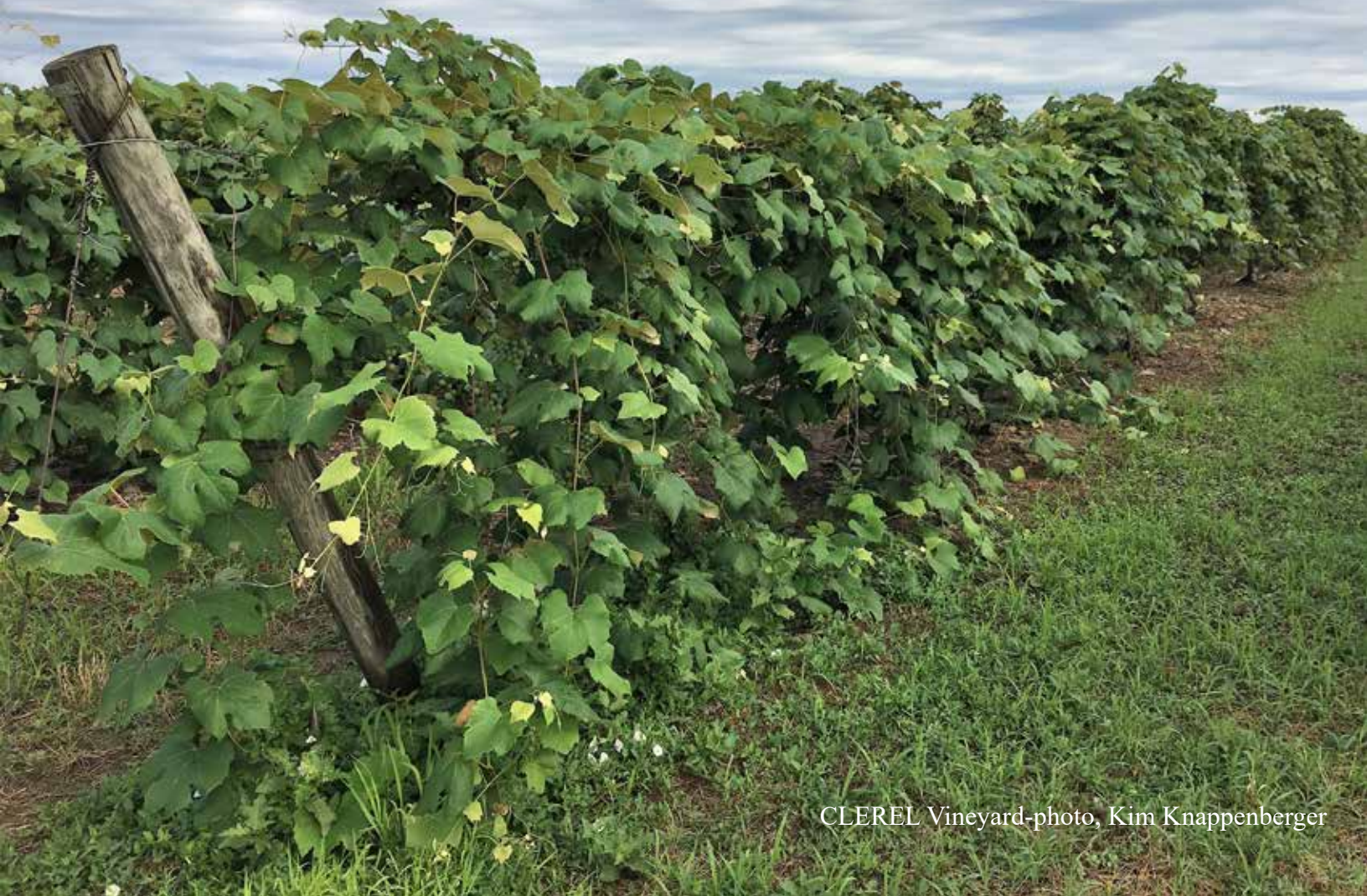




The Lake Erie Regional Grape Program

VINEYARD NOTES- JULY 2018



CLEREL Vineyard-photo, Kim Knappenberger



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LERGP Summer Grape Grower Conference

Wednesday, August 15, 2018

at CLEREL



United States Department of Agriculture
National Institute of Food and Agriculture



Topics of the day: 9:00am-3:00pm



Spotted Lantern Fly, should we be worried?

