Cornell University
Cooperative Extension

Lake Erie Regio Grape Program

PennState Extension

Newsletter March 2019

Building Strong and Vibrant New York Communities

Diversity and Inclusion are a part of Cornell University's heritage. We are a recognized employer and educator valuing AA/EEO, Protected Veterans, and Individuals with Disabilities.

Winter Conference is next Wednesday!

2019 Lake Erie Regional Grape Program Growers' Conference
March 13, 2019
Williams Center
SUNY at Fredonia Campus

7:00 AM	Tradeshow set up begins
7:30 AM	Registration and Tradeshow open
8:20 AM	Welcome
8:30 - 9:00 AM	Succession Planning *Kevin Martin, LERGP, Penn State University*
9:00 – 10:00 AM	Land As Your Legacy Nationwide Insurance – Sponsored by NY Farm Bureau
10:00 – 10:30 AM	Break
10:30 – 11:00 AM	Alternative Weed Management Practices *Bryan Brown, NYS IPM Program, Cornell University*
11:00 – 11:30 AM	NEWA Updates and Resources for Lake Erie Grape Growers *Dan Olmstead, NYS IPM Program, Cornell University*
11:30 – Noon	Spotted Lanternfly – An Invasive Threat to the Lake Erie Grape Industry *Heather Leach, Department of Entomology, Penn State University*
Noon – 12:30 PM	New York State's Response to Spotted Lanternfly *William Ellsworth, NYS Department of Agriculture and Markets*
12:30 - 1:30 PM	Lunch and Visit Tradeshow
1:30 – 2:00 PM	Vineyard Nutrition *Terry Bates, CLEREL, Cornell AgriTech, Cornell University*
2:00 – 2:15 PM	Roll Out of New Efficient Vineyard Website *Heather Barrett, NYS IPM Program, Cornell University* *Nicholas Gunner, Orbitist*
2:15 – 3:00 PM	Overview of Efficient Vineyard Resources *Kevin Martin, LERGP, Penn State University*
3:00 – 3:30 PM	Disease Management Update, Tips for Resistance Management *Bryan Hed, LERGP, Penn State University*
3:30 –4:00 PM	GBM Management – Was 2018 as Different as We Think? *Andy Muza, LERGP, Penn State University*
4:00 PM	Adjourn

LAKE ERIE REGIONAL GRAPE PROGRAM

2019 GRAPE GROWERS' CONFERENCE REGISTRATION FORM

SUNY Fredonia Williams Center

Wednesday, March 13, 2019

Deadline for registration is Friday, March 1, 2019.

Name (1st attendee) _____ **$**_____

Farm Name _____

Address, City, State, Zip Code _____

_____

Phone_____ **E-mail**_____

Are you enrolled in Lake Erie Regional Grape Program (LERGP)? **Yes**_____**No**_____

REGISTRATION FEES	
LERGP Member 1st attendee	$ 50.00
Additional attendee on same farm	$ 40.00
Non- member	$100.00

Additional Attendees:

	$
	$
	$
	$
	$

*Please add a **$25.00 late fee** for each reservation made after March 1, 2019

TOTAL $_____

Please make check payable to **LERGP (Lake Erie Regional Grape Program)** and mail to:
(*US funds only*)

Kate Robinson
LERGP
6592 W Main Rd
Portland NY 14769

Name _____NY DEC/PA PDA NUMBER_____

Name _____ NY DEC/PA PDA NUMBER_____

Name _____ NY DEC/PA PDA NUMBER_____

Date Ck. Rec'd	**Amount**

Call Kate at 716-792-2800 ext 201 with any questions.

Business Management

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

Succession Planning: For Wineries and Vineyards

Most growers give these issues a lot of thought. If you've got ideas or questions, please head to the growers' conference and share them with your peers. As we discuss succession planning, sometimes the best ideas are your ideas.

A succession plan can be fairly difficult to navigate. By some measure most farm succession plans end in failure. Much of that can be attributed to an unfair definition of failure.

A successful succession plan may not necessarily guarantee that a business stays under family control, it may not guarantee lasting wealth either. The plan should allow the senior generation to live as comfortably as possible. It should also facilitate the success of the junior generation, whether that be through farming or something else.

