





CROP UPDATE April 28, 2022

Bud Swell-Kim Knappenberger

Cornell Cooperative Extension Lake Erie Regional Grape Program



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Business Management

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

Recruiting Labor in a Tight Market

Counties in the Lake Erie Region had high levels of unemployment throughout the pandemic. Over the last year unemployment rates in the region have declined significantly. The declines have not been nearly as persistent as they were before the pandemic. As a percentage, rates in all counties are higher than pre-pandemic levels. Despite evidence that our region has not reached full employment, there are two important factors to consider when adjusting recruiting techniques for full-time employees. The labor force has continued to shrink, so the 5% that are unemployed are a smaller pool. Also, there had been a large pool of long-term unemployed that were willing to work but not actively looking. It's likely that that pool of available labor has also declined significantly. Recruiting plans for labor need to be modernized. The historical method of asking around at the barbershop or coffee shop is still a great way to find the best candidates – if any exist. Once that method is exhausted recruiting should be done online. This can include social media as well as job board websites. This is typically a good way to find a lot of applicants, even if they're not always highly qualified. If you're not getting applicants through a job website, work on the job description. Again, this does not guarantee that you'll get highly qualified candidates but it helps make sure that you don't miss a good candidate or a diamond in the rough.

A job description should have a clear title. This actually isn't a problem for most growers. Sometimes larger businesses try to make the roll seem more important than it actually is. If the title conveys the wrong message, you'll get the wrong applicants. Honesty goes a long way in attracting the right applicants. Research indicates that more applicants apply when compensation information is included. When it is not included applicants may not actually be interested when it is disclosed. This becomes more important when trying to recruit fully employed individuals.

Applications through job boards provide employers with text and email notifications. Interest in candidates should be communicated very quickly. For hard to find positions, 48 hour responses can provide a competitive edge against other employers.

Job postings may also need to be adjusted a few times to induce applicants. Rather than the applicant you want, you may only get the applicant you need. In other areas it has become standard to reduce education levels, reduce experience required or broaden the experience to something more general. Even flexibility for hours or days worked has become necessary.

Given the labor shortages, these tips are not a complete solution. In this capitalist society, compensation is a large part of the equation. Labor rates may be up 25% in the last 3 years. Currently compensation increases are leveling off, but only for positions that adjusted compensation to be in line with the realities of 2022. If you're replacing a long-term employee, pay may need to be adjusted significantly to attract applicants.

Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

In the Vineyard

In previous articles and podcasts, we talked about the Cation Exchange Capacity (CEC), what it is and the implications for farming our soils. Basically, it is the capacity of the soil (mostly negatively charged particles and organic matter particles) to hold onto the positively charged nutrients (cations) through electrostatic forces (rubbing the balloon on your hair and it sticks phenomenon). If you haven't done it, you know someone who has. Different size soil particles have different capabilities to hold the positively charged nutrients for grapevine uptake, and therefore, CEC of a soil represents the total amount of cations (chemical nutrients) that the soil can absorb, such as calcium, magnesium, potassium, hydrogen, aluminum, iron and manganese. Sodium is also a cation, but it isn't present in humid NY soils in large quantities. This is an important part of understanding how the interactions work and what it means for you in your growing operations. Cations can be classified as Basic, or Acid. In an attempt to not get too 'sciency', think of calcium (Ca²⁺), magnesium (Mg²⁺), potassium (K⁺), and sodium (Na⁺) as Basic, and aluminum (Al³⁺) and hydrogen (H⁺) as Acid. If released into the soil solution, the Basic cations will increase soil pH and the Acid cations will decrease soil pH.

Okay, here is where we need to talk about soil pH, which is the most important soil characteristic for crop production. When we use the term pH, we are talking about a measure of the activity of H⁺ ions in the soil solution which is usually determined by shaking soil in distilled water. Remember that hydrogen is considered Acid. The more H⁺ ions in the soil solution the lower the pH or more acidic your soil is. A pH measure of 7 is considered neutral, anything under that is acidic while above that is considered alkaline, or basic. Through research, we know that our grapevines grow the best under soil pH ranging from 5.5 to 6.5 because the chemical nutrients required for optimal plant growth are more easily exchangeable, and therefore available for plants under those pH conditions. Look at Figure 1, it depicts how pH affects how the soil either holds onto or releases nutrients under different pH; pH between 5.5 and 6.5 releases important nutrients into the soil solution for grapevine uptake. If pH is too low, then the nutrients required by our vines are held tightly to the soil particles and unavailable, such as phosphorus, potassium, and magnesium, while aluminum will be released and could cause toxicity. If the pH is too high, then we run into nutrient competition, which can cause deficiencies in some instances.