Powdery Mildew and Botrytis (pesticide points)

D.O.T. topics

Crop Insurance

Efficient Vineyard topics including demonstrations in the field

Carnegie Mellon's vineyard robot , our variable rate thinner, NDVI sensors, and much more.

Guest speakers!

We will spend the morning inside, then after lunch head outside for more interactive talks around the farm.



\$10.00 per person, includes refreshments and lunch

Register on-line at: <https://lergp.cce.cornell.edu>



LAKE ERIE REGIONAL GRAPE PROGRAM
2018 SUMMER GRAPE GROWERS' CONFERENCE REGISTRATION FORM

Wednesday, August 15, 2018

Deadline for registration is Friday, August 10, 2018.

Name (1st attendee) _____ \$ 10.00

Farm Name _____

Address, City, State, Zip Code _____

Phone _____ E-mail _____

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

<u>Additional attendees:</u>	<u>\$10.00</u>
	<u>\$10.00</u>
	<u>\$10.00</u>
	<u>Total:</u>

Please make check payable to **LERGP (Lake Erie Regional Grape Program)** and mail to: Kate Robinson
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Call Kate at 716-792-2800 ext 201 with any questions.

Business Management

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

Cover Crops in Perennials: 2018 Econ

Sometimes the best place to start a discussion of cover-crops is with weed control. The timing of herbicides varies considerably based on the materials used. Vineyard floors in general are getting a bit greener and growers have discussed strategies for another total floor burn down. Both pre and post emergent programs are seeing enough rain in most areas to require another application. The past couple of years have shown the implementation of some very specific weed management strategies to target problems and reduce overall costs through cover crops.

For example, without cover crops it is common to struggle to control mare's tail in row middles. One option would include mowing 2-3 times with a total cost of \$40 - \$50 per acre. This option does have a very low impact on cash flow as unpaid labor and tractor depreciation are a majority of the cost. It also does nothing to conserve water when grasses are allowed to grow all summer. A more effective strategy is the use of rely or cheetah type generic products. While this can be effective it represents the most expensive option. For most growers' materials will cost \$25, application will cost \$15 for a total cost of \$40 per acre. A cover crop program may reduce or eliminate the need for mare's tail control in row middles. Over the course of a year, with a post-emergent row middle program a grower should realize a savings of \$13.50 per acre by switching to a lower rate of round-up on the first row middle herbicide application and eliminating the use of rely in row middles.

To increase the likelihood of realizing a savings by reducing mare's tail problems, it is probably necessary to plant a cover crop seed mix that is vigorous in early spring. One of the better blends to quickly establish cover, control weeds and typically easier to establish is rye grass, radish, and clover. This blend would cost about \$27 per planted acre or \$15 per grape acre. Switching rye grass to grain rye would lower the materials cost to \$23 per planted acre or \$13 per acre. Buckwheat, at a \$1 per lb, can also provide a significant amount of ground cover and help with weed suppression. It can be added to these mixes for no additional cost by reducing the amount of legume and other seed rates.

The value of rye grass biomass is (at least) two-fold. Keeping the vineyard floor free of any competition between bloom and August 1st is very difficult. Many growers don't attempt to do this, other growers try and struggle. The costs of multiple round-up applications and the time required to cover acreage quickly enough creates challenges. Standing, chopped or crimped biomass that is thick enough continues to play a role in weed suppression.

While the termination timing on gravel does not allow for an accumulation of bio-mass that is impressive enough to replace urea use, it can also reduce urea needs. The impact of spring growth on clay soils when frost is not a concern can be most promising. Though water competition is a concern, these soils are generally not as prone to quickly drying out. A termination around bloom, sometimes later in a wet year, can really expand the benefits of cover crop. It reduces the window of time for troublesome weeds to grow and can more than double the amount of nitrogen made available to the plant. With urea prices being low, this amounts to a savings of \$5 per acre if urea applications are reduced from 70lbs to 35lbs.

