Vineyard at CLEREL-
Jennifer Phillips Russo

CROP UPDATE
June 15, 2023

Cornell Cooperative Extension
Lake Erie Regional Grape Program

PennState Extension

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:

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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.

REGISTER

Lake Erie Regional Grape Research and Extension Center Field Day

Join us to learn about the latest research and best practices for grape production in the Lake Erie Region

Free Event | Lunch Provided
PDA and NY DEC Core (2) and Category (2) Recertification Credits Available

Who is this for?

- Juice and wine grape growers
- Vineyard owners
- Wine producers
- Viticulture professionals
- Industry professionals

What will you learn?

- Best Practices for Pesticide Sprayer Calibration and Canopy Coverage
- Wine Grape Cultivar Considerations near Lake Erie and Viticulture
- Programming at Penn State
- Introduction to the MyEV Tool
- Update on Spotted Lanternfly
- Current Grape Disease Development and Management

When: July 6, 2023
(10:00 AM-2:00 PM)

Where: LERGREC
662 N. Cemetery Rd.
North East, Pennsylvania 16428

Registration deadline: July 5, 2023

PennState Extension

Cornell Cooperative Extension

REGISTER

Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

In the Vineyard

The Cornell Lake Erie Research and Extension Laboratory (CLEREL) officially called bloom in Concord on June 12, 2023. Bloom is officially called when the florets on 50% of the clusters reach 50% cap fall. The photo below was taken on June 14, 2023, at the CLEREL. I had some growers call stating that they were only at trace bloom and others that state they are far from bloom. Please remember that if you were one of the blocks that took heavy frost damage, it is very important to make sure that you are getting your important bloom sprays on for primaries and secondaries. I know that it may not be ideal, but with an already reduced crop on the secondaries you will want to ensure that they stay clean from disease. In those frost damaged areas, there are differences. Bryan Hed's contribution to this Crop Update will address bloom sprays.

Photo 1. Concord grape bloom at CLEREL

Growers have called this week to ask about Rose Chaffers, Banded Grape Bug, and Flea Beetle. Yes, yes, and yes. We have seen emergence of all of them. Per the Grape Guidelines, Rose Chaffers are clumsy, light-brown beetles about 5/8-inch long. They damage leaves and flower clusters around the bloom period. Populations are usually highest on light, sandy soil. The Banded Grape Bug is still a concern in blocks where frost damage occurred, and secondaries are pushing and also blocks that have not met bloom yet. They feed on flowers and young berries, using their sucking and piercing mouth parts. Economic injury can occur when more than 1 nymph per 10 shoots are present. And the Grape Flea Beetle, which are small (3/16-inch) bluish-black beetles that damage vines by feeding on small grape buds. Larvae feed on the upper surface of leaves. Usually, this is an early spring pest, but we found adults in a vineyard just yesterday. Please consult your Grape Guide for management strategies if you are experiencing these pests.

Also, if you have cover crops in your vineyards, now is the time to terminate so that the vine does not have to compete for water. There is rain in the forecast, so if you were waiting to apply your fertilizer you may want to entertain this week for timing. If you were at this week's Coffee Pot Meeting at the Betts Farm, then hopefully you were able to see the cover crop display that Bob Betts put together for growers. He planted seeds in soil from his vineyards in clear containers so that we could see how the roots grow (Photo 2).

2. A cross section photo of the cover crop planted clod from Betts Farm.

3. A closeup of the egg-shaped nodules on the legume roots are where the rhizobia bacteria live.

He also cut one of the containers in half to see the roots in the middle of the clod (Photo 3). In legumes, and a few other plants, bacteria called rhizobia live in small growths on the roots called nodules. The rhizobia and the legume plant have a symbiotic relationship, which means that it is beneficial to both the plant and bacteria to work together.

Nitrogen fixation is done by the bacteria, and the NH_3 they produce is absorbed by the plant. Nitrogen fixation by legumes is a partnership between a bacterium and a plant. with the proper soil bacteria, convert nitrogen gas from the air to a plant available form. Nitrogen fixation by legumes can be in the range of 25–75 lb of nitrogen per acre per year in a natural ecosystem, and several hundred pounds in a cropping system (Frankow-Lindberg and Dahlin, 2013; Guldan et al., 1996; Burton, 1972).
I found this great article published by New Mexico State University that does a great job of explaining Nitrogen fixation below. Keep in mind when reading that this is not for grape production, but the same principals may be applied on our production system with cover cropping. I thought that the information was relevant to our understanding of how the legumes can benefit our commercial systems.