In humid climates such as we have in New York State, the leaching of calcium, magnesium, potassium and sodium ions naturally causes a decrease in pH over time because they leave the soil clays dominated by H⁺ and aluminum ions (Al³⁺), both considered Acid. Our management practices can also change the pH of a soil. When we add nitrogen fertilizers and organic nutrient sources (compost and manure) it leads to the formation of nitric acid (HNO₃) and/or sulfuric acid (H₂SO₄), which cause a decrease the pH of the soil. This is why root growth and plant development suffer when soils become too acid. The Lake Erie Regional Grape Program did a video blog/podcast on this with Dr. Terry Bates that you can watch: <u>Click here to watch.</u>

We know that most of our soils in this region are acidic. We now know what happens to the nutrients that the grapevine requires under acidic conditions, so what can we do about it? LIME! Liming materials are used to bring the pH of a soil to optimum levels for our grapevine production.



Figure 1. pH affects how the soil attracts and releases nutrients. In high pH soils, iron manganese and boron are often not accessible to plants. (Chart Source: Ohio State University Extension)

These materials are made up of alkaline substances (Basic that can raise pH). Agricultural lime is calcium carbonate and can also be a mixture of calcium and magnesium if dolomitic limestone is applied. The way it works in the soil is a two-step process that involves replacement of H⁺ and aluminum ions (Al³⁺) on the clay surfaces with Ca from the liming material followed by neutralization of the acidity. I know I said not too 'sciency', but it is important to understand why we add lime and how it helps with pH to make the nutrients chemicals available for grapevine uptake. Adding lime to the soil alleviates the dangers of low acid as well as adding necessary calcium and sometimes magnesium. Terry Bates has talked about

it as being the Alka-Seltzer for the soil. When we have a sour, or acidic, stomach we take products to help neutralize the acidity. Lime is to soil as Alka-Seltzer is to us. Because lime dissolves very slowly, it must be finely ground to neutralize soil acidity effectively. Using cover crops can help move lime into the soil profile more efficiently in our no-till systems through the voids left behind from their root structure.

Back to why it is important to understand CEC, the higher the CEC, the larger the quantity of lime that must be added to increase the soil pH; sandy soils need less lime than clay soils to increase the pH to desired levels. A soil with a large buffer capacity (more clay size particles and/or organic matter) will need more lime to neutralize acidity than a soil with a small buffer capacity. Purity of your lime amendment is very important. When buying lime, know what purity level you purchase to ensure you correctly apply for optimal lime additions. Generally, however, you need more lime the lower your pH is. Per the Wine Grape Production Guide for Eastern North America (the resource we use when giving nutrient recommendations), applying more than 2 ton of lime in a year may induce potassium deficiency. Lime takes years to move through the soil and repeated applications may be necessary to maintain a pH of at least 5.8. Higher pH is often warranted to increase potassium availability. This is important if aluminum levels remain high.

Liming will provide the following benefits:

- reduces the possibility of Mn2+ and Al3+ toxicity
- improves microbial activity
- improves soil structure
- improves symbiotic nitrogen fixation by legumes
- provides an inexpensive source for Ca2+ and Mg2+ when these nutrients are deficient at lower pH
- improves nutrient availability as pH increases at 5.5-6.5

Soil pH is the most important soil characteristic for our vineyard production. Getting your pH range closer to 6.5 should be the number one floor management on your list. I shoot for 6.5 because

of the natural acidification and other inputs we do that cause the pH to decline. We offer nutrient recommendations as part of our grower membership. We also offer information on soil testing: Basic Soil Sampling Instructions: <u>WATCH SOIL TESTING VIDEO</u>. You can bring your soil samples to the lab and we can assist in sending them out for you. If you choose to use another soil lab other than Dairy One and are looking for nutrient recommendations, then please be sure that you have a digital copy to send to me so that I may review them.

