Lake Erie Regional Grape Program

Crop Update - May 31, 2018

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FURTHER GRAPE FUNGICIDE UPDATES, 2018-Wayne Wilcox

Dates of interest:

***Tuesday, June 5**- LERGP Hopyard Tour- 6:00pm-7:30pm at CLEREL, light refreshments*

***Wednesday, June 6, 2018**- Coffee Pot Meeting (2 per day)*
10:00am- Fred Luke Farm, 1755 Cemetery Rd. North East PA 16428

3:00pm-Thompson Ag, corner of Hanover and Dennison Rds, Silver Creek NY 14136

***Wednesday, June 13, 2018**- Coffee Pot Meeting-10:00am-Vetter Farm, 12566 Versailles Rd. Silver Creek NY 14136*

3:00pm-Jerry Chessman, 11725 Middle Rd. North East, PA 16428

Saturday, June 30- Hops Conference, CLEREL

Tuesday, July 10- LERGP Hopyard Tour- 6:00pm-7:30pm at CLEREL, light refreshments

Tuesday, August 7, 2018- LERGP Hopyard Tour-6:00pm-7:30pm at CLEREL, light refreshments

Wednesday, August 15- LERGP Summer Conference at CLEREL 9:00am-4:00pm

Business Management

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

Pre-bloom Economics: Do the Economics change when temperatures hit 90?

After a rather slow start to the growing season, some unseasonably warm weather has changed everything. A season that looked to be a few days late has turned around and we may see bloom earlier that the long-term average. Eight days ago growers at the coffee pot meeting were discussing strategies for early season spray applications.

How does a rapid bud break to bloom period modify a spray schedule? IPM and research would always point out that coverage and protection are necessary from 3" shoot growth until bloom. From a practical standpoint the modified management strategy is a result of that window of necessary protection may be as short as 14 days. The window of critical protection obviously extends beyond the trace bloom period, but the use of inexpensive EBDC/Captan products for most of our acreage does not.

Regardless of how quickly bloom arrives everyone will likely have one EBDC spray application, hopefully with an excellent powdery mildew material or two. Materials for this immediate pre-bloom spray will cost $33 - $40 per acre.

Additional sprays beyond this immediate pre-bloom are inexpensive. Logistically three pre-bloom sprays may end up not being possible for some growers that had the best intentions. Three pre-bloom sprays will result in a total cost of $50 per acre. Even though there may be some overlap in coverage of EBDC reapplications, maximizing protection through the bloom period, even if it costs $10 in materials makes a lot of sense. Even if the cost of protection per day increases, the number of days that require protection has decreased. Tightening up intervals to ensure adequate coverage throughout the bloom period is the best strategy for dealing with a truncated budbreak – bloom period.

The economic costs of phomopsis are less obvious than other diseases, like powdery. With absolutely no control, even in Concord, powdery mildew could make a crop unmarketable. I'm not sure that has even happened with phomopsis. We have frequently seen crop losses, even in low yielding years, that exceed $200 per acre. Excellent control of phomopsis costs less than $25 per acre per year. While the threat of powdery is more obvious, we also typically invest significantly more to control it. Growers may invest $60 per year and still see less than excellent results. The problem might not be obvious but because the solution is straightforward and inexpensive it is an easy way to increase profitability.

IPM

Tim Weigle, NYSIPM, Cornell University, LERGP Team Leader

And They're Off

The bio indicators are letting us know that Concord bloom is not too far off. Locust trees are in bloom and Dan Sprague Jr. (CLEREL) brought in an example of wild grape bloom on Tuesday morning (5/29/18). While wild grape bloom can be a bioindicator to help predict Concord bloom (so we can get the ever important EBDC spray on prior to the first blossom opening), it is also the biofix used to start collecting degree days for the Phenology based degree day grape berry moth model found on NEWA http://newa.cornell.edu.

Bloom

While the GBM model on NEWA provides an estimated wild grape bloom date using historical weather and phenology information, it also allows the user to input a wild grape bloom date they observed, which is the best way to ensure the greatest accuracy of the model. While the wild grape Dan brought in on Monday is tracking very closely to the estimate provided by NEWA, I have been hearing that wild grape bloom is varying from vineyard to vineyard within an area. So, check out your favorite wild grape vine in close proximity to your vineyard site and continue to monitor GBM development as the season progresses. Another way to monitor grape berry moth is through the use of eNEWA, the daily email that provides updates on weather and pest model results for specific stations chosen by you.

If you have questions on how to implement the GBM model in your vineyard operation, please contact me at thw4@cornell.edu.

NEWA Grape Forecast Models

Select a disease or insect: Grape Berry Moth

State: New York

Weather station: Portland

Date of Interest: 5/31/2018

Calculate

Map | Results | More info

Grape Berry Moth Results for Portland

Wild Grape Bloom: 5/30/2018

Wild Grape Bloom date above is estimated based on degree day accumulations or user input. Enter the actual date for blocks of interest and the model will calculate the results more accurately.