Employee Based Succession Plans

Poor estate and succession planning can result in the failure of a winery. For some, that can be an emotional loss. Employee based succession planning allows a senior generation to select a passionate successor with shared interests. This is not always the case for familial succession plans. Expanding the scope of what succession means and how to define successful succession can be helpful. Building a relationship with an individual, even if they're outside of the family can be rewarding.

A non-family succession plan can allow the farm business to transfer to the next generation, gradually, despite the lack of family interest. It can also allow a senior generation or even a spouse that is passive in the operation to stay more involved for a greater period of time. That benefit can improve satisfaction and the quality of life in "retirement". It may come at a cost, of course. The sustainability of a business will often require a non-family member to be reimbursed in salary as well as stock. It may reduce the overall size of the estate for children. Weighing the priorities of the senior generation and their business goals for their later years and beyond can help guide the practicality of a non-family succession plan.

This type of plan also has the opportunity to improve the business operations. An employee with the opportunity to obtain equity interest allows a winery or vineyard to recruit better talent with greater expertise. Such an interest can increase productivity, critical thinking, and innovation. If done gradually enough and early enough, this type of plan could improve profit margins to the extent that the value of the estate increases.

If only one spouse is involved in the business, it is recommended that the other spouse would divest himself from business ownership upon the death of the involved spouse. The only financial tool that can really help with divesting to a junior generation is a sizable life insurance. Given the cost of life insurance, divesting can also be partially funded by surviving spousal financing. In this situation a buy out clause would require the junior employee(s) to make payments to the surviving spouse, rather than a lump sum payment upon death.

This type of planning is significantly under-utilized. An interested employee is theoretically a better employee. Without a doubt such an employee/owner is a valuable resource at a critical time. The farm operator that delegates very little risks leaving behind an asset that quickly becomes less valuable without owner management.

Family Based Succession Plan

This of course is the goal of most farm operations. With less than 1% of Americans farming, obviously it is historically challenging. The biggest hurdle is size.

In recent years we had observed an increase in next generation growers. Healthy grape prices were timed to coincide with high unemployment and a recession. Since that trend has reversed itself and off-farm opportunities have gotten healthier since 2015 we should see that trend reverse. As I said in 2015, the increase appears to be an economic function, rather than a long-term pattern. Significant economic growth and an expansion of middle class wages could undermine this trend.

A growth in operational capacity is typically necessary for the temporary support of two full-time owners, rather than one. For wineries with an average bottle price below $20, it typically means pushing case sales up near 10,000.

The size of a vineyard operation is a bit more difficult to define. There is quite a bit more variation in vineyard management practices that growers can use to manipulate profit margins. On one extreme, bulk Concord growers need to work toward 300 acres to support two families. As an alternative to size, one member can supplement income with off-farm labor. Highly leveraged operations that expand quickly, for example, may temporarily rely on this method to mitigate financial risk. An attempt to expand the farm operation and work off-farm requires carefully crafting a plan. Expansion can obviously create a cash crunch. Off-farm income, however, might create a time crunch. If you don't have time to finish that last pre-bloom spray, yields can suffer. It is important to structure and time growth in ways that work with the financial and managerial realities of the operation.

While the analysis of business health is particularly important, personal finance cannot be overlooked. Median household income in Pennsylvania is $51,400. Wineries and vineyards often build businesses with net revenue that regularly exceeds median household income. Doing so, however, takes considerable capital and time.

The personal financial health of the senior generation varies considerably. Not only do businesses have varying levels of success, personal financial decisions and retirement goals also vary greatly.

Asset recommendations vary from advisor to advisor. A typical long-term retirement will require assets of approximately 25 times earnings. Business owners may gradually phase into retirement, potentially working much longer than typical retirees. Even so, assets at retirement age provide a great deal of flexibility in succession planning.