Current Phenology

The research staff at CLEREL tracks Concord phenology throughout the growing and has continued these efforts over four decades. This information is useful for looking at trends and average dates of grapevine growth, for instance, the average date for the last four decades for Concord bud break, score 4.0 on the Modified Shaulis Field Score (MSFS) or when 50% of the buds have half or more of the leaf edge exposed, is May 4th. Last year we called bud break on April 20, 2021. Many of you remember the frost/freeze events in the end of April and beginning of May in 2021 because the phenology was further along. As of the beginning of this week, CLEREL phenology vines are at a 2.5, or Intermediate swell", on the MSFS. I have received many questions on the snow event we experienced on Wednesday of this past week and whether or not the buds could have experienced damage. Work by Stan Howell of Michigan State and Terry Bates, CLEREL Director, helped put together the visuals below (Figure 2. And Figure 3.) We also handed these out at the Coffee Pot Meeting held at Nick Mobilia's Arrowhead Winery on Wednesday. Figure 3. is the Modified Shaulis Field Score with corresponding photos to track the phenology in your blocks and better understand the numbers that I report to you. Figure 4. is the visual of Critical Temperatures that different phenological Concord stages can withstand. Looking at a 2.5 on the MSFS, and the corresponding photo on the Critical Temp Figure, the buds at this stage should be hardy to a temperature of 26 degrees Fahrenheit, and we did not get that low in our region. That isn't to say that all buds are created equal. If you have some that are further along on the MSFS, then you should go out and assess any damage. Photo 1. was taken by Kim Knappenberger at CLEREL Wednesday afternoon when sap from the bleeding vines froze.



Figure 3. Critical Temperature for Concord grape phenological stages

Modified Shaulis Field Score

-20-	1.0	Dormant Bud	Sho
	2.0	First Swell brownish wool clearly visible	oot and
	2.5	Intermediate Swell half or more of bud doeskin visible	Inflor
	3.0	Full Swell pink on side of bud	escer
	4.0	Budbreak half or more of leaf edge exposed	ICE De
×	4.5	Leaf Emergence	velop
	4.8	Full Leaf Blade Visible	ment
24	5.1	Flat Leaf Stage one leaf perpendicular to shoot	
	9.05	First Bloom 5% florets open	Flov
	9.50	Bloom 50% florets open	vering
	9.80	80% Bloom majority of caps off	B
	10.2	Fruit Set berry abscission fruit >2mm diameter	erry D
1 Ser	10.7	Pea-sized Berries fruit 7mm diameter	evelop
	10.9	Berry Touch	oment
	11.5	Veraison 5% of berries have color	Rip
	12.0	Maturity Fruit ripe for harvest	ening

Figure 2. The Modified Shaulis Field Score

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photo 1 . was taken by Kim Knappenberger at CLEREL Wednesday afternoon when sap from the bleeding vines froze.

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Announcement!

Pesticide Applicator Course and Exam and CORE Credit Opportunity-UPDATED!

We have had growers reach out to inquire where they can get their pesticide applicator license and others have requested how to get CORE credits. I have been working diligently with the New York State Department of Conservation to set up courses. The NYSDEC will be holding a course on May 12, 2022 at the Cornell Lake Erie Research



and Extension Laboratory in Portland, NY. The presentation will have CORE credits attached to it and it will also serve as a prep course for the certification exam. If you already have your license and need credits, please be certain to bring your card for sign in.

You must register for this CORE training!



UPDATE: You will be able to register for the test at the end of the training class. Please bring a check for \$100.00 made payable to the NYSDEC and valid identification. We will have a notary on sight.

On May 19th, 2022, at 9:30 AM, the NYSDEC will return to CLEREL to offer the pesticide applicator certification exam to those interested. Below is the information sent to us by the course instructor and we will provide more details as they develop:

How To Get Certified & Regulatory Updates Presentation

This presentation will discuss the requirements for becoming a certified pesticide applicator as well as the certification exam process. We will also discuss pesticide regulations, pesticide product registration updates, and the federal Worker Protection Standard (WPS). Recordkeeping and WPS informational handouts will be available. This presentation will provide NYSDEC recertification credits in Core, total credits to be determined.



Updates and Information

Kimberly Knappenberger, Viticulture Assistant, LERGP

NEWA

We had another big week for the stations in the region. As was predicted in the last crop update, the Silver Creek Rainwise station has been taken down and replaced with an Onset HOBO station. One correction from the last update is that this is not a cellular station but the datalogger is connected to the ethernet at the site. As of writing this update the station has not yet been connected to the NEWA network but should be soon. Once the station is again available on newa. cornell.edu you can find it listed as Silver Creek (Route5).