Accumulated degree days (base 47.14°F) wild grape bloom through 5/31/2018: 46 (0 days missing)

Daily Degree Days for Portland

Base Temp	Past May 29	Past May 30	Current May 31	5-Day Forecast Jun 1	Jun 2	Jun 3	Jun 4	Jun 5
47.14F - GBM	NA	32	30	27	19	19	13	12
Accumulation	NA	32	62	90	109	128	142	153

Forecast Details

NA - not available

Download Time: 5/31/2018

Pest Status	Pest Management
First generation of grape berry moth larvae are hatching and beginning feeding. Grape berry moth will not be at significant population levels in all but the highest risk vineyards.	Research has shown that this insecticide timing for the first generation provides little, if any, additional control of grape berry moth in vineyards classified as being at low, intermediate or high risk for grape berry moth damage. However, an insecticide timed with the immediate postbloom fungicide application can be used in vineyards experiencing significant crop loss from grape berry moth on a yearly basis or in high value vinifera blocks

NEWA Model results

PA Update

Andy Muza, Extension Educator, Penn State

In the Vineyard (5-31-18)

Concord bloom in our region should be occurring within the next 2 weeks. This means that the Immediate Prebloom spray (**just before blossoms open**) for diseases is fast approaching. The yearly reminder - the Immediate Prebloom and First Postbloom sprays are critical to protect clusters from Phomopsis, Black Rot, Downy Mildew and Powdery Mildew infections. The Immediate Prebloom spray should include fungicide products which are **highly effective** against all of these diseases.

Phomopsis – This week Phomopsis lesions are visible on Concord leaves (Figure 1). Although leaf lesions will not contribute to the spread of this disease they do serve as indicators to the extent of phomopsis infections which have already occurred. While scouting, check the 2 oldest leaves closest to the base of shoots and examine them for small, black lesions. These dark, pinpoint lesions are often surrounded by yellow margins.

Figure 1. Phomopsis lesions on Concord leaf. Photo - Andy Muza, Penn State - Copy.jpg

Black Rot – leaf lesions (Figure 2) were observed in a Concord vineyard where last year's black rot mummies were easy to find in the trellis. Black rot has not been a problem in the majority of vineyards in our region in the last few years. However, if you can find old black rot mummies in the trellis or find leaf lesions now then you should be particularly concerned about potential fruit infections during the Immediate Prebloom through Early Postbloom periods.

Figure 2. Black rot lesions on Concord leaf. Photo - Andy Muza, Penn State - Copy.jpg

Powdery Mildew – a surprise this week while checking vineyards was that powdery mildew was observed on some leaves at a Concord site (Figure 3). In the past, when powdery mildew was found in Concord vineyards this early (before the Immediate Prebloom period) then later berry infections were commonly seen throughout the region. **This serves as a warning**, berries of all varieties are most susceptible to infection from the Immediate Prebloom through Fruit Set period and need to be protected.

(Check the NEWA station http://newa.cornell.edu closest to your vineyard blocks for 5-day weather forecasts and for disease models).

Banded Grape Bug – Nymphs were observed on flower buds at a Concord site (Figure 4). Nymphs feeding on flower buds (1 nymph/10 shoots) can cause yield reductions so scouting should be conducted for this pest. For information concerning **Plant bugs** pest see Greg Loeb's "Grape Insect and Mite

Pests – 2018 Field Season" pages 5-6 in LERGP Vineyard Notes – May 2018 https://nygpadmin.cce.cornell.edu/pdf/newsletter_notes/pdf100_pdf.pdf).

Figure 3. Powdery mildew lesions on Concord leaf. Photo - Andy Muza, Penn State - Copy.jpg

Figure 4. Banded grape bug nymph on Concord flower buds. Photo -Andy Muza, Penn State - Copy. jpg

North East PA Update

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

Weather: We have accumulated 4.0" of rainfall so far in May at our site by the lake (only 0.11" inches within the past week), above our 20 year average of about 3.7". We have accumulated about 393 growing degree days (gdds) in May (way ahead of average for May (263)!), and the warmest May in at least the past 20 years! We've accumulated 413 gdds as of April 1, putting us well ahead of average for heat accumulation since April 1 (what a difference a month makes). For North East PA, there is currently rain in the Skybit forecast for Friday, June 1. A longer range Accuweather forecast shows rain also on Sunday, Monday, and possibly Tuesday. Temperatures will remain above average until Saturday when June will usher in cooler and more average temperatures over the next week or so.

Phenology: Concord shoots have been growing at a rate of about an inch a day over the past week. Depending on site, this means that shoots have doubled or nearly tripled in length over the past week. We currently average about 12" in length and show 5-6 leaves unfolded, here by the lake.

Diseases: According to NEWA, our last infection period for Phomopsis and black rot occurred on the 27th of May. The lack of rainfall over the past week has lowered pressure a bit for some diseases, but there is still a need to remain vigilant with respect to our pre-bloom sprays. Andy Muza has spotted black rot and powdery mildew on leaves already, at a site known for wet, humid, shady conditions. This means that where there is inoculum in the trellis, the weather conditions have been favorable for these two (and other) diseases. Scouting here at our farm has not revealed any of these diseases yet, but we are seeing Phomopsis lesions on the first through third internode regions of unprotected shoots. Leaf spots of Phomopsis are also evident at those basal node positions. These symptoms are likely a result of infection periods that occurred around the middle of May, when shoots were just 1-3" in length. Basal internodes that got infected early in their expansion (around the middle of May) are likely to have more severe lesion development than basal internodes that got infected near the end of their expansion (right about now). The same goes for leaves.