Nitrogen Fixation by Legumes
Guide A-129
Revised by Robert Flynn and John Idowu
College of Agricultural, Consumer and Environmental Sciences, New Mexico State University

Authors: Extension Agronomists, Department of Extension Plant Sciences, New Mexico State University. (Print friendly PDF)
Biological Nitrogen Fixation

Approximately 80% of Earth's atmosphere is nitrogen gas (N_2). Unfortunately, N_2 is unusable by most living organisms. Plants, animals, and microorganisms can die of nitrogen deficiency, surrounded by N_2 they cannot use. All organisms use the ammonia (NH_3) form of nitrogen to manufacture amino acids, proteins, nucleic acids, and other nitrogen-containing components necessary for life.

Biological nitrogen fixation is the process that changes inert N_2 into biologically useful NH_3. This process is mediated in nature only by N-fixing rhizobia bacteria (*Rhizobiaceae*, α-*Proteobacteria*) (Sørensen and Sessitsch, 2007). Other plants benefit from N-fixing bacteria when the bacteria die and release nitrogen to the environment, or when the bacteria live in close association with the plant. In legumes and a few other plants, the bacteria live in small growths on the roots called nodules. Within these nodules, nitrogen fixation is done by the bacteria, and the NH_3 they produce is absorbed by the plant. Nitrogen fixation by legumes is a partnership between a bacterium and a plant.

Figure 1. A legume plant root showing nodules attached to the roots. Legume Nodules

Biological nitrogen fixation can take many forms in nature, including blue-green algae (a bacterium), lichens, and free-living soil bacteria. These types of nitrogen fixation contribute significant quantities of NH_3 to natural ecosystems but not to most cropping systems, with the exception of paddy rice. Their contributions are less than 5 lb of nitrogen per acre per year. However, nitrogen fixation by legumes can be in the range of 25–75 lb of nitrogen per acre per year in a natural ecosystem, and several hundred pounds in a cropping system (Frankow-Lindberg and Dahlin, 2013; Guldan et al., 1996; Burton, 1972).

Legume nitrogen fixation starts with the formation of a nodule (Figure 1). The rhizobia bacteria in the soil invade the root and multiply within its cortex cells. The plant supplies all the necessary nutrients and energy for the bacteria. Within a week after infection, small nodules are visible with the naked eye (Figure 1). In the field, small nodules can be seen 2–3 weeks after planting, depending on legume species and germination conditions. When nodules are young and not yet fixing nitrogen, they are usually white or gray inside. As nodules grow in size, they gradually turn pink or reddish in color, indicating nitrogen fixation has started (Figure 2). The pink or red color is caused by leghemoglobin (similar to hemoglobin in blood) that controls oxygen flow to the bacteria (Figure 2).

Nodules on many perennial legumes, such as alfalfa and clover, are fingerlike in shape. Mature nodules may actually resemble a hand with a center mass (palm) and protruding portions (fingers), although the entire nodule is generally less than 1/2 inch in diameter (Figure 3). Nodules on perennials are long-lived and will fix nitrogen through the entire growing season as long as conditions are favorable. Most of the nodules (10–50 per large alfalfa plant) will be centered around the tap root.

Figure 2. Nodules from a legume cut open to show the reddish-pink color that indicates an active, healthy nodule.

Nodules on annual legumes, such as beans, peanuts, and soybeans, are round and can reach the size of a large pea. Nodules on annuals are short-lived and will be replaced constantly during the growing season. At the time of pod fill, nodules on annual legumes generally lose their ability to fix nitrogen because the plant feeds the developing seed rather than the nodule. Beans will generally have fewer than 100 nodules per plant, soybeans will have several hundred per plant, and peanuts may have 1,000 or more nodules on a well-developed plant.

Legume nodules that are no longer fixing nitrogen usually turn green and may actually be discarded by the plant. Pink or red nodules should predominate on a legume in the middle of the growing season. If white, grey, or green nodules predominate, little nitrogen fixation is occurring as a result of an inefficient rhizobia strain, poor plant nutrition, pod filling, or other plant stress.
The fixed nitrogen is not free; the plant must contribute a significant amount of energy in the form of photosynthate (photosynthesis-derived sugars) and other nutritional factors for the bacteria. However, some legumes are more efficient than others. Cowpea, for example, requires 3.1 mg of carbon (C) to fix 1 mg of N. White lupin, however, requires 6.6 mg of C to fix 1 mg of N (Layzell et al., 1979). A soybean plant may divert up to 50% of its photosynthate to the nodule instead of to other plant functions when the nodule is actively fixing nitrogen (Warembourg et al., 1982).
Any stress that reduces plant activity will reduce nitrogen fixation. Factors like temperature and water availability may not be under the farmer’s control, but nutrition stress (especially phosphorus, potassium, zinc, iron, molybdenum, and cobalt) can be corrected with fertilizers. When a nutritional stress is corrected, the legume responds directly to the nutrient and indirectly to the increased nitrogen nutrition resulting from enhanced nitrogen fixation. Poor nitrogen fixation in the field can be easily corrected by inoculation, fertilization, irrigation, or other management practices.