The rain bucket on the Brant HOBO station has disappeared. We fear it has blown away in some high winds. A replacement has been ordered and will be installed as soon as possible. If you use this station, you may have noticed that the precipitation reported seems off since early December. This is not unusual for the winter months as neither of these brands of weather station are able to measure snow fall, only liquid precipitation. There are no heating elements to melt the snow that falls into the bucket. That's why it took a bit to put it all together and we realized that there is a problem. With the warmer weather and rains we were able to detect the problem.



Figure 1 New station in Silver Creek



Figure 2 Brant station with missing rain bucket

As always, if you notice something that doesn't seem quite right, please contact Kim at <u>ksk76@</u> <u>cornell.edu</u>.

Vineyard Improvement Program

DEADLINE APPROACHING!!!!

If you have a project that you have been putting off, now is the time to apply. This grant for Concord vineyard removal will be coming to a close in less than a year! It was recently discovered that the end date for the grant is March 31, 2023. This is 7 months sooner than we had been thinking! This current deadline would mean that all projects will need to be completed this year and final expenses reported by January 2023 to give time for the reimbursements to be completed by the end of March 2023. There is still quite a bit of money available for projects, but you will need to act now and get the removals done this year. All acreage involved in this project does need to continue to be agricultural. The cleared land will need to be planted to a seed crop this fall and have a final site visit completed before the snow flies this winter. At the final site visits we look for complete removal of vines – no/few grapevines growing in the crop, and crop growth of at least 4-6 inches in height.

If you would like to learn more, please visit <u>lergp.com</u> and click on the big purple Vineyard Improvement Program button. Or you can email Kim at <u>ksk76@cornell.edu</u>.



Spotted Lanternfly Traps

We are starting to nail down the locations for the Spotted Lanterfly traps for this year. These will be to monitor the area for detection of the pest. It is not established in this area at this time and we are hoping to detect as soon as possible. There are no lures in these traps and they will not draw the pest to the area, they are a simple way to detect their presence.

At the Coffee Pot meeting this week a grower mentioned the possibility of individuals constructing their own traps to monitor the acreage near their farms. We think this is a fantastic idea!!!! If you are up to a bit of "arts-and-crafts" time I am including two links below to 2 variations of the circle trap.

https://youtu.be/f5AW30VG1o0 https://extension.psu.edu/how-to-build-a-new-style-spotted-lanternfly-circle-trap



Once these traps are up you can simply check the collection bag to see what you have collected. If you find something that you suspect is Spotted Lanternfly please either contact any LERGP team member or report it directly.

Report Spotted Lanternfly Sightings (https://nysipm.cornell.edu/environment/inva-

sive-species-exotic-pests/spotted-lanternfly/)

If you find Spotted Lanternfly in New York:

- 1. Take pictures of the insect, egg masses, or infestations.
- 2. If possible, collect the insect. Place in a bag and freeze, or in a jar with rubbing alcohol or hand sanitizer.
- 3. Note the location (street address and zip code, intersecting roads, landmarks, or GPS coordinates)
- 4. Send the information to NYS. Dept. Agriculture and Markets in one of these ways:
 - a. Spotted Lanternfly Sighting Report Form
 - b. Email pictures and location to spottedlanternfly@agriculture.ny.gov



Currently they are in the egg mass stage of development. Hatch and First Instar should begin in May. The first sign of them will look like this:

Hatch and First Instar: May-June First instar spotted lanternflies. Photo by Emelie Swackhamer.





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

In the Vineyard

With Concord buds starting to swell, now is the time to scout for 2 pests that feed on grape buds – grape flea beetle and climbing cutworm.

Grape flea beetle – GFB overwinter in the adult stage and emerge as grape buds begin to swell. Beetles are small (3/16") and metallic blue in color (Figure 1). The most significant injury caused by this pest is due to adults feeding on swollen grape buds, often consuming enough tissue to destroy the developing bud (Figure 2). By about 1/2" growth the threat of economic loss from this pest is over. Larvae feed on leaves but the extent of injury is usually negligible.

The largest populations of flea beetles are most often around wooded or overgrown edges of vineyards. Scout vineyard rows bordering these areas frequently during the bud swell stage. Examine canes for injured buds and for the presence of adult beetles. Beetles are most active on warm, sunny days and will jump like a flea when disturbed. Areas with bud injury of 2% or greater would warrant an insecticide treatment. (Grape Flea Beetle fact sheet available at: <u>https://ecommons.cornell.edu/handle/1813/43101</u>.