Hopefully growers have already applied their 8-12" shoot stage spray and are poised to apply a timely immediate pre bloom application of fungicide before the first caps fall. If you haven't put anything in for powdery or downy mildew yet, you definitely want to include materials for those two diseases at this next spray. Inoculum levels for downy (as well as black rot) are expected to be relatively low and forgiving in most Lake Erie region vineyards (unless you had a lot of these diseases last year) but we're not 'out of the woods' yet. Remember, the trigger for downy mildew is the 5-6 leaf stage (most area vineyards are at or past that point).

And one last thing. The fact that Andy found powdery mildew on leaves already (well before bloom) is a big red flag. Powdery mildew is the one disease we saw plenty of last year and the warm temperatures (that have not been cooling down at night) and humid conditions are perfect for building upon the primary infections we've already had, and churning out the first of the secondary spore cycles of the pathogen. Therefore, pay close attention to your powdery mildew spray plan and keep fruit well protected with a timely, effective immediate pre, and immediate post bloom spray. Do not rely on sterol inhibitors, strobilurins, or stylet oil during this critical period of fruit protection coming up. Once berries have reached about a quarter inch in diameter (about 2-3 weeks after bloom), they are no longer susceptible to heavy infection by powdery mildew and fruit will come out pretty clean if they're well protected through that critical period of high susceptibility.

FURTHER GRAPE FUNGICIDE UPDATES, 2018

Wayne F. Wilcox
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Bryan Hed from Penn State has recently prepared and distributed an excellent and comprehensive update on the grape fungicide scene. Rather than repeat the information that he provided, for which there's no need (read and save it if you haven't already), I'd simply like to make a few brief additional points and provide a further perspective on some of the new(er) products available.

Within this context, I'm also providing the detailed results of three fungicides trials that we (that being the royal "we", technician Dave Combs did all of the real work) conducted in Geneva last year, for those who might be interested (others can just read the cut-to-the-chase comments below). These are pretty busy tables and it's easy to get lost in the weeds, so a few bits for context for those who wish to wade into them:

- All three trials were conducted in a manner where each treatment was applied to four individual "replicate" plots scattered randomly throughout the block/s of vines (the downy mildew treatments were applied in two separate blocks, one of Chardonnay to evaluate control on leaves, one of Chancellor to evaluate control on clusters). Each of the plots consisted of a single panel containing four vines. Treatments were applied using a hooded-boom sprayer (similar to the Lipco units, without recirculation) to prevent drift onto vines belonging to a different treatment. Spray volume was 50 gal/A through bloom and 100 gal/A postbloom.
- Data are presented in terms of disease incidence and disease severity. Incidence refers to the percentage of leaves or clusters that had <u>any</u> disease, severity refers to the percentage of the surface of each leaf or cluster that showed disease symptoms. <u>Severity is the more meaningful measure</u>, but we present both: a treatment with a low severity rating was clean, but if it had a low incidence rating as well, it was clean as a whistle. The data presented are the averages ("means") for all four of the replicate plots per treatment. The accompanying statistical analyses are useful but need to be interpreted knowingly: if the mean values for two treatments are "significantly different", that means that there is a 95% probability that the difference is "real" and not just the result of random variability among the four small plots of each treatment. Conversely, if they are not significantly different (i.e., they are followed by a common letter in the table), there is less than a 95% chance that the difference is real. But this does not distinguish between a 94% chance of a real difference and a 2% chance of a real difference. Some people tend to lose this perspective when they note that differences between two treatments "were not significant".
- These trials are designed to look at relative differences among various materials, so do not reflect real-world usage patterns in several respects. For example, we often spray a single product throughout the entire season, without rotation. Not a recommended practice of course, but when a new product "works" in a rotational program, it's often difficult to tell whether the new product was doing a bang-up job or if most of the heavy lifting was being done by the rotational partners, which are usually known to be effective. Furthermore, vines in these plots are subjected to greater disease pressure than they would be in most commercial settings: there is high carry-over inoculum from last year from unsprayed check plots and relatively ineffective treatments, there is current-season inoculum for disease spread being produced from the same, we start later on the PM and DM trials than would be recommended for commercial growers, we typically use 14-day intervals for the PM and DM trials even when it's raining all of the time (e.g., last June and July), we use highly susceptible varieties, our Botrytis trial is in a block surrounded by woods where air circulation is dreadful. In other words, we get more disease than a decent

commercial grower would, and materials or programs that look mediocre for us might be just fine in a commercial setting where someone isn't doing all they can to turn up the pressure. But it does allow us to see which materials or programs are most likely to break if things start going south (as they do from time to time) and which ones can take the heat.