Nitrogen Fixation Efficiency And Nitrogen Fertilization
Some legumes are better at fixing nitrogen than others. Common beans are poor fixers (less than 50 lb N per acre) and fix less than their nitrogen needs. Maximum economic yield for beans in New Mexico requires an additional 30–50 lb of fertilizer nitrogen per acre. However, if beans are

Figure 3. Nodules detached from the roots of a mature legume plant, with a centimeter ruler for scale.

not nodulated, yields often remain low, regardless of the amount of nitrogen applied. Nodules apparently help the plant use fertilizer nitrogen efficiently.
Other grain legumes, such as peanuts, cowpeas, soybeans, and fava beans, are good nitrogen fixers and will fix all of their nitrogen needs other than that absorbed from the soil. These legumes may fix up to 250 lb of nitrogen per acre and are not usually fertilized (Walley et al., 1996; Cash et al., 1981). In fact, they usually don't respond to nitrogen fertilizer as long as they are capable of fixing nitrogen. Nitrogen fertilizer is usually applied at planting to these legumes when grown on sandy or low organic matter soils to supply nitrogen to the plant before nitrogen fixation starts. If nitrogen is applied, the rate should not exceed 15 lb per acre. When an excessive amount of nitrogen is applied, the legume literally slows or shuts down the nitrogen fixation process (Delwiche and Wijler, 1956). It is easier and less energy consuming for the plant to absorb nitrogen from the soil than to fix it from the air.

Perennial and forage legumes, such as alfalfa, sweet clover, true clovers, and vetches, may fix 250–500 lb of nitrogen per acre. Like the grain legumes previously discussed, they are not normally fertilized with nitrogen. They occasionally respond to nitrogen fertilizer at planting or immediately after a cutting when the photosynthate supply is too low for adequate nitrogen fixation (Aranjuelo et al., 2009). However, N_2 fixation continues in the presence of high levels of soil N, but at reduced levels (Lamb et al., 1995). It is also important to note that N_2-fixing alfalfa is much more capable of removing excess nitrogen from soil compared to non-N_2-fixing alfalfa varieties (Russelle et al., 2007).

Nitrogen Return to the Soil and Other Crops
Almost all of the fixed nitrogen goes directly into the plant. However, some nitrogen can be "leaked" or "transferred" into the soil (30–50 lb N/acre) for neighboring non-legume plants (Walley et al., 1996). Most of the nitrogen eventually returns to the soil for neighboring plants when vegetation (roots, leaves, fruits) of the legume dies and decomposes.

When the grain from a grain legume crop is harvested, little nitrogen is returned for the following crop. Most of the nitrogen fixed during the season is removed from the field as grain. The stalks, leaves, and roots of grain legumes, such as soybeans and beans, contain about the same concentration of nitrogen as found in non-legume crop residue. In fact, the residue from a corn crop contains more nitrogen than the residue from a bean crop simply because the corn crop has more residue left after the harvest of corn.

A perennial or forage legume crop only adds significant nitrogen for the following crop if the entire biomass (stems, leaves, roots) is incorporated into the soil. If a forage is cut and removed from the field, most of the nitrogen fixed by the forage is removed. Roots and crowns add little soil nitrogen compared with the aboveground biomass.

Nitrogen Fixation Problems in the Field

Measuring nitrogen fixation in the field is difficult. However, a grower can make some field observations that can help indicate if nitrogen fixation is adequate in some of the common legumes. If a newly planted field is light green and slow growing, suspect insufficient nitrogen fixation. This is often seen with beans and alfalfa. In a new field, the poor fixation is often attributed to the lack of native rhizobia to nodulate the legume, but the cause may also be poor plant nutrition or other plant stresses that inhibit nitrogen fixation. Small nodules should be present from 2–3 weeks after germination. If nodules are not present, consider the following options.