<u>Climbing Cutworm</u> – about a dozen different species of cutworm larvae have been documented in vineyards and will feed on grape buds during the swell stage. The larvae are immature stages of noctuid moths. Larvae have a brown to gray coloration with darker stripes or dots along the body. A common climbing cutworm found in Pennsylvania and New York vineyards is the spotted cutworm (Figure 3). Larvae hide under stones or weeds beneath vines during the day and climb vines to feed at night. Vineyards with weed cover under the trellis and areas with sandy soils are at greater risk for injury.

Scout frequently during the bud swell stage. If bud injury is detected, then examine weeds/soil beneath vines for presence of larvae. Areas with bud injury of 2% or greater would warrant an insecticide treatment. (Climbing Cutworm fact sheet available at: <u>https://ecommons.cornell.edu/</u><u>handle/1813/43085</u>).



Figure 1. Adult Grape Flea Beetle. Photo: https://ecommons.cornell.edu/ handle/1813/43101



Figure 2. Flea beetle injured grape bud. Photo: https://ecommons.cornell.edu/handle/ 1813/43101



Figure 3. Spotted Cutworm Larva. Photo: https://ecommons.cornell. edu/han-dle/ 1813/43085

PA Update

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

At the North East lab by the lake we've accumulated about 60 growing degree days (gdds) so far in April (below average), and the forecast indicates that that will be our total for the month. So, a below average gdd accumulation for March and April = later than average budbreak in 2022 (second week in May?). This past night and early morning have seen some scary temperatures in PA vineyards, that range from the low 30s to about 29F, depending on location (warmer by the lake, coldest along the escarpment). Western New York locations along the belt appear to have fared a little better.

Based on what I'm seeing in terms of bud development (late swell, just starting to see some pink or bud break in a low percentage of buds) AND the temperatures from the weather stations, any cold damage should be very minimal. However, coming close to critical temperatures like this is always scary, and may have resulted in damage in some locations, where very local temperatures dropped much lower. The extent of the damage to buds will not become clear until temperatures warm over the next few weeks. One thing is clear: this is not as bad an event as the one that caused extensive damage to grapes last year at this time, and my feelings at this point are that we dodged this bullet with respect to the grape crop (damage to fruit trees may paint a different outcome (?)). Time will tell all. Tonight, we will see another plunge in temperatures, but the forecast is for overnight lows to be slightly warmer than what we just experienced.

Diseases:

A couple of days ago, I received a copy of a notification handed out to grape growers that sell grapes to **Canandaigua Winery – E & J Gallo**. That notification listed pesticides that are prohibited or restricted from application to grapes being sold to them. Assuming this is going into effect this year, I would like to discuss what remaining options such wine growers have for disease control. While powdery mildew programs will be largely unaffected by the restrictions, downy mildew control in the post bloom period will be much more of a challenge.

What are the restrictions?

<u>**Gatten</u>** – This is that 'new' powdery mildew fungicide we've been talking about that has shown to be very effective in Cornell trials. The restriction calls for ending use by 90 days pre-harvest. This pretty much limits you to no later than the immediate pre-bloom/first post bloom spray (maybe the 2nd post bloom for late varieties?) for fruit protection. Since we have plenty of other effective options for powdery mildew following that period (Quintec, Vivando, Endura, Luna, Aprovia, Cevya, difenoconazole, tetraconazole, flutriafol, and tebuconazole products, etc), this restriction should be an easy one to live by.</u>

<u>Mancozeb and Ziram</u> – These 'old standards' are restricted to pre-bloom applications only and this restriction will present a challenge to growers for a number of reasons. The first is that these active ingredients are multisite inhibitors that control a number of diseases that can be serious issues on wine grapes long after trace bloom, namely, black rot, downy mildew, Phomopsis, anthracnose, ripe rot, bitter rot, etc. These fungicides are also very useful for the management of resistance to other, 'at risk' single site, downy mildew fungicides used in the post bloom period.

<u>Coupled with the complete loss of Captan</u>, this leaves only copper/lime for resistance management against downy mildew, after trace bloom. It also leaves only the strobilurins for control of Phomopsis after bloom.

