Cornell University
Cooperative Extension

PennState Extension

Crop Update June 13, 2019

North East, PA Concords- Photo-Jennifer Russo, LERGP at CLEREL

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.

In this Crop Update:

- **Fertilizer Price- Kevin Martin**
- **Rotate Materials to Extend Their Useful Life- Tim Weigle**
- **Current Pest Questions- Jennifer Russo**
- **In the Vineyard 6/6/2019- Andy Muza**
- **PA Weather and Disease Update- Bryan Hed**
- **Cost Effective Mechanical Pruning- Heather Barrett**
- **2019 Coffee Pot Schedule**

The Lake Erie Regional Grape Program is a Cornell Cooperative Extension partnership between Cornell University and the Cornell Cooperative Extensions in Chautauqua, Erie and Niagara county NY and in Erie County PA.

Business Management

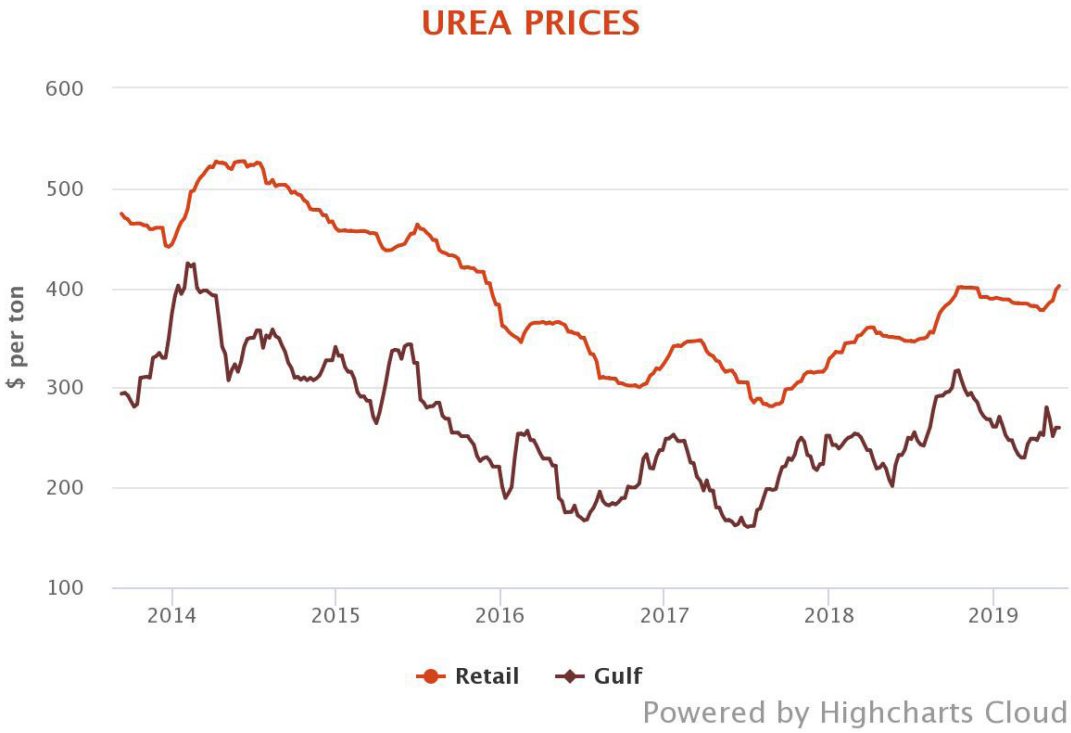
Kevin Martin, Penn State University, LERGP, Business Management Educator

Fertilizer Price

What to do on yet another rainy day? If the weather keeps going this way, we'll see a need for 1-2 additional fungicide spray applications. Working around the rain will probably mean an extra 7 days of work this summer. Or, since you don't have an extra 7 days of labor, skipping on something else. In the meantime, you'll also have plenty of time to complete shop work, record-keeping and maybe vacation. This is an unusual time for me to write a fertilizer update. However, the market for fertilizer is not following typical seasonal patterns as weather has disrupted the field crops industry.
On a few of those rainy days it will pay to do some shopping. It is going to be important to watch fertilizer prices over the next 6 – 12 months. There should be some opportunities to buy some fertilizer at a discount. So far, the wet fall in 2018 has caused ammonia prices to fall significantly. Gulf prices are below $200 a ton and retail prices are the lowest they've been in years. Field crop growers were unable to do fall applications and many planned to switch to urea this spring.