A. Replant using seed inoculated with the correct rhizobia.

B. Try to inoculate the plants in the field through the irrigation system or by other means. Caution: this technique often does not work and expert advice is needed.

C. Consider nitrogen fertilization to meet all of the plants' nitrogen needs. This may not be an option for a perennial legume such as alfalfa, especially if the field is kept in alfalfa for several years. Also, some legumes use soil or fertilizer nitrogen more efficiently if nodules are present.

If few or small nodules are present, sufficient soil nitrogen may not be available for the young plant before nitrogen fixation starts. The plant usually grows out of this condition, or a small amount of nitrogen can be applied. Also, inefficient native rhizobia may result in poor nitrogen fixation. Consider other soil stresses that may be inhibiting plant growth, especially plant nutrition and water stress.

If an established crop becomes nitrogen deficient in the middle of the growing season—when plant growth and nitrogen demands are greatest—poor or inefficient nitrogen fixation might be the cause. Nodules should be clearly evident, at about the size and number per plant as previously described, and should be pink or red in color. If only a few nodules are present, insufficient rhizobia numbers have limited nodulation, or plant stresses may be inhibiting nitrogen fixation. At this time, you may be able to remove a plant stress, but it is too late to inoculate if the nodules are mostly green, gray, or white since the native rhizobia are likely inefficient nitrogen fixers. The only choice may be to apply nitrogen fertilizer sidedressed on the present crop and to sufficiently inoculate the next legume crop. New Mexico State University Extension Guide A-130, Inoculation of Legumes (https://pubs.nmsu.edu/_a/A130/), describes when and how to inoculate legumes.

Literature Cited

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For more on this topic, see the following publications:

CR-645: New Mexico Peanut Production
https://pubs.nmsu.edu/_circulars/cr-645/

A-130: Inoculation of Legumes
https://pubs.nmsu.edu/_a/A130/

A-148: Understanding Soil Health for Production Agriculture in New Mexico
https://pubs.nmsu.edu/_a/A148/

A-150: Principles of Cover Cropping for Arid and Semi-arid Farming Systems
https://pubs.nmsu.edu/_a/A150/

All Agronomy Publications:
https://pubs.nmsu.edu/_a/

Original authors: *W.C. Lindemann, soil microbiologist; and C.R. Glover, Extension agronomist.*

Spotted Lanternfly Tracking Survey

The Penn State Extension Grape and Wine Team is calling on those who own, operate, or manage a farm or vineyard in the Mid-Atlantic region to participate in a survey that aims to track the spread and severity of nymph and adult spotted lanternfly populations during the 2023 season.

Results will be automatically displayed on the SLF Map 2023 of the Eastern U.S.

To participate, please fill out the Spotted Lanternfly Tracking 2023 survey.

Grape Leafroll Survey

Dear grape grower,

The PSU Wine and Grape Team kindly asks for your participation in the Grape Leafroll Virus Survey, an important initiative aimed at understanding and combating the Grape Leafroll Virus (GLRV).

Grapevine leafroll-associated viruses (GLRV or Grape Leafroll Virus Disease) are widespread in many grape growing areas in the mid-Atlantic region. As the mid-Atlantic region becomes more heavily invested in cultivars of Vitis vinifera, which are most susceptible to the effects of these viruses, the disease caused by these viruses will inevitably become a more severe problem for our grape and wine industry. With this survey, we would like to investigate strategies that growers like you would use to control these viruses.

Please use the following link to access the survey: https://pennstate.qualtrics.com/jfe/form/SV_8kT0ehBTZGuQEJ0

Your input and participation in this survey are crucial to the success of our collective efforts in combating GLRV.

If you have questions about this survey, don't hesitate to get in touch with Claudia Schmidt, Assistant Professor of Agricultural Economics, Penn State (cschmidt@psu.edu).

Sincerely,

The Penn State Wine and Grape team

PA Update

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

Weather: After almost 3 weeks of bone-dry weather, rains have returned as of June 11. Wetting events over the past 4 days (1.41" total for June here) have generated new infection periods for all the major diseases, and just at the most vulnerable period for fruit disease on all varieties. We have accumulated about 160.5 growing degree days so far in June (below average) and we now have 471 gdds as of April 1. The short-term forecast for North East has a 50-70% chance of rain today (June 15), and a 40% chance tomorrow, with highs in the upper 60s. The weekend looks dry with highs in the 70s, and temperatures are looking to heat up a bit more next week.