CUT TO THE CHASE:

- *Pre-mix products.* More and more manufacturers are developing "combination" products that mix two active ingredients. Unfortunately, you need a calculator and a little time to determine just how much of each component is being provided at the labeled rate/s, which can vary among competing products even from the same manufacturer. Table 1 ("Comparative doses of individual active ingredients provided by 'combination products' at label rates") has been updated to account for several new products on the market.
- *Luna Experience (LE)*. Discussed for several years, finally available to NY growers (except those on Long Island). All of the major companies are developing and releasing "new generation" SDHI (Group 7) fungicides, but LE has been the one that has given consistently top control of both PM and Botrytis in my trials over the years (see Trt #9 in Table 2; in general, results from the 2017 Botrytis trial were not definitive, but note that LE [#6, Table 4] and Elevate [#1] were comparable). As Bryan mentioned, we've found in previous years that 6 fl oz/A, the rate recommended for PM control, is adequate for Botrytis during the bloom/post-bloom period. That is, you don't need to spend the extra bucks to go up to the 8 fl oz rate unless you want the extra tebuconazole for black rot. Which you won't need if you're tank-mixing with mancozeb for DM control or if you bump with an extra 1.25 oz/A of a generic tebuconazole 45DF generic (e.g., Toledo).
- *Luna Sensation*. A product just released, after Bryan's article was published. A combination of the SDHI component of Luna Experience (fluopyram) and trifloxystrobin, the active ingredient in Flint. Not sure what this brings to the table that LE doesn't, perhaps an extra bit of Botrytis control if strobilurin resistance isn't an issue. But the only place where Botrytis resistance to strobilurins has been investigated (Virginia, by Anton Baudoin at VPI), it was found to be rampant in commercial vineyards. Quite a rate range for Sensation, check to compare what you're paying per ounce of fluopyram versus Experience, since this active ingredient is why you'd buy either product.
- *LifeGard*. Labeled for use in NY (including Long Island) last year. Over the years, I've tested a number of products purported to induce the grapevine's natural defense system/s, but none of them have controlled disease. Until LifeGard. Last year was the third time out of three trial years that LifeGard provided downy mildew control comparable to commercial standards, even under very high pressure (see Table 3). It was the first year that we looked at it against powdery mildew and it did very well by itself (Trt #1, Table 2) and was outstanding in a rotational program (Trt #2, compare with #5 to see the LifeGard contribution to that program). Unfortunately, it didn't do much for Botrytis control (Trt#7, Table 4). We'll be looking at it again against all three diseases this year.
- *Prolivo (pyriofenone)*. Recently labeled in NY, including Long Island. In the same family (resistance group) as Vivando, controls PM only. Last year was the first time we looked at it. Unwise to draw firm conclusions from one trial, but in this one look it was close to Vivando although a tad less efficacious (compare Trts #6, 7, and 8 in Table 2).
- *Fracture*. Discussed previously, and by Bryan. My results are very similar to his: only so-so control of PM (Trt#24, Table 2) but control of Botrytis comparable to commercial standards (Trts #8 and 9, Table 4). We've obtained similar results against both diseases in previous years and also have seen efficacy against sour rot. Pricey, as Bryan notes, but might have a fit in

some late-season programs for rot control, especially for those who are interested in the fact that it is considered safe enough that there are no EPA limits on its residue levels.

- *Aprovia/Aprovia Top*. Discussed well by Bryan. See Table 1 to compare the amount of the active ingredients (solatenol, also difenoconazole for Aprovia Top) provided by different rates of these products and others containing difenoconazole. Aprovia has provided excellent control of PM in my previous trials (it was not included in 2017), but unlike Luna Experience, it does not provide control of Botrytis.
- *Oils and oil-like products*. See Trts #20-23 to compare the powdery mildew control provided by JMS Stylet Oil, two rates of Timorex Gold, and Thymeguard on season-long programs: JMS was modestly to substantially more effective, although to be fair I would have expected the other two to do a lot better if the spray interval had been shorter (they probably washed off with the heavy rains). Also note the excellent control provided by JMS in a rotational program (Trt#3). Surprising to me, both Timorex Gold and Thymeguard provided significant control of downy mildew when applied at 7-day intervals (Trts #10 and 11, Table 4). None of these products provided control of Botrytis (Trts #10-12, Table 4).

Table 1. Comparative doses of individual active ingredients provided by "combination products" at label rates

		Active ingredient, amount provided (oz/A)											
Product	Label rate (per acre)	azoxystrobin	copper hydroxide	cyprodinil	difenoconazole	fluopyram	flutriafol	mancozeb	mandipropamid	solatenol (benzovindiflypyr)	tebuconazole	trifloxystrobin
Abound, Azaka 2.08SC	10.0-15.5 fl oz	2.56-4.0										
Aprovia	8.6-10.5 fl oz									0.89-1.09		
Aprovia Top	8.5-13.5 fl oz				1.03-1.64					0.69-1.10		
DithaneM 45 80WP	1.5-4.0 lb							19.2-51.2				
Flint 50WG	1.5-4.0 oz											0.75-2.0
Flint Extra	3.0-3.8 fl oz											1.52-1.92
Gavel 75DF	2.0-2.5 lb							21.3-26.7				
Inspire Super	16-20 fl oz			4.18-5.23	1.46-1.83							
Kocide 2000	1.5-3.0 lb		12.9-25.8									
Luna Experience 3.3SC	6.0-8.6					1.25-1.80					1.25-1.80	
Luna Sensation	4.0-7.6 fl oz					1.05-2.0						1.05-2.0
Quadris Top 2.7SC	12-14 fl oz	2.51-2.92			1.58-1.83							
Revus Top 4SC	7 fl oz				1.82				1.82			
Revus 2.08SC	8 fl oz								2.08			
Rhyme 2.08SC	4-5 fl oz						1.04-1.30					
Ridomil Gold Copper	2.5 lb		24.0									
Ridomil Gold MZ	2.5 lb							25.6				
Switch 62.5WG	11-14 oz			4.13-5.25								
Tebuconazole 45DF generics	4.0 oz										1.80	
Topguard EQ	5.0-8.0 fl oz	1.54-2.46					1.14-1.82					
Vangard 75WF	10 oz			7.5								

?