Management Transfer Plan

Building a healthy winery business that supports the goals and expectations for net revenue is just one step toward success. Another critical element is a management transfer plan. Most family operated vineyards are run as a sole proprietorship. Even an LLC, S-Corp or C-Corp is typically run with one individual exclusively holds all titles and responsibilities above day laborer. A division of that management structure, along with a planned out evolution is necessary for success.

There are two temptations, mostly based on grower personality, that are important to avoid. Some business owners like to shut down the stressful parts of the job and prefer to give up all control and responsibility immediately. In this scenario, the next generation is thrown into the deep end without a life jacket. On the opposite end of the spectrum, a senior generation may be unwilling to give up any decision-making. The junior generation is a day laborer with an equity interest. Eventually he too will be thrown into the deep end. With the senior generation unwilling to give up control of management decisions, it happens too late.

A management transfer plan should first capitalize on the strengths of the junior generation. Whether it is computerized payroll management and fiscal analysis of operations or it is soil health analysis, the junior generation needs to be slowly empowered in a way that maximizes success and confidence. Eventually he will have to master all aspects of the business and any relative weaknesses should be addressed. That may involve working closely together on certain aspects of the business. It may also involve outside training. While it is important to have both generations involved in management, it is also important to cross train. For the long-term sustainability of the business, undue reliance on an individual's skillset is not usually a good solution.

Planning For The Unexpected: Buy-Sell Agreement

There are a number of different tools and techniques to plan for the unexpected and to mitigate risk. One element that should be included in any transfer plan that involves a period of joint ownership should include a buy-sell agreement.

This type of agreement allows a partner to exit the business in the event of an unexpected change. Such an agreement spells out the timeline for closing. It either spells out a methodology for valuation or a predetermined valuation. When family is involved, a predetermined discount on the percentage of valuation to prevent the purchase from undermining the farm business. If it is anticipated that finances for all parties will allow a less than immediate payout, an installment plan, rather than a discount, would be another appropriate tool to prevent the buying partner(s) from becoming overleveraged.

Succession planning can often be a complex endeavor. The value of expertise should not be overlooked. While it is important to control costs, devoting some monetary resources to succession planning can be an excellent investment. Once you know what your goals are lawyers and financial advisors can be great at providing unique tools to help you reach those goals.

IPM

Tim Weigle, NYSIPM, Cornell University, LERGP Team Leader

If You Don't Come For the Cookies, You're Probably Here for the Credits…

I'm not gonna lie, one of my favorite parts of the LERGP Growers' Conference are the macadamia nut cookies they bring out at lunch. They just seem to top off a day of great talks, interacting with growers and members of the Lake Erie grape industry, seeing the latest the vendors have to offer, and the all-important pesticide recertification credits. By attending the following sessions at the 2019 LERGP Growers' Conference you are eligible to receive 3 credits toward recertification in New York and 4 for Pennsylvania recertification.

Alternative Weed Management Practices – Bryan Brown, Integrated Weed Management Specialist with the NYS IPM Program, will be on hand to provide the first year results for a project involving the control of field bindweed in grapes. Weed management is a topic that is always brought up when growers are asked what they want to hear more of. This would be a great time to take advantage of Bryan's expertise on not only field bindweed management but for all of your other tough weed management questions.

NEWA Updates and Resources for Lake Erie Grape Growers – Dan Olmstead, NYS IPM Program, is Coordinator of the Network for Environment and Weather Applications (NEWA) http://newa.cornell.edu which provides weather and pest model information for a number of commodities across NYS and the Northeastern United States. With the addition of 10 new Rainwise units in the Lake Erie weather Mesonet during 2018, everyone should have access to weather and pest information that is relevant to their vineyard operation. And if not, this will be a great time to ask Dan how you can get a station for your vineyard.

Spotted Lanternfly – An Invasive Threat to the Lake Erie Grape Industry – Heather Leach, Spotted Lanternfly Coordinator, Penn State Extension, brings a wealth of knowledge on the latest invasive pest from Southeast Asia. Despite quarantine efforts in Southeast PA, where SLF is fully entrenched, we have seen this pest make it up to 8 counties in New York State. Luckily these finds have been found to be individuals that came up by hitchhiking and not from established populations.