Phenology: Here by the lake we recorded trace bloom for Concord on June 14 (about 2 days behind our 25 year average). Most wine varieties here (Chancellor, Vignoles, Chambourcin, Riesling, Geisenheim, Aravelle (NY81), Gruner, Vidal) have not gone into bloom yet.

Diseases: That period of time, from budbreak to trace bloom, when we try our best to coordinate our pre bloom sprays, was about 2 weeks longer than average this year. That can make the timing of that immediate prebloom spray a little awkward to navigate. Hopefully, all juice grape growers have applied that immediate prebloom spray, and that materials with good efficacy were used (NOT tebuconazole or strobilurins for powdery mildew!!!). That said, the next spray (first post bloom spray) has to go on in 10-14 days (shoot for 10 and you'll surely (?) get it on in 14). Its important to not extend that interval more than 14 days (the closer to 10 days, the better) between the immediate prebloom and first post bloom sprays, even if you have to apply it before bloom is over. We just had multiple infection periods for all the major diseases AND developing berries are extremely susceptible right now. Keep them protected!

Scouting for diseases reveals that our previous rain period on May 20, led to Phomopsis lesions ***on leaves*** on the first few nodes of shoots. However, I am seeing almost no lesion development on shoot tissue. As for black rot, I am not seeing any infection from that same May 20 wetting period at our site, even where there are old fruit mummies hanging in the trellis.

If this past series of rain events, starting June 12, has led to infection of any kind, downy mildew lesions can be seen as early as Saturday/Sunday. Scout for downy mildew on leaves near the ground, especially vigorous sucker growth. Look for those yellow "oil spots". Scouting for black rot on leaves in or near the fruit zone is important as it will reveal your risk of fruit infection during bloom and early fruit development. Again, black rot leaf lesions at this time would be the result of the May 20 infection period (not this latest wetting period). Leaf lesions from the May 20 infection period are in prime position to release spores onto developing fruit during rain periods after capfall. If you see black rot leaf lesions in the fruit zone, **be warned** that first and second post bloom sprays of ziram, and/or sterol inhibitors, will need to be applied in a timely fashion to avoid crop loss from black rot, especially if conditions stay wet. New infections from the wetting periods starting June 12, will probably not become manifest until late next week or early the following week, as it generally takes at least 10-14 days from infection to symptom expression.

Juice grape growers will have to switch from mancozeb to ziram at this point, for downy mildew, black rot, and Phomopsis control. Keep in mind that ziram is not as effective on downy mildew as mancozeb products but will likely provide enough efficacy on this disease for Concord growers in most years (Ziram works as well as mancozeb for black rot and Phomopsis control). For juice varieties with higher susceptibility to downy mildew (Niagara, Catawba) I recommend spraying more than just ziram for downy control for the first post bloom spray. Revus Top can be used (but not on Concord), or a phosphorous acid product can be added to the ziram mix, to beef up your downy mildew program. There are other products for downy mildew control, that I mention below for wine grapes, but they will tend to be pricier. Revus Top will also provide good control of black rot and powdery mildew on juice varieties that are not injured by the difenoconazole in that product.

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

Best materials for powdery mildew on juice grapes for the first post bloom spray could include Quintec or Vivando/Prolivo. But even better, would be a material like Endura, Gatten, or Cevya. **Do not rely soley on stylet oil, strobilurins (Sovran or Abound) or sterol inhibitors like tebuconazole for powdery mildew control at this time.** Tebuconazoles and strobies are great for black rot, but resistance has rendered them too weak on powdery for reliable control of that disease at this critical point in the spray season. After the first post bloom spray, reassess your situation by scouting and closely watching the weather forecast. The better job you do right now, the more likely you'll be able to lighten up later.

For premium wine varieties, now is the time to use the biggest guns we have for powdery mildew. This may include materials like Luna Experience, Aprovia Top, or Gatten. These materials should be tank mixed with sulfur for use on varieties that are tolerant of sulfur. Spare no expense with regard to protection from other diseases as well and look for some of the best products for control of black rot, Phomopsis, and downy mildew (Luna Experience and Aprovia Top mentioned above will also provide black rot control, however you will need to augment the tebuconazole in Luna to get good black rot control). Mancozeb products can still be used on wine varieties (66 day pre harvest interval) and are great materials to couple with something like Revus, Ranman, Zampro, or Ridomil Gold MZ/copper for extra downy mildew control during early fruit development. If you use a product like Revus Top or Aprovia Top, the difenoconazole in these products (along with a tank mix of mancozeb) will do an excellent job of controlling black rot. The mancozeb will also provide continued control of Phomopsis.