Urea

Reported corn acreage is officially down 3% and expected to be down much more once final survey data is in. Despite that, higher urea use due to the wet fall has actually increased the price of urea. This is one to watch for our grape growers. If the supply side catches up due to the decrease in acreage, the price could fall. However, the higher corn prices are already carrying over into 2020 contracts. That will put upward price pressure on 2020 spring urea. In other words, there is a solid chance that urea prices will fall from their current peak and bounce back even stronger in late 2019.

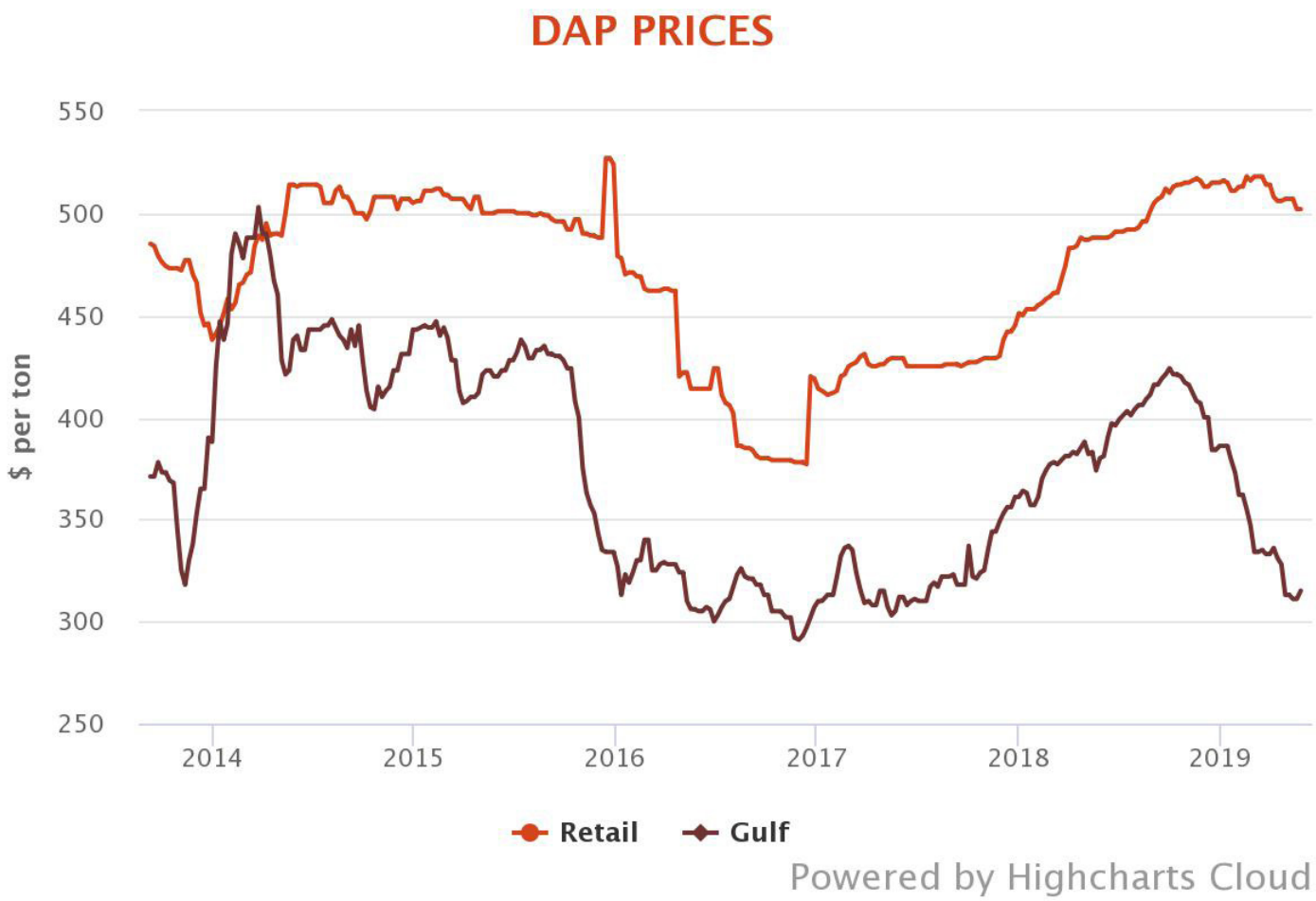


Potash

Retail potash prices also look poised to dip due to the wet weather. This would be the first pull-back in potash price since 2016. It's been steadily climbing for the last 30 months. The contract price for potash is down 5% since February. The spread between retail and Midwest terminal is about 5% more than average. Not only could that spread close before the next potash application, it could also continue to fall.