New York State's Response to Spotted Lanternfly – William Ellsworth, NY Department of Agriculture and Markets will provide what is being done to prepare New York for the invasion of Spotted Lanternfly. Because they are excellent hitchhikers, it is not a question of if they will establish populations in New York State, but when it will occur. This talk will help provide what can be done to properly identify this pest and report it to the correct agencies so appropriate actions can take place.

Disease Management Update, Tips for Resistance Management – Bryan Hed, LERGP, Penn State University, will provide an update on the latest research-based information on new products. He will also present on how best to develop, and implement, a vineyard disease management strategy to address the control problems encountered in 2017. Bryan will also provide information on incorporating resistance management strategies to ensure materials are available for years to come.

GBM Management – Was 2018 as Different as We Think? – Andy Muza, LERGP, Penn State Extension, will take a look back on if, and how, grape berry moth impacted the 2018 harvest. Was the increase in splitting and cracking of the berries a result of increased pressure by grape berry moth? Are growers effectively using the insecticides and research-based timings provided by the phenology-based GBM degree day model? What are we looking at in 2019 as far as overwintering GBM populations? This talk will be a great opportunity to learn the latest in grape berry moth management.

Roll out of new Efficient Vineyard Website and overview of Efficient Vineyard resources
Heather Barrett – Program/Extension Aide 3, NYS IPM Program, Cornell University, will fill us in on the new Efficient Vineyard website. It is up and running with the same address (Efficientvineyard.com). This brief talk will introduce some new features including a section on the Loaner Sensor Program and a Manual to walk viewers through our Measure, Model, and Manage approach. Feel free to come prepared with questions and suggestions on how we can make the website useful to you and your vineyard operation.

Succession Planning
Kevin Martin discusses how to transition farm management to the next generation. This talk will cover the pitfalls of traditional succession planning and lessons learned from the region and industry. In particular, a succession plan often overlooks the impact a farm manager has and the skills required to make a vineyard operation successful. To maximize the chances of success growers need to set goals, align them across generations and generate adequate resources to implement them.

The Land As Your Legacy® program
Farmers and ranchers devote a significant part of their lives to their family business, which represents their most valued asset. One day, this will be the legacy they pass on to the next generation. Nationwide® developed the Land As Your Legacy® program to help these farmers make the critical decisions that can secure their farms as family businesses. The need for legacy protection provides you with an opportunity to serve your farming and ranching communities, and Nationwide's Land As Your Legacy program is here to help throughout the entire transition planning process.

Loaner Sensors: Lessons Learned
Kevin Martin discusses the impact of the loaner sensor program as we begin provide resources after the efficient vineyard project concludes. Spatial variation in vineyards is difficult to manage. As growers increase in size and try to manage more acres it is also becoming increasingly clear that profitability requires a more granular approach. Soil health, drainage and water are a few factors that contribute to persistent variation within a block. Through the help of the loaner sensor program and the efficient vineyard program we have seen commercial concord vineyards exhibit high levels of variation within a block. If left unmanaged we leave yield potential on the table and unknowingly over-crop parts of blocks. this variation, we can increase both quality and yield across years.

Vineyard Nutrient Management
Terry Bates discusses how to "Feed your grapevines!" What exactly does that mean with respect to vineyard management decisions and optimum Concord production. Vineyard nutrition is a dynamic interaction between soil nutrient availability, root uptake, and vine demand. Nutrient availability is a function of soil physical, chemical, and biological properties. Root biology factors, such as rooting volume, rhizosphere modification, and pest pressure influence total nutrient absorption. The vine demand for specific nutrients changes throughout the season and with different cropping levels. With all of these moving parts, finding the right nutrient management plan for consistent high production can be a challenge. Terry Bates has conducted Concord research looking at nutrition factors such as root biology and distribution, nitrogen efficiency, soil pH, fertilizers, rootstocks, phylloxera, and season long nutrient dynamics. Going beyond soil tests and fertilizer application rates, Dr. Bates will discuss concepts of vineyard nutrition and management practices to reduce fertilizer inputs while increasing vine growth and production.