Now is also the time to plan leaf removal in the fruit zone. Leaf removal can be done by machine or by hand and generally provides sizable reductions in bunch rot on rot susceptible wine varieties (Riesling, Vignoles, Pinot noir and gris, Chardonnay, etc). It can even help improve control of other disease as well, like powdery mildew. A trial we have been running for the past three seasons on several Riesling clones and hybrids, compared two different timings of mechanized leaf removal (at just before bloom and about two weeks later (about early fruit set)) with no leaf removal (the control). Using air pulse technology to remove leaves, both timings provide for about a 50% reduction in harvest rots. Leaf removal reduces fruit disease by improving exposure of fruit to light, air, and pesticide penetration. It can also improve fruit quality and may even reduce manual harvest costs by making the clusters easier to see and access by hand harvesters. The downside to leaf removal is the potential to reduce yields. For example, in the first year of our Riesling study, there was no reduction in yield from the air pulse leaf removal. However, in the second year of testing, leaf removal did reduce yields, regardless of timing. We'll be repeating this trial for one more season in 2023.

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PA Update

Megan Luke, Penn State Extension Viticulture and Tree Fruit Educator

Much of the region is experiencing the start of bloom, with some areas of Erie County a full week ahead of others. It is important to keep an eye on your phenology and scout appropriately, so you don't miss the best treatment window for pests. The first reports of rose chafer came in late last week, and if your buds are still closed there is still the possibility of damage from plant bugs. Continue scouting for noxious or problematic weeds, as many species are easier to deal with in their early stages before producing extensive root systems or reseeding.

Rose Chafer – (*Macrodactylus subspinosus* Fabricius) Beetles will emerge from the soil and move into vineyards to feed on flower clusters about 7-10 days before bloom. Adult beetles are about ½ inch long, have a light brown body coloration and long, spiny legs (Figure 1). Sandy soils between the Lake Erie shore and Route 5 are particularly prone to hosting this pest. Scouting for this pest should be conducted daily, if possible, but at a minimum of 3 times/week and should continue for about 2 weeks after bloom. Infested areas can lose extensive numbers of flower clusters if beetles are not detected early and treated. If a threshold of 2 beetles per vine is reached an insecticide application is recommended.

Figure 1.Adult rose chafer. Photo by Lorraine Berkett, University of Vermont

Banded Grape Bug & *Lygocorus inconspicuous* – Continue to be vigilant about scouting for banded grape bug (Figure 2*) and Lygocorus inconspicuous* (Figure 3) nymphs if your grapes are not yet in full bloom. 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. Scout by tapping flower clusters over a paper plate and count the nymphs that fall off. Only the nymphal stage of these insects is harmful in grapes.

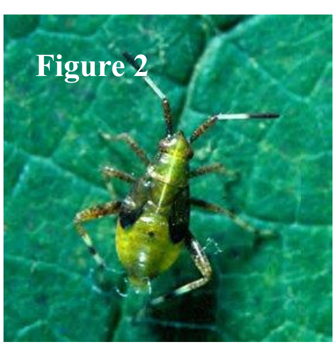

Photo Credit: Joe Ogrodnick, Cornell University, courtesy Greg Loeb

Banded Grape Bug identification and scouting technique: [video]

Photos courtesy of Cornell IPM, Joe Ogrodnick and Greg Loeb

Honeyvine Milkweed (HvM) – (*Ampelamus albidus*) Honey vine milkweed is beginning to grow, typically growth in the region is 5”-12” but well-established plants may be much larger. HvM is a twining, perennial vine with heart-shaped leaves which grows rapidly and can reach lengths greater than 10 feet (Figure 4). Begin scouting now, and frequently throughout the season, to identify areas with HvM. Record areas or flag areas with HvM in your vineyard. Begin spot spraying (check label for restrictions/precautions/rates) using highest labelled rate when HvM is between 1 - 2 feet in length and/ or before vines start wrapping around grape trunks. Be careful not to allow sprays to contact green, grape tissue. Continue spot spraying as needed.

Photo courtesy of Virginia Tech Weed Science

Please pre-register for the LERGREC Field Day, feel free to contact me if you need help with the registration process.

Office schedule (*June 20th-23rd*)

T 9am-5pm LERGREC North East, PA
W 8am-4:30pm CLEREL Portland, NY
Th Out of office (available by email or phone)
F 9am-5pm Summit Municipal Building, Erie, PA

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