DAP

When growers require phosphates the price can be significant per acre. A deficient soil would currently require $50 - $60 of DAP, which is significantly more than the typical phosphate application of $0. DAP prices are in a very strange spot. The bottom has fell out of the Gulf market, falling 25% since last October. Over the same period, retail price is unchanged at $500 per ton. Nationwide average for retail has room to fall $100. Local retail prices are typically higher than average due to shipping costs but there should be plenty of room for these prices to fall as there is a short-term global surplus and there is also a short term decline in 2019 demand. Just like urea, that short-term decline is being tempered as the market turns its attention (already) to 2020 soybeans and corn.



IPM

Tim Weigle, NYSIPM, Cornell University, LERGP Team Leader

Rotate Materials to Extend Their Useful Life

We had an interesting discussion at yesterday's Coffee Pot meeting about fungicides that may not be providing the same efficacy as in years past. It really doesn't matter what the active ingredient is, the more cost effective it is the more often it will be used and after a number of years, it can start to lose a bit of efficacy. I believe I heard Bryan Hed mention at a previous Coffee Pot meeting that for a majority of fungicides, the active ingredient will start to lose some of its efficacy after it has been sprayed 20 – 25 times. So for some of our older materials we are well out of the range of maximum effectiveness and even some of the newer products can be approaching that limit. So what should be done? Rotate modes of action and active ingredients. Every fungicide label has a Fungicide Resistance Action Committee (FRAC) code – a number that corresponds to the mode of action for that particular fungicide. It is easy to make sure you are rotating modes of action simply by looking at the FRAC code. If the codes are the same, do not apply those products back to back. Instead, look for a material with a different FRAC code. There are resistance codes on the labels for insecticides and herbicides as well.

It is recommended that you use some of the newer fungicides/modes of action during the critical immediate prebloom and immediate post bloom sprays. This is the timeframe when availability of primary inoculum for the four major diseases – powdery mildew, black rot, downy mildew and Phomopsis – is peaking. This is a critical time frame to protect the fruit and by doing a good job of limiting primary inoculum there is less chance for secondary infections to become a big problem later on. Use materials that you feel have less efficacy as early season or late season sprays. And don't forget to use materials that have a mechanical action (Stylet Oil, Nutrol, Armicarb, etc.) as part of your resistance management strategy. These materials are not subject to the development of resistance and work best as part of a tank mix with materials that have protective qualities. Always read the labels for best use of the materials and for any compatibility issues.