Cornell University
New York State
Integrated Pest Management Program

FOR IMMEDIATE RELEASE
Media contact: Jennifer Grant | Office: 315-787-2353 | jag7@cornell.edu
For photos: nysipm.cornell.edu/about/we-give-awards/2018-excellence-ipm-award-winners/juliet-carroll/

Formidable Fruit Doyenne Earns Excellence in IPM Award

GENEVA NY, March 1, 2019: Dr. Juliet Carroll, Fruit IPM Coordinator, received an Excellence in Integrated Pest Management (IPM) Award from the New York State Integrated Pest Management Program (NYSIPM) at the Viticulture day of the B.E.V. (Business, Enology, Viticulture) conference in Rochester. NYSIPM develops sustainable ways to manage pests and helps people to use methods that minimize environmental, health and economic risks. The award honors individuals who encourage the adoption of IPM in their businesses, schools, communities, and farms, and who develop new tools and tactics for sharing these practices.

Vital. Invaluable. These are words used to describe Julie Carroll's IPM contributions by her colleagues. Carroll spearheaded the expansion of NEWA, a website and network which allows growers to understand how the weather will affect fungal and insect pests, and takes the guess work out of their pest management strategy. Carroll ran NEWA for over a decade. Timothy Weigle credits NEWA's growth in not only weather stations, but also the number of states participating, to Julie's guidance. Under her leadership NEWA went from 45 weather stations in New York State to over 500 in 12 states. He notes further that her work on improving the user experience with the grape disease and grape berry moth models on NEWA, along with Wayne Wilcox and Greg Loeb, had an enormous impact on the implementation of grape IPM in New York.

Laura McDermott, Regional Extension Specialist in Hudson Falls, NY, noted Dr. Carroll's passion for integrating pest management strategies, and called her "a determined perfectionist."

Carroll also led the development of Trac software. Introduced in the early 2000s, the software simplified and digitized pesticide recordkeeping for large and small growers and processors alike. It allows farmers to input the information once, and generate customized reports for different processors. The software also includes reference to "IPM Elements" for grapes and other crops—a tool that helps growers assess their pest management practices. Grape processors across the state, including Constellation Brands, use TracGrape's reports for their pesticide reporting requirements. Carroll built Trac software for five fruit crops, and partnered with a colleague to create TracTurfgrass for golf, lawns, sports fields and sod farms.

Luke Haggerty, of Constellation Brands, calls Carroll's TracGrape software "a true breakthrough" in record keeping. As a Grower Relations rep for Constellation, he relies on information provided by NEWA: "Julie has always been very proactive in developing and delivering the products needed for our growers to produce grapes in an environmentally and economically sustainable way."

Tim Martinson, Cornell Cooperative Extension Viticulture specialist, noted, "IPM is built on information and decision-making tools. Juliet has built TracGrape and NEWA into useful, practical tools for growers."

Dr. Carroll also co-edited Organic Production and IPM Guides for grapes and several berry crops, and has regularly presented at Lake Erie Regional Grape Growers' conferences and Coffee Pot meetings. She has conducted research on devastating pests such as the Spotted Wing Drosophila (SWD)—investigating whether hungry hummingbirds can provide meaningful control. Dr. Carroll has also chaired the Northeast IPM SWD working groups for the last decade, bringing research scientists, growers, industry reps, and extension educators from across the region together to help find solutions. Carroll has also helped fruit growers with bird management. Tim Weigle noted that her bird-scaring tactics have saved everyone a lot of money and are more popular than the traditional neighbor-alienating air cannon.

Learn more about Integrated Pest Management at nysipm.cornell.edu.

PA Update

Andy Muza, LERGP Extension Team, Penn State Extension- Erie County

GBM Management – Was 2018 as Different as We Think?

Input (from growers, field processor reps., and LERGP colleagues) concerning crop losses in the Lake Erie Region indicated that berry injury due to GBM was more prevalent in 2018 than in the last few seasons.

The question is why?

