	0	Good	Good
* Swagger (2(ee))	bifenthrin & imidacloprid	F	34704-1045	3A, 3A	7.6 - 12.8 fl oz	12 hr	30 d	Good to Excellent	Good to Excellent
* BotaniGard MAXX	<i>Beauveria bassiana</i> (strain GHA) + pyrethrins	NR	82074-5-68539	UN, 3A	8 - 32 fl oz	12 hr	Until spray has dried	Good	Good
* Xpectro OD	<i>Beauveria bassiana</i> (strain GHA) + pyrethrins	NR	82074-5	UN, 3A	8 - 32 fl oz	12 hr	Until spray has dried	Good	Good
* Aza-Direct (2(ee))	azadirachtin	NR	71908-1-10163	UN	1.0 - 3.5 pints	4 hr	0 d	Good	Good
* M-Pede (2(ee))	potassium salts of fatty acids (insecticidal soap)	NR	10163-324	UN	1-2 gals (1-2% v/v solution)	12 hr	0 d	Good	Good
* Mycotrol ESO	<i>Beauveria bassiana</i>	NR	82074-1	UN	0.25-1 -qt	4 hr	0 d	Good	Good
* BoteGHA ES	<i>Beauveria bassiana</i> (strain GHA)	NR	82074-1	UN	0.25-1 qt	4 hr	Up to day of harvest	Good	Good
* BotaniGard ES	<i>Beauveria bassiana</i> (strain GHA)	NR	82074-1-68539	UN	0.25-2 qt	4 hr	Up to day of harvest	Good	Good

Use Restrictions: NR = None; NYS = Restricted-use by the DEC, requires applicator certification; F = Federal restricted-use, requires applicator certification; LI = no use on Long Island.

*Rating based on different product with same AI.

® Tested on peach only.

*Assumed excellent at high rate per acre.

Rotate between IRAC groups to prevent resistance.

* Contact only, thorough coverage. No residual efficacy.

^ Approved for organic use in NY.

* May be phytotoxic, follow label restrictions.

¹Active Ingredient.

²Mode of Action, IRAC group code. (UN = undesignated)

³Restricted Entry Interval (hr = hours).

⁴Pre-Harvest Interval (d = days).



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PA Update

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

Weather: We have accumulated about 73 growing degree days over the past 17 days of May, with 1.26" of rainfall (both below average). A frost event on April 27 damaged new shoots in some vineyards in Erie county PA. Some vineyards on the west side have been particularly hard hit, and it is easy to tell how affected damaged buds are at this point (figure below).

Note that shoots damaged on April 27 have not moved much beyond bud break and are dead. The live, healthy shoots (bright pink and green) have extended to about 4 or 5 inches in length.



Unfortunately, we await the results of yet another late freeze event earlier this morning (May 18) when temperatures dropped into the low 30s to upper 20s, along the lake belt. Any further cold damage should become obvious rather quickly as temperatures climb back into the 60s and 70s over the next couple of days.

Phenology: At our location along the lake, Concords in our Cemetery road block have about 3 to 4 inches of shoot growth. Most wine varieties here are farther behind with 1 to 2" of shoot growth.

Diseases: This is your annual reminder that our first disease issue during early shoot growth is **Phomopsis cane and leaf spot**. So far we have had zero infection periods for black rot and Phomopsis during the past 17 days of May and extension of the first 3 to 5 inches of shoot growth has occurred under nearly dry conditions. However, rain appears to be on the horizon for

Friday night into Saturday (80% chance of precipitation). We'll need about 8-10 hours of continuous wetness from this rain event to generate infection periods for Phomopsis and black rot. It will likely result in an infection period for powdery mildew.

New shoots and inflorescences are vulnerable to infection by Phomopsis at this time. **This early spray is probably the most important one for Phomopsis if conditions are adequately wet.** Rainfall releases spores of Phomopsis from overwintering wood sources that can germinate and infect new shoot tissues and leave scabby black lesions and cankers on the first few nodes/internodes of shoots and, most importantly, on inflorescences. Heavy infection at the base of the shoots (Figure 1) may result in weakening of the shoot and shoot breakage under windy conditions. Leaf infections are far less serious, appearing as pinhead sized black spots surrounded by a yellow halo (Figure 2), but they do indicate the presence of an overwintering source of the Phomopsis fungus. Infections on stem tissue of inflorescences can result in fruit rots during later stages of ripening, months after the infection period took place: early infections of the cluster stem tissue can progress into berries during ripening and cause fruit to rot and/or shell before or during harvest (Figure 3). After fruit are formed, they are generally at risk of direct infections until a couple weeks or so after bloom, when inoculum sources normally get 'milked out'.



Fig. 1 Lesions at the base of the oldest internodes result in scabby areas that weaken the shoot.



Fig. 2 Leaf infections of Phomopsis cane and leaf spot on Concord grape. These are rarely consequential, but they do indicate the presence of overwintering inoculum in the trellis.