Table 2. Control of powdery mildew on 'Chardonnay' grapes, 2017 (Geneva, NY)

		% POWDERY MILDEW [% control][z]											
Trt #, Material and rate/A	Timing[y]	Leaf incidence			Leaf severity			Cluster incidence			Cluster severity		
1. Lifegard WG 4.5 oz [x]	1 thru 7	60.0	c-g	[40]	12.5	g-k	[86]	33.8	d-j	[66]	6.5	d-h	[93]
2. Lifegard WG 4.5 oz [x]	1,3,5,7												
Vivando 300SC 10.0 fl oz [w]	2												
Luna Experience 6.0 fl oz [x]	4												
Microthiol 5.0 lb [v]	6	42.5	f-j	[58]	2.9	h-k	[97]	7.5	ij	[93]	0.4	h	[99]
3. JMS Stylet Oil 1.5%	1,3,5,7												
Vivando 300SC 10.0 fl oz [w]	2												
Luna Experience 6.0 fl oz [x]	4												
Microthiol 5.0 lb [v]	6	27.5	g-k	[73]	1.6	i-k	[98]	5.0	ij	[95]	0.2	h	[99]
4. Fracture 24.0 oz [x]	1,3,5,7												
Vivando 300SC 10.0 fl oz [w]	2												
Luna Experience 6.0 fl oz [x]	4												
Microthiol 5.0 lb [v]	6	33.8	g-k	[66]	2.5	h-k	[97]	5.0	j	[95]	0.4	h	[99]
5. Vivando 300SC 10.0 fl oz [w]	2												
Luna Experience 6.0 fl oz [x]	4												
Microthiol 5.0 lb [v]	6	98.8	a	[1]	35.3	c-e	[60]	45.0	d-h	[55]	7.0	d-h	[93]
6. Vivando 300 SC 10.0 fl oz [w]	1 thru 7	38.8	f-j	[61]	2.1	h-k	[98]	25.0	g-j	[75]	2.7	f-h	[97]
7. Prolivio 4.0 fl oz [x]	1 thru 7	75.0	a-e	[25]	12.7	f-i	[86]	41.3	d-i	[59]	4.2	e-h	[96]
8. Prolivio 5.0 fl oz [x]	1 thru 7	22.5	h-k	[78]	1.2	i-k	[99]	47.5	d-g	[53]	6.5	d-h	[94]
9. Luna Experience 6.0 oz [x]	1 thru 7	5.0	k	[95]	0.6	k	[99]	12.5	h-j	[88]	1.0	gh	[99]
10. Torino 0.85 EC 3.4 oz [x]	1 thru 7	16.3	jk	[84]	1.5	jk	[98]	13.8	g-j	[86]	0.9	gh	[99]
11. Revus Top 7.0 fl oz[x]	1 thru 7	31.3	g-k	[69]	2.6	h-k	[97]	27.5	f-j	[73]	6.3	e-h	[94]
12. Rhyme 2.08EC, 7.0 fl oz [x]	1 thru 7	58.8	c-h	[41]	5.9	g-k	[93]	38.8	d-h	[61]	4.5	d-h	[96]
13. Mettle 1SC 5.0 fl oz	1 thru 7	82.5	a-c	[18]	32.6	c-f	[63]	85	a-c	[15]	38.5	Bc	[51]
14. Topguard EQ 5.0 fl oz	1 thru 7	48.8	e-j	[51]	6.8	g-k	[92]	26.3	e-j	[74]	3.4	e-h	[97]
15. Topguard EQ 5.0 fl oz	1,3												
Vivando 300SC 10.0 fl oz [w]	2,5												
Quintec 4.0 fl oz [x]	4,6												
Microthiol 5.0 lb [v]	7	57.5	d-h	[44]	4.4	h-k	[95]	45.0	d-h	[55]	3.7	d-h	[96]
16. Rhyme 2.08EC [x]	1,3												
Vivando 300SC 10.0 fl oz [w]	2,5												
Quintec 4.0 fl oz [x]	4,6												
Microthiol 5.0 lb [v]	7	53.8	d-i	[46]	10.7	f-j	[88]	88.8	a-c	[11]	12.4	d-f	[85]
17. Rally WSP 5.0 oz [x]	1,3												
Vivando 300SC 10.0 fl oz [w]	2,5												
Quintec 4.0 fl oz [x]	4,6												
Microthiol 5.0 lb [v]	7	32.5	g-k	[68]	3.0	h-k	[97]	6.3	ij	[94]	0.2	h	[99]
18. Mettle 1 SC 5.0 oz [x]	1,3												
Vivando 300SC 10.0 fl oz [w]	2,5												
Torino 0.85 EC 3.4 oz [x]	4,6												
Microthiol 5.0 lb [v]	7	15.0	i-k	[85]	0.8	jk	[99]	8.8	ij	[91]	0.5	h	[99]
19. Revus Top 7.0 fl oz [x]	1,5												
Vivando 300SC 10.0 fl oz [w]	2,4												
Luna Experience 6.0 fl oz [x]	3												
Microthiol 5.0 lb [v]	6,7	11.7	jk	[88]	1.1	i-k	[99]	16.3	g-j	[84]	1.8	f-h	[98]
20. JMS Stylet Oil 1.5%	1 thru 7	45.0	f-j	[55]	7.8	h-k	[91]	43.8	d-h	[56]	9.4	d-h	[91]
21. Timorex Gold 14.0 fl oz	1 thru 7	100	a	[0]	51.5	bc	[42]	100	a	[0]	46.6	b	[53]
22. Timorex Gold 21.0 fl oz	1 thru 7	95.0	ab	[5]	42.6	b-d	[52]	83.8	a-c	[16]	19.7	cd	[80]
23. Thymeguard 32.0 fl oz	1 thru 7	100	a	[0]	64.4	b	[28]	100	a	[0]	44.8	b	[55]
24. Fracture 24.0 fl oz [x]	1 thru 7	76.0	a-d	[24]	24.0	e-g	[73]	71.3	a-d	[29]	15.7	d-f	[84]
25. Microthiol 5.0 lb (w/o Cohere)	1 thru 7	41.3	f-j	[59]	6.3	g-k	[93]	65.0	c-f	[35]	16.3	c-e	[84]
26. Microthiol 5.0 lb [v] (w/ Cohere)	1 thru 7	47.5	e-j	[53]	5.8	h-k	[94]	70.0	b-e	[30]	7.3	d-h	[93]
27. Untreated check	--------	100	A		88.9	A		100	a		99.8	a	