The rate of insect development is temperature dependent (i.e., within upper and lower temperature limits depending on the insect species). Therefore, warmer temperatures during the season translate into more rapid insect development. Seasonal growing degree day data for 2018 (Base 50 degrees F.) from the NEWA station at the Lake Erie Regional Grape Research & Extension Center, North East, PA (provided by Bryan Hed) shows:

July 2018 – Growing degree day accumulations (752 gdds) marked July 2018 as the hottest July in at least the past 20 years.
August 2018 – A total of 730 growing degree days were accumulated which ranked as the second hottest August in at least the last 20 years.
September 2018 - An accumulation of 539 growing degree days during September, marked this September as the third warmest in the past 20 years.
May 1st to September 30th, 2018 - 2980 gdds were accumulated (about 491 gdds above our average for the past 19 years!).

Since the growing degree day information (Base 50 degrees F.) indicated an exceptionally warm season, it was important to know when the 3rd Generation (GBM Degree Days 1620) and 4th Generation (GBM DD 2430) of grape berry moth occurred across the region.

Knowing when the 3rd and potentially 4th generations occur in any season is important to successfully manage GBM through harvest.

According to the Grape Berry Moth Degree Day Model:
Pest Status - "If 1620 DD occurs prior to August 5, you can expect continuous pressure from grape berry moth through harvest. Model results are not good predictors of timing of population pressures."

Pest Management comments advise - **"Multiple additional insecticide applications may be necessary in high pressure vineyards to address the extended egg-laying and overlapping generations. Continuous coverage is necessary to avoid excessive crop loss. NOTE: Insecticide applications after mid September will have limited effectiveness in preventing damage."**

Checking GBM DD data at all the NEWA stations in the Lake Erie Region indicated that in:
- **Erie County, PA** – the **3rd Generation** (GBM DD 1620) occurred **before August 5** at 50% of the stations and by August 7 at 100% of the stations. The **4th Generation** (GBM DD 2430) occurred by September 7 at 100% of the stations.

- **New York** - the **3rd Generation** (GBM DD 1620) occurred **before August 5** at 31% of the stations and by August 7 at 81% of the stations. The **4th Generation** (GBM DD 2430) occurred by September 7 at 69% of the stations.

In 2018, the 4th Generation of GBM occurred a full 2 weeks earlier compared to the 2017 season.

2018 – GBM DD Model & Insecticide Applications

Following the Pest Management advice in the GBM DD Model for continuous coverage at the start of the 3rd Generation (1620) through mid-September would have resulted in 3-4 or 4-5 insecticide applications depending on the spray intervals:

GBM Insecticide Applications – 14 day Intervals - (e.g., AUG. 7, 21; SEPT. 4, 18?) – [3 - 4 SPRAYS]
GBM Insecticide Applications –10 day Intervals - (e.g., AUG. 7, 17, 27; SEPT. 6, 16?) – [4 - 5 SPRAYS]

Was GBM the only cause of Crop Loss in the Lake Erie Region?

Although GBM was an important contributor to crop loss in the region, particularly in high risk sites, other major contributors included above average rainfall causing berry splitting resulting in high populations of fruit flies and bunch rots.

PA Update

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

A brief overview of the 2018 season and some of the Concord grape trials conducted at the Lake Erie Regional Grape Research and Extension Center

Phomopsis: In 2018, an ice-cold March and April delayed 50% Concord bud-break until around May 9th at our location by the lake. Infection periods for Phomopsis quickly followed (May 11-15 precipitation), leaving unsprayed vineyards with a fresh batch of Phomopsis lesions on the first couple of internodes of shoots. Indeed, waiting to apply that first spray until 3-5" of shoot growth may have been too late to prevent fresh shoot infections in many vineyards (just like in 2017!). Fortunately, cluster stem lesions were not so plentiful as inflorescences were not yet fully exposed during the May 11-15 infection periods, AND the infection event was not quite as lengthy/destructive as in 2017, probably limiting losses to fruit rots later during ripening. *Watch the weather closely* this spring as shoot growth commences and be ready to apply a mancozeb spray *before* the first infection period after cluster exposure, to minimize fruit rots later.