I haven't shown an economic benefit to cover crops, yet. We'll get there. In fact, we've already paid for most of it. Or net stands at: **-4.50** per acre in materials or nearly **-\$20.00** per acre when including planting costs. There is another herbicide area we have not looked at. The observations, as I mentioned before, is this system works better than other strategies that growers have tried. When cover crop termination is early in dry years, LERGP studies showed larger berries and bigger crops. Yet again this year we are seeing vineyards with smaller berries and signs of (so far) very modest drought stress. The benefit of superior weed control had an immediate impact of up to one ton per acre in yields. Modest increases in vine size also occurred. Potential yield for the following year improved due to increases in vine size. While net revenue increased by \$216 per acre, it was very clear that these benefits were likely driven by specific weather conditions. In other words, we expect similar benefits once every 5-7 years to continue to justify making strong recommendations to use cover crops in vineyards. Between the draft of this newsletter and the final edits two inches of rain have fallen at some NEWA weather stations. Suffice to say many sites may see a much more normal berry size. The ability of the soil to hold additional water this year may not so directly impact crop size with such obvious benefits if we continue to receive adequate moisture.

Grape trials looked at soil health benchmarks but discovered very little measurable change in the 3 years the trials were conducted. It remains challenging to place an economic benefit on improvements in soil health. We know in non-perennial systems cover crops show impacts on soil health that would have a real benefit on vine size. Trials in those crops lasted longer and are also planted over 100% of acreage rather than 60%. Cover crops also perform differently due to the length of growing season. Our potential to grow cover crops, without interfering with vine performance is a bit shorter than some other crops. While we do not have direct evidence of long lasting benefits in grapes, we have plenty of reason to suspect well managed cover crops can have long-term direct benefits.

Ernst seed supplies a lot of seed for grape growers in this region. They have about 11 choices of clover, 7 choices of perennial rye grass and 26 other legumes, among other choices. The internet and other seed providers have even more choices. Suffice to say the very basic seed mixes discussed above are only the tip of the iceberg. Things can get complicated quickly if you head down the rabbit hole. That rabbit hole can be beneficial and as growers learn more they tend to adapt to mixes that do best on their farm specific soil types. Sometimes these mixes will save growers \$1 - \$3 per acre. Oftentimes they'll get better results and spend a bit (or a lot) more.

Lessons learned: From Local Growers and Here at CLEREL

I would avoid legumes all together if soil pH is below 5.0. The cost and benefit of nitrogen fixation is razor thin. If soil conditions do not allow for successful stands a legume is not justified. Almost all cover crops will struggle in low pH conditions. Radish might help move lime down into the soil and remains inexpensive. Radish and an inexpensive grain or grass might be a better option. When soil pH falls below 4.7 it might make more sense to avoid cover crops altogether.

Crimping and rolling offered a real promise to improve the efficiency of cover crops. For the most part integrating the practice into vineyards has been challenging. By the time crops are ripe enough to crimp, termination should have already happened. The lack of flexibility in termination timing is basically a deal-breaker. If you find a used crimper, you might be able to use it occasionally to justify the investment. I'd let an inexpensive crimper find me, rather than spending a lot of time looking for one. If growers find a way to more reliably integrate the practice into termination, I'll be the first to let you know.

Buckwheat is a good back up to rye grass. It's allelopathic effects can temper problematic weeds. It can also outcompete other seeds in the seed mix. It makes sense to lower seed rates with buckwheat, particularly legumes. This may allow you to control weeds less expensively. It may also reduce the progress toward other goals such as soil health and nutrient recycling. Buckwheat is also an excellent stand-alone crop for modest erosion prevention. It can be used in June and July to hold tilled soil together. While that shouldn't be a regular practice we all know that occasionally a vineyard floor is disturbed.

Crimper Roller is an inexpensive tool that quickly terminates cover crop. Flexibility of timing has been a real issue for perennial crops





Seeding cover crops with a no-till seeder



Left vineyard has bare soil with full weed seed bank ready to grow in early spring. Right vineyard will have reduced weed pressure through terminated cover crop.