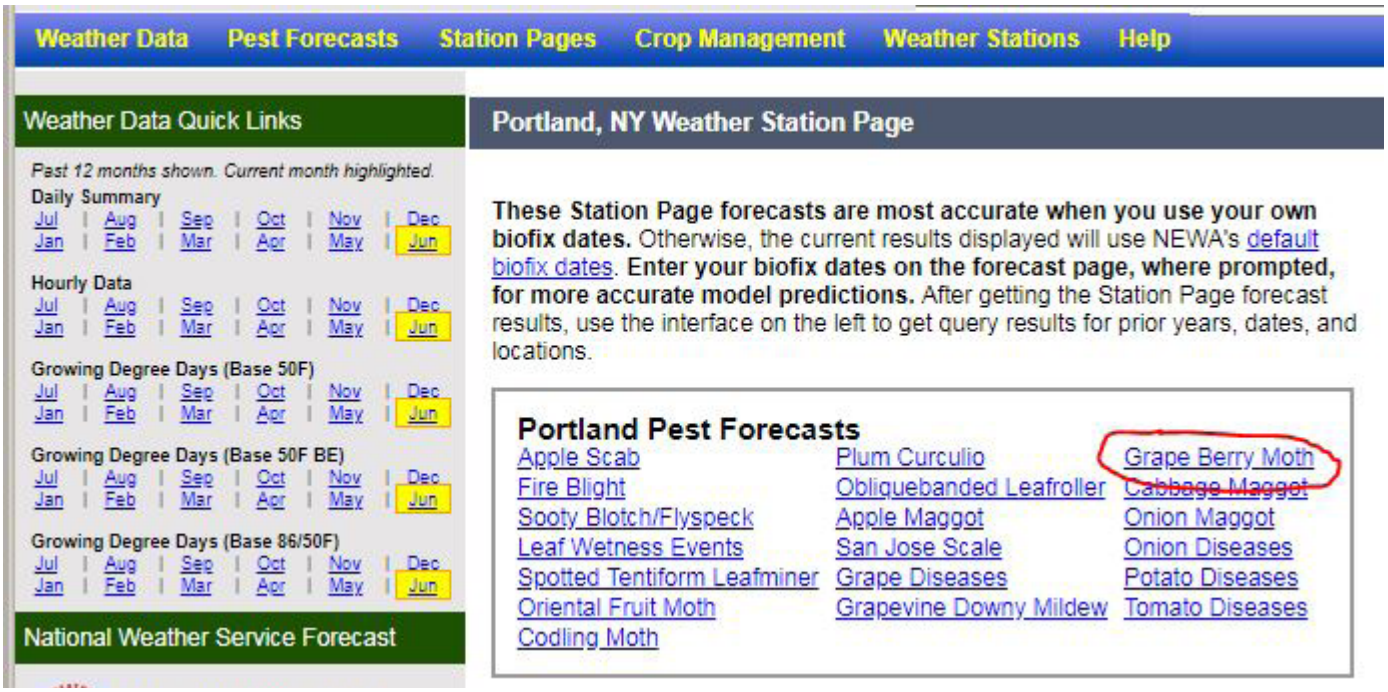
And They're Off!

Wild grape bloom has been visible for the past week in a majority of the Lake Erie grape belt and that means the grape berry moth model on NEWA has started to calculate degree days for timing of scouting and insecticide applications for grape berry moth. The date of wild grape bloom is the biofix used to start accumulating degree days using the base temperature of 47.14°F (not the Base 50°F we typically use for growing degree day accumulation). The Phenology-based GBM DD model found on NEWA will provide you with an estimated biofix date, based on historical information from a Concord block at the old Fredonia lab, but provides the user the ability to fine tune the model results by inputting the observed wild grape bloom date near their vineyard blocks. The table below shows where we stand for degree day accumulation with the GBM model using the estimated biofix date provided by NEWA. As you can see, we are well short of the 810 DD needed to trigger an application for GBM. Please visit the NEWA website, choose the station location(s) nearest you, and click on Grape Berry Moth in the Pest Forecasts box (Figure 1). You can enter the date of wild grape bloom by clicking in the box at the top of the model page (Figure 2). This will help you get the best results from the model. Check in frequently as the model also provides information on timing of

scouting to determine the level of grape berry moth damage which is useful in determining the need to manage GBM in your vineyards.

If you have any questions on how to implement the disease or grape berry moth models found on NEWA, please send me an email thw4@cornell.edu or a call at 716.792.2800