[z] Spray timings: 1 = 3 Jun; 2 = 15 Jun (pre-bloom); 3 = 27 Jun; 4 = 11 Jul; 5 = 26 Jul; 6 = 9 Aug; 7= 22 Aug

[y] Values represent the means from four replicate plots per treatment, 20 leaves or clusters per plot. Means not followed by a common letter are significantly different according to Student's t-test (*P*=0.05).
Percent control values presented [in brackets] are reductions in disease incidence or severity relative to the untreated check.

[x] "Induce" surfactant included in spray solution at 0.125% (v/v) concentration.

[w] "Kinetic" surfactant included in spray solution at 0.05% (v/v) concentration.

[v] "Cohere" surfactant included in spray concentration at 0.06% (v/v) concentration.

Table 3. Control of downy mildew on 'Chardonnay' (leaves) and 'Chancellor' (clusters) grapevines, 2017 (Geneva, NY)

		CHARDONNAY				CHANCELLOR			
		% Downy mildew [% control][y]							
Trt #, Material and rate/A	Timing[z]	Leaf incidence		Leaf severity		Cluster incidence		Cluster severity	
1. Zampro 14.0 fl oz [w]	1 thru 7	9 g	[91]	0.1 h	[>99]	32 cd	[68]	6 bc	[90]
2. Revus Top 7.0 fl oz [x]	1 thru 7	11 g	[89]	1 gh	[99]	27 d	[73]	2 c	[96]
3. Lifegard WG 2.25 oz [x]	1,2								
Lifegard WG 4.5 oz [x]	3 thru 7	58 b-e	[43]	9 d-g	[88]	55 b-d	[45]	6 bc	[90]
4. Lifegard (exptl. formulation) 128.0 fl oz [x]	1 thru 7	18 fg	[83]	1 gh	[99]	30 d	[70]	6 bc	[91]
5. Phostrol 3.5 pt	1, 2								
Phostrol 5.0 pt	3 thru 7	73 a-d	[28]	11 c-f	[85]	69 bc	[31]	8 bc	[88]
6. Double Nickel LC 32.0 oz + Cueva 64.0 oz [x]	1 thru 7	88 ab	[13]	22 bc	[70]	65 bc	[35]	10 bc	[85]
7. Koverall 2.0 lb + Cueva 64.0 oz [x] CX-30000 8.0 oz + Cueva 64.0 oz [x]	1 2 thru 7	98 a	[3]	30 b	[59]	68 bc	[32]	9 bc	[87]
8. Cueva 64.0 oz [x]	1 thru 7	84 a-c	[16]	13 cd	[82]	64 b	[36]	14 bc	[79]
9. Gavel 75DF 2.0 lb [x]	1 thru 7	39 d-g	[61]	3 e-h	[96]	62 b-d	[38]	15 b	[77]
10. Thymeguard 32.0 oz	weekly	79 a-c	[21]	11 c-f	[85]	60 b-d	[40]	6 bc	[92]
11. Timorex Gold 21.0 oz	weekly	44 c-f	[56]	13 c-f	[82]	75 b	[25]	13 bc	[80]
12. Untreated control		100 a		73 a		100 a		65 a	

[z] Spray timings for Treatments #1-9: 1 = 23 May; 2 = 6 Jun; 3 = 19 Jun; 4 = 3 Jul; 5 = 18 Jul; 6 = 31 Jul; 7= 14 Aug. Weekly spray timings (Treatments #1-9): 1 = 23 May; 2 = 31 May; 3 = 6 Jun; 4 = 14 Jun; 5 = 19 Jun; 6 = 26 Jun; 7 = 3 Jul; 8 = 12 Jul; 9 = 18 Jul; 10 = 26 Jul; 11 = 31 Jul; 12 = 7 Aug; 13 = 14 Aug.