The additional loss of single site inhibitor/rotational partners like mandipropamid (Revus,

Revus Top), zoxamide (Gavel), ametoctradin (Zampro), and fenamidone (Reason) will make downy mildew control very challenging on susceptible varieties especially in wet years and could contribute to the early demise of the few 'at risk' active ingredients left to Gallo growers for downy mildew control after bloom begins (phos acids, Ridomil/copper, and Ranman).

So what do Gallo winegrape growers have left with these new restrictions?

Downy mildew can be a threat as soon as the pathogen becomes active in the spring, about 2-3 weeks before bloom. Under the new Gallo restrictions, mancozeb or ziram can still be used for pre bloom control of black rot, downy mildew, and Phomopsis. However, in wet years, the majority of our downy mildew sprays may end up being applied during the post bloom period because the threat from this disease can linger until leaf fall after harvest if conditions remain wet. For Phomopsis, the research at Cornell has shown that pre-bloom mancozeb sprays are the most important for reducing the impact of this disease on crop loss in most years, especially that early application at 2-6" shoots. This should be followed by applications 10-14 days later and again just before bloom. Nothing new here.

Once bloom begins, your options are:

- Downy mildew: Copper/lime, phos acids, Ridomil/copper, and Ranman
- Black rot: Sterol inhibitors (tebuconazole, tetraconazole, difenoconazole, mefentrifluconazol, flutriafol) and strobilurins (azoxystrobin (not in Erie county PA), trifloxystrobin, pyraclostrobin, kresoxym methyl)
- Phomopsis: Strobilurins; however there is little data on this.

The first post bloom spray for fruit protection on wine grapes (which is also the most critical spray of the season!) should consist of the best of what is available to you for all diseases.

- For downy mildew, I would recommend either Ridomil/copper or Ranman at this time (more rainfast than copper/lime and will provide longer residual control than phos acid materials). Do not tank mix Ridomil/copper or copper/lime with phos acid.
- For black rot and Phomopsis: a strobilurin is about the only thing left to you for Phomopsis, and this fungicide class will also control black rot.
- For powdery mildew, your best choices are Gatten, Luna (sensation or experience), Endura, Aprovia/Aprovia Top.

Here are some examples of potential programs at this time.

1. A combination of Ranman (or Ridomil/copper) and Luna Sensation (a combination of fluopyram (a FRAC 7, very effective on powdery mildew) and trifloxystrobin (for black rot and Phomopsis)) may provide control of all 4 diseases. However, it should be noted that trifloxystrobin in Luna sensation can burn green tissue on Concord grape vines and should not be used on that variety. 2. Ranman (or Ridomil/copper) added to Quadris Top (azoxystrobin (black rot/Phomopsis) + difenoconazole (black rot and powdery mildew)) would also provide control of all 4 diseases, but the difenoconazole might not provide enough powdery mildew control on varieties that are very susceptible to that disease (all the vinifera and many of the hybrids). Also remember to consider using the higher rates of these combination materials around bloom, in order to maximize disease control at this critical time. Keep in mind that azoxystrobin (in Quadris Top) cannot be used in Erie county PA, and that difenoconazole cannot be used on Concord grape and a few wine varieties (read the label).

3. Ranman (or Ridomil/copper) plus a strobilurin (for black rot/Phomopsis) plus a powdery mildew material like Gatten, Luna (experience or sensation), Endura, Aprovia/Aprovia Top...being careful to

rotate FRAC groups from what you used for powdery in the immediate pre-bloom. Also, the same restrictions for difenoconazole (in Aprovia Top) apply: no application to Concord grapes and a few wine varieties (read the label).

The addition of sulfur to sulfur tolerant wine varieties, is recommended at this time for additional powdery mildew control/resistance management. Therefore, programs 1 and 2 would require the tank mixing of 3 different products. Program 3 would require mixing 4 different products.

The second post bloom spray, again, for fruit protection.