Figure 1



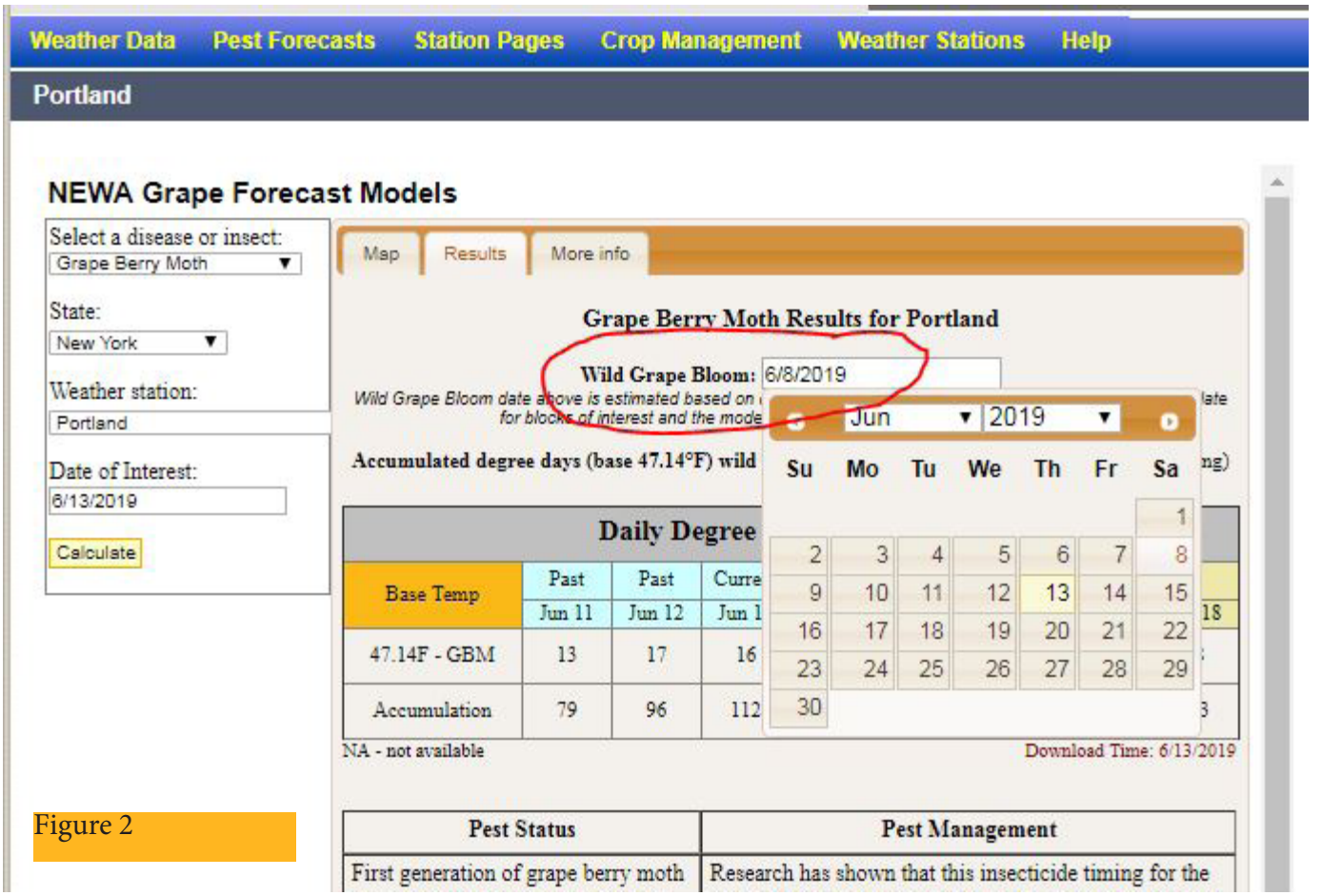


Figure 2

NEWA Location	Wild grape bloom date*	DD Total on June 13, 2018	Forecasted DD for June 18, 2018
Versailles	June 7	123	213
Hanover	June 8	108	198
Sheridan	June 6	145	234
Silver Creek	Temperature sensor malfunction – currently being fixed		
Dunkirk Airport	June 9	91	173
Forestville	June 8	110	198
East Fredonia	June 9	90	180
Fredonia	June 9	87	178
Brocton Escarp.	June 8	111	203
Portland Escarp.	June 7	129	219
Portland	June 8	112	203
East Westfield	June 9	85	172
Westfield	June 9	88	175
Ripley	June 8	113	206
Ripley Escarp	June 8	109	205
Ripley State Line	June 8	111	207
North East Stateline	June 9	84	168
North East Escarp	June 7	123	206
North East Sidehill	June 8	105	189
North East Lab	June 8	111	189
Harborcreek	June 8	110	192
Harborcreek Escarp	June 9	82	172
Lake City	June 7	126	214
Ransomville	June 11	47	133
Burt	Model has not yet predicted Wild grape bloom		
Corwin	June 13	16	103
North Appleton	Model has not yet predicted Wild grape bloom		
*** Estimated date provided by NEWA website**			

Table 1. Phenology-based Degree Day model results for Grape Berry Moth by NEWA station location in the Lake Erie Region on June 13, 2019.

Viticulture

Jennifer Russo, Viticulture Extension Specialist, LERGP

Current Pest Questions

Honeyvine Milkweed (*Ampelamus albidus* or *Cynanchum laeve*) is a true milkweed species. It is also known as bluevine, climbing milkweed, sandvine, dog's-collar, Enslen's vine, peavine, smooth anglepod, or smooth swallow-wort. Whatever you call it is fine, but I have heard many a name from some of our growers that I cannot type out without getting into trouble or say without blushing.