[y] Values represent the means from four replicate plots per treatment, 20 clusters or leaves per plot. Means not followed by a common letter are significantly different according to Student's t-test ($P = 0.05$) performed on arcsin-transformed data; non-transformed values are shown. Percent control values presented [in brackets] are reductions in disease incidence and severity relative to the untreated check.

[x] "Induce" surfactant included in spray solution at 0.125% (v/v) concentration.

[w] "Silwett L-77" surfactant included in spray solution at 0.03% (v/v) concentration.

Table 4. Control of Botrytis bunch rot on 'Vignoles' grapes, 2017 (Geneva, NY)

		% Botrytis bunch rot [% control] [y]			
Trt #, Material and rate/A	Timing[z]	Incidence		Severity	
1. Elevate 50WG 1.0 lb [x]	1 thru 4	48.8 bc	[42]	6.5 b-d	[20]
2. Switch 62.5WG 14.0 oz [x]	1 thru 4	48.8 bc	[42]	7.6 b-d	[48]
3. Vangard 75 WG 10.0 oz [x]	1 thru 4	50.0 bc	[40]	4.4 d	[14]
4. Vangard 75 WG 7.0 oz [x]	1 thru 4	38.8 c	[54]	5.9 d	[14]
5. Luna Experience 8.6 oz [x]	1 thru 4	51.3 bc	[39]	6.1 cd	[33]
6. Luna Experience 6.0 oz [x]	1,2				
Lifegard WG 4.5 oz [x]	3,4	45.0 bc	[46]	9.9 b-d	[20]
7. Lifegard WG 4.5 oz [x]	1 thru 4	63.8 ab	[24]	13.2 a-d	[20]
8. Fracture 32.0 oz [x]	1 thru 4	42.5 bc	[49]	4.8 d	[55]
9. Fracture 32.0 oz (organic form.) [x]	1 thru 4	40.0 c	[52]	5.7 d	[55]
10.Timorex Gold 14.0 oz	1,2				
Timorex Gold 21.0 oz	3,4	57.5 bc	[31]	10.3 a-d	[55]
11. JMS Stylet Oil 1.0 %	1,2				
JMS Stylet Oil 2.0 %	3,4	58.8 bc	[30]	11.9 a-d	[55]
12. Thyme guard 16.0 oz	1				
Thyme guard 32.0 oz	2,3,4	63.8 ab	[24]	18.0 ab	[55]
13. Untreated check	----------	83.8 ab		21.5 a	

[z] Spray timings: 1 = 23 Jun; 2 = 19 Jul; 3 = 1 Sep; 4 = 15 Sep

[y] Values represent the means from four replicate plots per treatment, 20 clusters per plot. Means not followed by a common letter are significantly different according to Student's t-test (P=0.05) performed on arcsin-transformed data; non-transformed values are shown. Percent control values presented for severity data are relative to the untreated check.

[x] "Induce" surfactant included in spray solution at 0.125% (v/v) concentration.

2018 eNEWA Grape Subscription Sign-Up

Subscriber information

Name_____

Email address _____

City_____

Select Location(s) (circle as many as you like, or write in below)

_____

Lake Erie	**Lake Erie**
Appleton, North	**Ransomville**
Burt	**Ripley**
Corwin	**Sheridan**
Dunkirk	**Silver Creek**
East Fredonia	**Somerset**
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Erie	**Westfield**
Fredonia	
Hanover	**Other: Please fill in**
Harborcreek	
Lake City	
North East Escarpment	
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Portland	
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Select eNEWA Delivery Times (write in times below) Delivery requests should be on the hour.

_____

LERGP
2018 COFFEE POT MEETING SCHEDULE

Date	Time	Location	Address
May 2, 2018	10:00am	Clover Hill Farm	10401 Sidehill Rd. North East PA 16428
May 9, 2018	10:00am	Ann & Martin Schulze Winery	2090 Coomer Rd. Burt NY 14028
May 16, 2018	10:00am	Sprague Farms	12435 Versailles Rd. Irving NY 14081
May 23, 2018	10:00am	NE Fruit Growers	2297 Klomp Rd. North East PA 16428
May 30, 2018	10:00am	Double A Vineyards	10277 Christy Rd. Fredonia NY 14063
June 6, 2018	10:00am	Fred Luke Farm	1755 Cemetery Rd. North East PA 16428
June 6, 2018	3:00pm	Thompson Ag	Corner of Hanover and Dennison, Silver Creek NY 14136
June 13, 2018	10:00am	Jim Vetter Farm	12566 Versailles Rd. Irving NY 14081
June 13, 2018	3:00pm	Jerry Chessman Farm	11725 Middle Rd. North East PA 16428
June 20, 2018	10:00am	Duane Schultz	3692 Wilson Cambria Rd. Wilson NY 14172
June 20, 2018	3:00pm	Brant Town Hall	1272 Brant Rd. Brant NY 14027
June 27, 2018	10:00am	Betts Farm	7365 East Route 20 Westfield NY 14787
June 27, 2018	3:00pm	Beckman Farms	2386 Avis Dr. Harborcreek PA 16421
July 11, 2018	10:00am	CLEREL	6592 W. Main Rd. Portland NY 14769
July 18, 2018	10:00am	Tom Tower Farm	759 Lockport St. Youngstown NY 14174
July 25, 2018	10:00am	Ziesenheim	8760 W. Lake Rd. Lake City PA 16423