On another note, several fungicides that contain sterol inhibitors and/or succinate dehydrogenase inhibitors, like Aprovia, Revus Top, Luna Experience, and Miravis Prime, list Phomopsis as one of the diseases they may control on their label. Having wondered about the actual efficacy of these materials for Phomopsis control, we put these fungicides to the test in a small trial in early 2018 for control of shoot and cluster stem lesions on Concord grapevines. For positive controls we added Manzate Prostick (mancozeb) and BadgeX2 (fixed copper), which are known to provide control of Phomopsis. Of course, we also included a negative control (no fungicide), and finally, a generic tebuconazole (sterol inhibitor) product, that doesn't carry Phomopsis on its label. Our first application (May 16) was made at about 3" of shoot growth; too late to fully intercept the May 11-15 infection period described above, but early enough to intercept subsequent infection periods. A second application was made on May 21 (just 5 days later) and lesion development on nodes/internodes 1-4 was rated on 10 shoots per treatment in mid-July. Only Manzate and BadgeX2 provided any control of shoot lesions on internodes 1-4 (by 50-53%). On the other hand, cluster stem lesions were controlled by 79, 60, 60, 46, 30, 18, and 9% by Manzate Prostick, BadgeX2, Miravis Prime, Aprovia, Revus Top, tebuconazole, and Luna Experience, respectively. Again, Manzate and BadgeX2 performed best, but there also appeared to be some activity from Miravis Prime on control of cluster stem lesions. It should be noted that it would not be practical to make an application of Miravis Prime at 3" of shoot growth. This trial provides some preliminary evidence that an application around bloom *may suppress* Phomopsis fruit infections, though it would not be recommended as a way to *control* Phomopsis.

As in 2016 and 2017, Black rot and downy mildew disease development in 2018 was generally below average (at least on fruit) for most farms in the Lake Erie region. This was due primarily to two things: i) low over-wintering inoculum levels as a result of dry conditions during much of the fruit susceptibility period in 2016 and 2017 and ii) dry, sunny weather that dominated the period from June 28 to July 21 in 2018. In most vineyards, these two diseases will have to start 2019 from below average levels of over-wintering inoculum. The exception would be vineyards where the wet late summer weather fired up a case of downy mildew on leaves. However, in most vineyards, growers can expect to follow standard spray recommendations unless 2019 turns out to be a particularly wet one.

Powdery mildew was considered moderate in 2018, and slightly down from 2017. However, beware if conditions are right for it in 2019; warm, cloudy, wet/humid. The rapid drop in temperatures after October 11 may have slowed or stopped maturation of immature over-wintering structures, limiting the contribution of late season leaf mildew to the bank of over-wintering inoculum. Nevertheless, if conditions are shaping up to favor powdery mildew early on, scout your cluster/berry stems and leaves *before bloom*. Pre-bloom powdery infections are a big red flag for fruit infections from bloom to 3 weeks later and another good reason to apply your best materials for maximum coverage at short intervals (10 days) from immediate pre-bloom through first (and maybe 2nd) post bloom. If you've been dissatisfied

with mildew control on your fruit lately, you could try one of the newer SDHI fungicides around bloom (Aprovia, Aprovia Top (not on Concord), Luna Experience, Luna Sensation) for powdery mildew control OR tank mix your powdery mildew materials with sulfur (on sulfur tolerant varieties). Just keep in mind that some of these new materials are *likely to be pricey,* making them a tough call for juice grape growers. The best position (best bang for your buck) for a single application of one of these newer materials would be at "first post bloom" spray, when fruit are most susceptible. I have included a little more information regarding these materials below, and I will also be discussing them at our Lake Erie Grape Program Conference on March 13. For more in depth information regarding these newer materials, consult a copy of the New York and Pennsylvania Pest Management Guidelines for Grapes.