Albeit a beneficial vine to host Monarch butterfly larvae and warrants its place in a healthy ecosystem, a commercial vineyard is not the place for it. In a vineyard it is a noxious weed that will tangle up and shade out canopy and fruit. The plant is native to North America, which means that it knows how to survive and thrive here. It prefers moist, fertile soil, but it will tolerate most soil types. It flowers June through September, and a single plant can produce up to 50 seed pods containing many seeds ready to take flight.

Honeyvine Milkweed

There are many look-alikes to this vine, such as field bindweed (*Convolvulus arvensis*), hedge bindweed (*Calystegia sepium*), wild buckwheat (*Polygonum convolvulus*), and many morning glory species (*Ipomoea spp.*). But the honeyvine milkweed leaves and flowers are its distinguishing features. There are two leaves per node that are opposite of each other and resemble elongated hearts three to seven inches long with smooth edges and they are dark green with white veins. The flowers are small, white, and in clusters. The root system consists of a deep vertical taproot and many lateral roots and often grow six feet down.

The vine is a twining vine that will grab onto the trunks, canes, bottom wire, posts and other plants just to reach up to the sky and tangle in your canopy. The flowers develop into a three to six-inch-long, smooth, green seed pod that is similar to that of common milkweed and persist into winter. One could spend some time pulling new shoots, but it is aggressive and persistent and it will be back. Systemic herbicides can be used on actively growing plants.

I asked Dr. Bryan Brown, Integrated Weed Management Specialist for NYS IPM Program, about management practices for the honeyvine and he suggested growers keep hitting it with high rate of glyphosate along with ammonia sulfate to help take it into the leaves throughout the growing season. Then in the fall, when leaves are about to yellow, dose them again with the high rate of glyphosate so that it gets into the root storage system. Repeated, frequent applications of glyphosate for a few years will be required. If growers run up against the maximum labelled use per year, they could substitute hoeing for some of the applications. Carefully read and follow all product label directions and caution not to hit any green grapevine tissue.

Another little bugger that is usually an issue early, but we have found some individuals right now is the Banded grape bug. The 2019 NY and PA Pest Management Guidelines for Grapes states that the nymph, seen in the photo taken on June 11, 2019, range in size from 1/8 to ½ inch in length. Nymphs begin feeding on shoot tips and newly emerged leaves. Feeding is concentrated in the stalks of individual florets, the buds and the cluster stem. Injury by small nymphs, occurring between three to five-inch shoot growth, late May and early June, results in floret drop, reduced berry set, and fewer clusters. Economic injury can occur when more than 1 nymph per 10 shoots are present. This injury only occurs in the pre-bloom stages. The adults are predators and do not cause injury to berries.

One problem is that when scouting these pest, they tend to hide. 'Squirrel-like' behavior of running to hide behind florets and shoots to avoid detection is not uncommon. Look for nymphs on grape clusters and shoot tips prior to bloom. They can be recognized by their long, banded antennae visible in this photo. If damage is found and you cannot visibly see the bug, alternative methods for scouting is to use a white paper plate held under the clusters and shake the vine to knock bugs onto the plate, or remove clusters from the vine and swirl them around a container of soapy water or ethyl alcohol. The nymphs exit the clusters and drop to the bottom where they can be counted.

Banded Grape Bug

Lygocoris inconspicuous is in the same insect family as the banded grape bug (Miridae) and has a similar life cycle. Nymphs emerge shortly after bud break as well and begin feeding on shoot tips, flower buds, pedicels, and the cluster rachis. The nymphs are light green in color with threadlike antennae that are not banded. Growers should also scout for these insects on clusters and shoot tips. Because of their small size, green color, and habit of hiding when disturbed, they can be very difficult to see on the cluster. This pest is sporadic and does not require treatment in most years. When present, however, it can cause considerable economic damage.

Insecticide applied before the second week in June will prevent economic injury. Infestations do not occur in most vineyards or necessarily throughout a vineyard block; there it may not be necessary to treat the entire vineyard or all blocks at a vineyard. Suggested materials to use are Sevin, Danitol, Imidan, and Assail; (only labeled for banded grape bug) please consult your 2019 NY & PA Pest Management Guidelines for Grapes for materials and rate per acre applications if you have an infestation.