IPM

Tim Weigle, NYSIPM, Cornell University, LERGP Team Leader

Grape Berry Moth

Hopefully the majority of you are using the grape berry moth phenology-based degree day model found on NEWA <http://newa.cornell.edu> to track the progress of grape berry moth through its various generations or are, at least, checking the *LERGP Crop Update* on a regular basis to get an idea of what is going on. With the warm weather we have experienced in 2018, we are seeing where grape berry moth development is moving along more rapidly than in previous years. Looking at the table below you can see that as of July 20 (when this article was written) we are past the point where treatment of the second generation will be effective and we are still waiting for 1470 DD which signals the start of the scouting period for grape berry moth. The economic threshold for this scouting period is 15% damaged clusters. Pick two areas on the edge of the vineyard block and two in the interior. In each area choose 5 vines and randomly examine 10 clusters (for a total of 50 clusters) for evidence of grape berry moth feeding. A damaged cluster is one with one or more berries that exhibit feeding damage.

NEWA Location	Wild grape bloom date*	DD Total on July 20, 2018	Forecasted DD for July 25, 2018
Versailles	May 29, 2018	1184	1321
Hanover	May 29, 2018	1226	1362
Sheridan	May 28, 2018	1285	1421
Silver Creek	May 31, 2018	1139	1276
Dunkirk Airport	May 30, 2018	1186	1321
Forestville	May 30, 2018	1199	1333
East Fredonia	May 29, 2018	1213	1350
Fredonia	May 30, 2018	1146	1283
Portland Escarp.	May 29, 2018	1233	1368
Portland	May 30, 2018	1202	1337
East Westfield	May 30, 2018	1185	1321
Westfield	May 30, 2018	1191	1328
Ripley	May 29, 2018	1258	1396
North East Escarp	May 29, 2018	1229	1365
Harborcreek	May 29, 2018	1263	1403
North East Lab	May 30, 2018	1255	1395
Erie Airport	May 27, 2018	1400	1541
Lake City	May 29, 2018	1261	1400
Ransomville	May 30, 2018	1235	1377
Burt	June 1, 2018	1072	1211
Somerset	May 31, 2018	1149	1290
Corwin	May 31, 2018	1144	1287
North Appleton	June 3, 2018	1036	1177
* Estimated date provided by NEWA website			

Make sure you scout both the interior and edges of the vineyard block. While grape berry moth tends to be found more on the vineyard edges, anything that traps leaves such as a depression or heavy weed growth has the potential to assist in the buildup of GBM. More than once I have heard, they came out of nowhere and now they are in the middle of my vineyard. More likely than not, scouting the middle of the vineyard was skipped for a number of years because it was historically free of GBM. If you have any questions on implementing a grape berry moth management strategy in your vineyard, please get in touch with me at thw4@cornell.edu or 716.792.2800 ext 203.



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Brown Marmorated Stink Bug Management Survey for Commercial Producers



A nation-wide survey is currently underway to gather information from farmers and growers on the economic impact of the brown marmorated stink bug (BMSB) on agriculture. The objective of the survey is to better provide you with the help you need in managing this pest. We'd like to find out when BMSB became a problem for you, where you currently get information on how to control them, how much damage you have suffered, your use of and interest in various management practices, and your feelings about biological control methods and their potential for your operation. The results of the survey will be used by Extension programs across the United States to fine tune management advice for the BMSB and help prioritize research and outreach activities.

If you'd like to participate, the survey should take you about 20-25 minutes to complete. Your individual survey responses will be confidential and the data collected will only be reported in summaries. Your participation is voluntary and you can decide not to answer a given question if you choose.

The link to the on-line survey along with more information about the survey can be found on the StopBMSB.org website (<http://stopbmsb.org/go/BfxA>).

If you have any questions about the Brown Marmorated Stink Bug Management Survey for Commercial Producers, please contact Jayson Harper by e-mail at jkh4@psu.edu or call 814-863-8638.

Spotted Lanternfly – The Newest Invasive Species

New Yorkers need to be vigilant against Spotted Lanternfly, *Lycorma delicatula* (WHITE), a new invasive species that has the potential to have a significant impact in the grape, fruit, nursery, landscaping, and logging industries. Spotted Lanternfly (SLF) is a plant hopper that is currently entrenched in Southeastern Pennsylvania and has established itself in Virginia and New Jersey. The major method of movement for this pest is through hitchhiking by the adult and egg stages. However, even though SLF are currently in the nymphal stage of their life cycle, care needs to be taken not to bring them into the area.