In 2018, we started a three-year trial in a mature vineyard of *Vitis labrusca* 'Concord' at the Lake Erie Regional Grape Research and Extension Center in North East, PA. Our objective was to examine the integration of Harvest More Urea Mate into disease management programs for powdery mildew control, as well as effects on brix, yield, and grapevine nutritional status. Treatments were applied to 21-vine plots in a randomized complete block design with four replications. Applications were made every 12-14 days, starting at 3-6" shoots, then 10-12" shoots, immediately before bloom, followed by 2 post bloom sprays (5 sprays total). Treatments consisted of: Harvest More Urea Mate (HMUM at 5 lbs/a), an unsprayed check, a standard rotational program (SRP) of conventional fungicides (rotations of Quintec, Vivando, and Tebustar), and a tank mix combination of HMUM x SRP. Treatments were assessed for their efficacy against powdery mildew on fruit and leaves throughout the summer.

All treatments significantly reduced powdery mildew on fruit, but control levels were fair to poor (32-55% control). The combination of SRP x HMUM was more effective than HMUM alone. On leaves, every treatment provided equally significant - and good (75% by HMUM) to excellent (98% by SRP and SRP x HMUM) - control of disease severity by August 10, during the early stages of leaf disease development. As disease severity increased into late summer, an early September assessment revealed distinct separations among treatments, and powdery mildew control levels by HMUM, SRP, and HMUM x SRP had been reduced to 28, 53, and 79%, respectively. Of particular note is the fact that the addition of HMUM to the SRP, provided significantly better control of leaf disease severity than just the SRP alone. By late September, only programs with the SRP continued to maintain control of leaf disease severity, where control ranged from 25 to 40% by SRP and SRP x HMUM, respectively. Over the next 2 years, we will repeat this trial and also monitor the treatment effects on cluster weight and number, brix, and yield from balanced pruned vines.

Bottom Line: Harvest More Urea Mate is not a fungicide and these initial results suggest that, as a stand-alone treatment, it can provide only modest suppression of powdery mildew on Concord fruit and leaves, particularly in early to mid-summer. However, Harvest More Urea Mate can enhance a Standard Rotational Program of conventional fungicides for improving levels of powdery mildew control on Concord grape fruit and leaves.

Recently new for grape disease management:

- Aprovia: excellent on powdery mildew, suppression of black rot. *Pricey*
- Aprovia Top: excellent on powdery mildew and black rot. More affordable at around $22-35/A, but unfortunately, not for use on Concord (contains difenoconazole; read the label).
- Intuity: strobilurin for good control of Botrytis, suppression of powdery mildew: Do not use *on V. labrusca, V. labrusca* hybrids, non-*vinifera* hybrids. Do not mix with organosilicone surfactants. To my knowledge, not registered in NY yet.
- Rhyme (flutriafol) and Topguard EQ (flutriafol + azoxystrobin): flutriafol is a sterol inhibitor (powdery mildew, black rot) and azoxystrobin is a strobilurin (powdery/downy mildew, black rot, Phomopsis). Topguard EQ

not for use in Erie county PA (contains azoxystrobin).

New formulations of older active ingredients:

- Dexter Max: mancozeb (downy mildew, black rot, Phomopsis) + azoxystrobin (powdery/downy mildew, black rot, Phomopsis). Not for Erie county PA
- Luna Sensation: fluopyram (powdery mildew, Botrytis) + trifloxystrobin (powdery mildew, black rot, Phomopsis, suppression of downy mildew). Not for use on Concord.
- Trionic: triflumizole (FRAC 3; sterol inhibitor for powdery mildew only, same ai as Viticure)

Brand new materials:

- Miravis Prime: Combination of a SDHI (pydiflumetofen) and fludioxonil (for Botrytis) Expected to receive federal label this year and be available for PA growers. Good to excellent on powdery mildew and black rot, good on Botrytis.

6592 W. Main Rd.
Portland NY 14769

Lake Erie Regional Grape Program Team Members:
Andy Muza, (ajm4@psu.edu)Extension Educator, Erie County, PA Extension, 814.825.0900
Tim Weigle,(thw4@cornell.edu) Grape IPM Extension Associate, NYSIPM, 716.792.2800 ext. 203
Kevin Martin, (kmm52@psu.edu) Business Management Educator, 716. 792.2800 ext. 202

THE LAKE ERIE REGIONAL GRAPE PROGRAM at CLEREL
5592 West Main Road
Portland, NY 14769
716-792-2800

Cornell University
Cooperative Extension

PennState Extension