- For downy mildew control, you could rotate to Ridomil/copper or a phos acid material. If you
 used Ridomil/copper in the first post bloom spray, rotate to Ranman or phos acid. Again, do not
 attempt to tank mix Ridomil/copper or copper/lime with phos acid fungicides, or you could risk
 burning vine tissues! Copper/lime can be rotated in later with these other materials, primarily for
 downy mildew leaf protection.
- At this time, Phomopsis becomes less of a threat in most years, and one may be able to rely on sterol inhibitors for black rot control instead of strobilurins. Some sterol inhibitors list Phomopsis as one of the diseases they control, but I have not seen hardly any data to base that on. Wine varieties that are cane pruned and trained vertically, are going to be less at risk of Phomopsis (less older wood at or above the trellis wire). Vines that have received leaf removal in the fruit zone will fare better as well, being less susceptible to all of the diseases.
- Powdery mildew control at the second post bloom timing is less critical that at the first post bloom spray but is still extremely important to maintaining clean fruit on wine varieties. The use of sterol inhibitors like Cevya or difenoconazole products (like Aprovia Top, Inspire Super) which are excellent against black rot, may also provide enough powdery mildew control (coupled with sulfur again) to be adequate at this time, especially for less susceptible hybrids. The exception is Aprovia Top, which can be relied upon for excellent control of that disease at any time.

Remember to always rotate FRAC groups, which can get very messy with the use of these combination materials. Keep in mind the 42 day and 30 day preharvest intervals for Ridomil/copper and Ranman, respectively. You'll also want to do your best to honor that 'single use only per season' for Ridomil to delay resistance to that material.

For late season copper use, remember that copper residues on fruit, if high enough, can be lethal to yeasts, messing up your fermentation for wine making. Therefore, you may want to terminate copper sprays several weeks before harvest to avoid that complication and rely on phos acids for downy control closer to harvest, if downy mildew remains a threat late into the season. Then, for downy mildew resistance management, you can switch back to copper/lime after harvest, if conditions still warrant control measures in order to ensure canes get ripe.

These are a few possibilities for the first and second post bloom sprays under the new restrictions issued by Gallo. The resurrection of strobilurins in the first post bloom spray here may seem ironic since we've been preaching not to use them, due to the widespread documented resistance issues with downy and powdery mildew. But strobilurins are about the only thing we can rely somewhat on for post bloom Phomopsis control in the absence of any of the old standards, and they still provide good to excellent black rot control. And there are several products that are combinations of strobilurins with other FRAC groups. Assuming these restrictions go into effect for Gallo growers this season, we'll continue this discussion in the weeks ahead.



2022 LERGP Coffee Pot Meeting Shedule

April 27, 2022	10:00am	Arrowhead Winery	12073 East Main St. North East, PA 16428
May 4, 2022	10:00am	Militello's Farm Supply	2929 Route 39 Forestville, NY 14062
May 11, 2022	10:00am 6:00pm	John Mason, Mason Farms Virtual Zoom Meeting	8603 West Lake Rd. Lake City, PA 16423 <u>register now</u>
May 18, 2022	10:00am	Andrew Nichols	1850 Ridge Rd. Lewsiton, NY 14092
May 25, 2022	10:00am	Alicia & Zach Schneider	771 Bradley Rd. Silver Creek, NY 14136
June 1, 2022	10:00am	Knight Farms	18 Shaver St. Ripley, NY 14775
June 8, 2022	10:00am 6:00pm	TrolleyLine Vineyards Virtual Zoom Meeting	12029 Middle Rd. North East, PA 16428 <u>register now</u>
June 15, 2022	10:00pm	Dan Sprague Farm	12435 Versailles Rd. Irving, NY 14081
June 22, 2022	NO	COFFEE POT MEETING	
June 29, 2022	10:00am	Betts' Farm	7365 East Route 20 Westfield, NY 14787
July 6, 2022	10:00am	Paul Bencal Farm	2645 Albright Rd. Ransomville, NY 14131
July 13, 2022	10:00amLiberty Winery6:00pmVirtual Zoom Meeting		2861 Route 20, Sheridan, NY 14135 <u>register now</u>
July 20, 2022	10:00am	Beckman Farm	2386 Avis Dr. Harbor Creek, PA 16421
July 27, 2022	10:00am	Arrowhead Spring Winery	4746 Town Line Rd. Lockport, NY 14094

Virtual Coffee Pot Meetings Registration:

If you take a look at the coffee pot schedule, you will notice that we have 3 virtual coffee pot meetings scheduled in addition to our in person meetings. They will be in the evenings on the second Wednesday of the months. If you are planning on attending and receiving pesticide credits, you must <u>register on our web-site</u>. In addition to registering, you must supply a copy of your license, date of birth and phone number to me at <u>kjr45@cornell.edu</u>.

The team is excited to be and about visiting the growers during this growing season. We hope that you can come out and join us for some of these meetings.



Need help with pruning? Thinning, suckering, and tying? Canopy management in the summer? Harvest hands?

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