Fig. 3 Phomopsis fruit rot on ripe Vignoles and Niagara grapes; from infections of the cluster that occurred months earlier.

Phomopsis management with fungicides should begin at about 3-5" inches of shoot growth (NOW). Monitor your crop daily and watch weather forecasts, paying especially close attention to the prediction of **lengthy** wetting periods during this early shoot growth period. You'll need to apply that first mancozeb or captan spray for Phomopsis before the next substantial rain period. These are all protectant type materials that have no "reach back" activity; they have to be applied **before** an infection period, to do their job. You don't have to use the high rates of these 'protectants' for that first early shoot spray to be effective.

Vineyards heavily damaged by late frost will warrant a more minimal disease management program, centered on protecting the fruit around bloom (immediate pre bloom and first post bloom spray) from diseases like powdery mildew and black rot. More will be discussed on this as we get a better assessment of the damage from this latest frost episode, over the next week.

	<p>NORTH EAST FRUIT GROWERS 2297 KLOMP ROAD, NORTH EAST, PA 16428 814.725.3705 NEFRUITGROWERS@VERIZON.NET OPEN YEAR-ROUND MONDAY - FRIDAY 8AM - 5PM OPEN SATURDAYS APRIL- NOVEMBER 8AM - NOON</p>	
<p>DRYSHOD WATERPROOF FOOTWEAR The world's most wearable rubber boot. dryshodusa.com</p>	<p>ALL-NATURAL Aspen Song WILD BIRD FOOD</p>	<p>BULK FERTILIZER BAGGED FERTILIZER CHEMICALS VINEYARD SUPPLIES ORCHARD SUPPLIES PRUNING SUPPLIES GLOVES & BOOTS POND PRODUCTS PRODUCE PACKAGING HOME OWNER SUPPLIES & SO MUCH MORE!</p>

PA Update

Megan Luke, Penn State Extension Viticulture and Tree Fruit Educator

PA Update

While much of Erie County escaped major damage in the April 27th freeze, the west side of Erie (Lake City area) saw extreme damage in some areas with 80 – 90% primary bud injury in some vineyard blocks. A visit to several properties revealed not only primary but also secondary bud damage. Shoots that did survive are at just hitting the 3-5" stage and clusters are visible. In Concords, secondary buds can provide 1/3 to 1/2 of a full crop under optimum conditions.

The NEWA weather station in Lake City demonstrated a low temperature of 29.9 F at 7:00 AM April 27th. It's likely that temperatures in some vineyard blocks dropped lower. To check vineyards for primary bud damage, randomly select shoots throughout blocks and record the number of dead and live primary buds to get an idea of injury levels (the more buds checked the more reliable the estimate). Counting in groups of 100 is easiest, the number of damaged buds per 100 counted is your reportable damage level. This will be important in the coming weeks if your vineyards experienced freezing temperatures this morning (May 18th) as well. Be sure to contact your crop insurance agent to report frost injury levels as expediently as possible.

Banded Grape Bug & *Lygocorus inconspicuus* – Now that flower clusters are visible in most vineyards, it is important to be vigilant about scouting for banded grape bug (Figure 1) and *Lygocorus inconspicuus* (Figure 2) nymphs. Scout vineyard edges for these insects by examining flower clusters on about 100 shoots in different areas in the vineyard. Treatment threshold to prevent economic loss is 1 nymph per 10 shoots.

The easiest method of scouting these insects is to tap flower clusters over a paper plate and count the nymphs that fall off, using an optical magnifier can aid in identification. Only the nymphal stage of these insects is harmful in grapes.

Banded Grape Bug identification and scouting technique: [video](#)

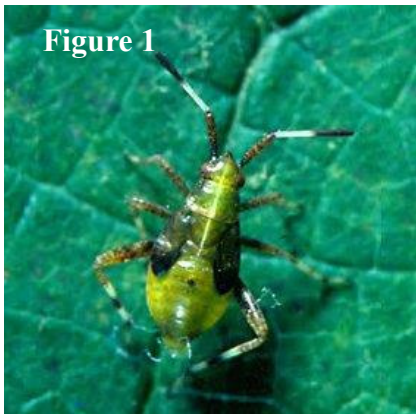


Photo Credit: Joe Ogradnick, Cornell University, courtesy Greg Loeb

Photos courtesy of Cornell IPM, Joe Ogradnick and Greg Loeb

If you are a PA grower the Penn State Wine and Grape Team has an important survey out regarding herbicide drift. Our goal is to help both grape growers and herbicide applicators by identifying if knowledge gaps exist; if identified, these will be used as future focus points for Penn State Extension specialists. Please consider taking our survey - even if you think you have not: (1) caused herbicide drift; and/or (2) been impacted by herbicide drift.

Herbicide drift survey: [here](#)

Office schedule (*May 22th-26th*)

M 9am-5pm Erie Co. Cooperative Ext. Summit Municipal Bldg. Erie, PA

T/W 8am-4:30pm CLEREL Portland, NY

Th 9am-5pm LERGREG North East, PA

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