Spotted Lanternfly 4th instar

Currently we would be concerned about egg masses that are moving into the areas from areas in PA that are infested. The spotted lanternfly adult lays its egg masses on almost anything and can be found on tree bark (it resembles a splash of mud when dried), or anything that is left outside during the period of egg laying such as children's toys, vehicles, picnic tables, pallets, bins, etc.

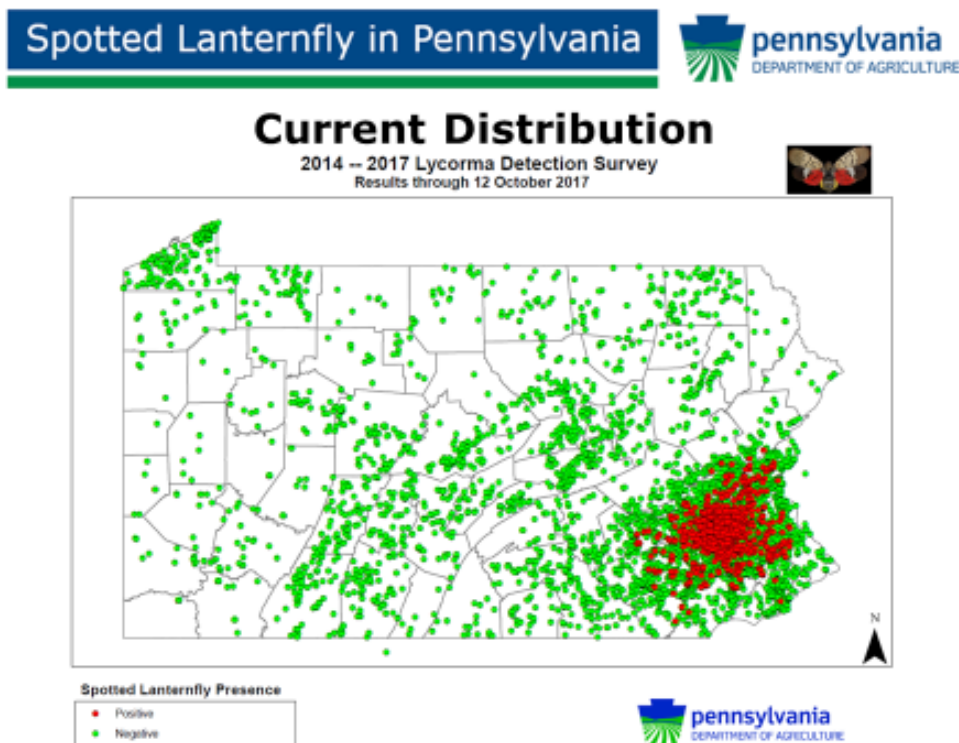
If you are purchasing, or moving, anything from the quarantine zone in PA (See Figure 1 – red dots are in quarantine zone) please inspect it carefully for nymphs prior to moving from the area or as soon as you receive it.

More information on Spotted Lanternfly can be found in the NYS DEC fact sheet at:

https://www.dec.ny.gov/docs/lands_forests_pdf/slffs.pdf

If you think you have found a Spotted Lanternfly please send the information, and a photo if possible, to: spottedlanternfly@dec.ny.gov

You can also check out our podcasts on the Spotted Lanternfly at <http://LERGP.com/podcasts>



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PA Update

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

Black Rot in 2018

No doubt, black rot (BR) is more widespread in 2018 than in the last few seasons. Throughout the Lake Erie Region, BR can be found in, at least, small amounts in many vineyards (i.e., both leaf lesions and infected berries) but pockets of medium to high levels are evident in certain blocks.

Weather and Inoculum levels - In 2016 dry conditions resulted in a minimal amount of black rot in the Lake Erie Region. In 2017 very low overwintering inoculum levels and presumably, properly timed fungicide applications kept black rot in check. However, the wet weather in May and June of 2017 undoubtedly led to an increase in infections (although not easily noticeable), resulting in higher overwintering inoculum levels for the 2018 season. The fungus that causes black rot overwinters in: 1) mummified berries in the trellis or on the ground; and 2) cane lesions.