INSURING GRAPES

NY, 2018

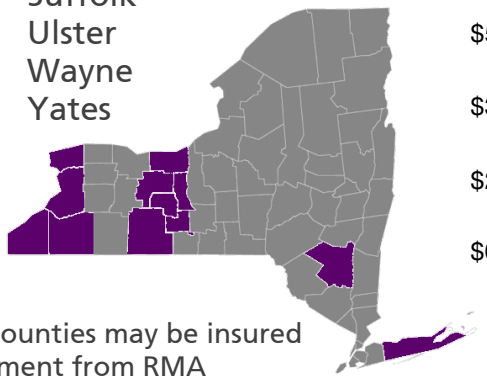
Crop insurance is a safety net for farmers that helps you **manage risk**. If you have a crop failure, crop insurance can help you farm again next year.

Important Insurance Deadlines

- **Nov. 20, 2017:** Sales Closing, Policy Change, Cancellation, Termination Date
- **Jan. 15, 2018:** Acreage / Production Report Date
- **Aug. 15, 2018:** Premium Billing Date
- **Nov. 20, 2018:** End of Insurance Period

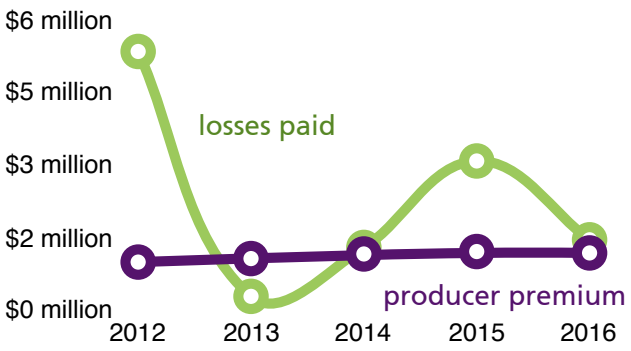
Over 40 grape varieties are insurable in these counties:

Cattaraugus
Chautauqua
Erie
Niagara
Ontario
Schuyler
Seneca
Steuben
Suffolk
Ulster
Wayne
Yates



Grapes in other counties may be insured by written agreement from RMA

NYS Grape Crop Insurance Performance



Learn more & sign up:

To sign up, contact a crop insurance agent. Find an agent using the Agent Locator tool at rma.usda.gov/tools/agent.html

Find crop insurance information at ag-analytics.org/cropinsurance/

Cornell University delivers crop insurance education in New York State in partnership with the USDA Risk Management Agency.

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

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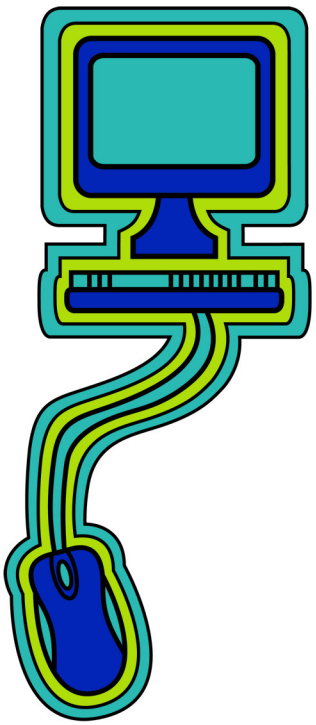
LERGP Links of Interest:



Go to http://lergp.cce.cornell.edu/ for a detailed calendar of events, registration, membership, and to view past and current Crop Updates and Newsletters.

LERGP Web-site:
http://lergp.com/

Cornell Lake Erie Research & Extension Laboratory Facebook page
https://www.facebook.com/Cornell-Lake-Erie-Research-and-Extension-Laboratory-678754995584587/?fref=ts

Efficient Vineyard Web-site:
https://www.efficientvineyard.com/

Table for: Insecticides for use in NY and PA:
http://lergp.cce.cornell.edu/submission.php?id=69&crumb=ipm|ipm

Crop Estimation and Thinning Table:
http://nygpadmin.cce.cornell.edu/pdf/submission/pdf65_pdf.pdf

Appellation Cornell Newsletter Index:
http://grapesandwine.cals.cornell.edu/cals/grapesandwine/appellation-cornell/

Veraison to Harvest newsletters:
http://grapesandwine.cals.cornell.edu/cals/grapesandwine/veraison-to-harvest/index.cfm

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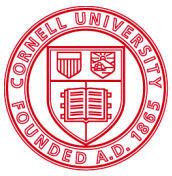
THE LAKE ERIE REGIONAL GRAPE PROGRAM at CLEREL
6592 West Main Road
Portland, NY 14769
716-792-2800



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