Black Rot Infection Periods in 2018 – Rainfall in the spring initiates the release of spores from mummies and cane lesions. BR infections can occur at various temperatures depending on the number of hours that leaves remain wet after a rainfall. For example, at temperatures of 70 - 75 degrees F only 7 hours of leaf wetness are required for black rot infection to occur (see: **2018 New York and Pennsylvania Pest Management Guidelines for Grapes**, Table 3.1.1, page 14).

Leaf Infections - According to Grape Infection Events Logs in NEWA, in May 2018, rainfall events after budbreak resulted in a number of BR infection periods across the belt. I began finding leaf lesions in Concord vineyards on May 31 and by June 7 leaf lesions were widespread in a block where last year's black rot mummies were easy to find in the trellis (Figure 1).



Figure 1. Concord leaf with multiple black rot lesions. Photo- Andy Muza, Penn State

Berry infections - Remember that Concord berries are highly susceptible to infection for about 3 - 4 weeks after bloom then become resistant about 2 weeks later. So, according to Grape Infection Events Logs in NEWA, rainfall events from June 10 - 27 resulted in 5 - 6 black rot infection periods across the Lake Erie Region during the most susceptible period for berry infection. (Information for Niagara County, NY, which was dry in June, indicates only 1 infection period during this time). On July 12, I reported in the Crop Update, that BR was not hard to find on berries in border areas near wood lines in a number of vineyards that I routinely check for grape berry moth injury (Figure 2). By this time I was also receiving reports from growers concerning black rot infections in their vineyards.



Figure 2. Black Rot on Concord berries.
Photo-Andy Muza, Penn State

Overall Black Rot Situation in the Lake Erie

Region - As mentioned previously, black rot symptoms on leaves and berries are evident in many vineyard blocks. However, I consider the disease level to be low in the majority of vineyards across our region. After the 2016 & 2017 seasons any increase in black rot would be noticeable. But there are: areas near wood lines, blocks that have a history of black rot problems, and blocks that have not received adequate fungicide protection, where the level of black rot is moderate to high.

What to do NOW? - It is important to remind growers that Concord berries can still be infected up to 5 - 6 weeks after

bloom while berries of *V. vinifera* varieties can be infected up to 7 weeks postbloom. So, at this time in the season, Concord grapes are close to the stage where berries become resistant. However, the Grape Infection Events Logs in NEWA indicate that rainfall across the region this past weekend has resulted in black rot infection periods. What to do NOW? If you are finding occasional berry infections or leaf lesions and the site does not have a history of black rot problems then you can probably avoid another fungicide application for black rot. However, if leaf lesions or berry infections are easy to find then a fungicide application is **immediately** warranted. Effective fungicide options include DMI materials (FRAC Group 3) such as: tebuconazole products; Rally (myclobutanil); Mettle (tetraconazole); or Rhyme (flutriafol). Research indicates that these DMI fungicides have excellent **post-infection** activity (at least 3 days and potentially longer).

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Additional survey link: <http://bit.ly/NYSNuts>



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Samuel Bosco

PhD Student

Department of Horticulture

25 Plant Science

<https://hort.cals.cornell.edu/people/samuel-bosco>

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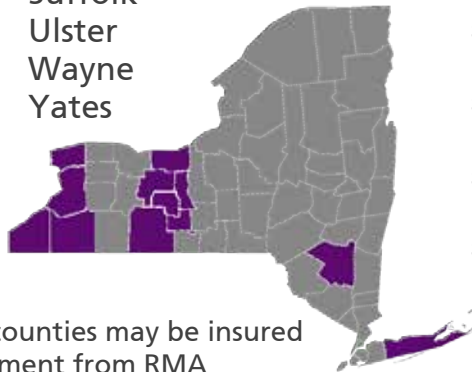
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- **Jan. 15, 2018:** Acreage / Production Report Date
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NYS Grape Crop Insurance Performance



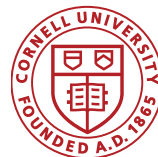
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