PA Update

Andy Muza, LERGP Extension Educator, Penn State University

In the Vineyard (6- 13 -19)

Immediate Prebloom Fungicide Application –Yesterday afternoon I checked various vineyards in North East, PA, from north of Rt. 5 to south of I-90, and did not find any Concord flower clusters in bloom. During scouting I did find a few black rot leaf lesions (Figure 1) in one vineyard block and a few Rose chafers at two different sites.

Figure 1. Black rot leaf lesion on Concord leaf. Photo – Andy Muza, Penn State.

If an Immediate Prebloom spray has not been applied yet then do so NOW. Fungicide products which are **highly effective** against Phomopsis, Black Rot, Downy Mildew and Powdery Mildew should be used. See the 2019 New York and Pennsylvania Pest Management Guidelines for Grapes for choices of fungicides.

Growers that have already applied the Immediate Prebloom spray should be prepared to apply the first Postbloom spray within 10 – 14 days of the Immediate Prebloom spray. **DO NOT** stretch spray intervals beyond 14 days during this critical period for protection of the clusters.

Rose Chafer – emergence of Rose chafer adults has begun. Less than 10 beetles were observed at two different sites. This year Rose chafer emergence is about 5 - 7 days later than we usually begin seeing this pest. This is probably due to the cool, wet weather pattern over the last few weeks. Adult beetles are about ½ inch long, have a light brown-tan body coloration and long, spiny legs (Figure 2). Vineyards with a history of this pest or blocks with sandy soil/blocks with sandy knolls should be scouted NOW and continued to be scouted for about 2 weeks after bloom. An insecticide should be applied if a threshold of 2 beetles per vine is reached. Insecticides listed for management of rose chafer include Assail, Danitol and Sevin.

Figure 2. Rose chafer beetles on Concord flower cluster. Photo – Andy Muza, Penn State.

PA Update

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

Weather: So far in the month of June we have recorded 1.96” rain at our location. We have now accumulated about 160 growing degree days during June, and about 443.5 gdds as of April 1 (which puts us about 200 gdds behind last year at this time). The Accuweather forecast for North East calls for a dry day tomorrow, but windy with wind speeds in the mid to upper teens mph (too windy to spray). Winds will die down below 10 mph by tomorrow evening, but rain is forecast over the weekend.

Phenology: Last year, 50% bloom for Concord occurred on June 13 at our location here by the lake. However, we expect bloom to be a bit later for us this year, occurring within the next week. Scout your vineyards, especially those farther inland for the first signs of bloom.

Diseases: Rain on Monday of this week generated an infection period for all the major diseases. Stay on top of your spray program during this immediate pre-bloom and the first and second post bloom spray to keep fruit clean, as this period of time (the first two to three weeks after capfall) is the most critical for fruit protection; your fruit are susceptible to all the major fungal grape pathogens, no matter what variety you are growing.

I have been hearing that some growers are still depending on tebuconazole for protection against powdery mildew at this critical time. Please take note that this active ingredient is not likely to provide enough activity against powdery mildew during the most susceptible period for your fruit; resistance to this material is widespread and more is needed this close to bloom, in order to control this disease. We have generally been recommending materials like Quintec and Vivando for the critical sprays around bloom and many have been using these materials. I have also suggested the use of one of the succinate dehydrogenase inhibitors like Endura or Luna Experience, especially for the first post bloom spray, if you’re looking to try something different and have been dissatisfied with your mildew control on fruit in previous years. Of course, a tank mix with sulfur, especially for wine varieties that are not sensitive to sulfur, is always a good idea. It’s hard to say at this point if powdery mildew will be bad this year; now is the time to scout for it on your cluster stems. If you see the powdery sporulation of the fungus on clusters or leaves during the pre-bloom period, that is a big red flag for a potentially tough time controlling mildew on your fruit this year. The powdery mildew fungus does not particularly like the cool temperatures we’ve been having, but it sure loves the cloudy weather. Always put your best materials on now, during the lead up to bloom and the first/second spray after bloom.

Downy mildew is now active and any infection that may have taken place after Monday’s wetting period will most likely be showing up first as yellow “oil” spots on leaves close to the ground, especially on susceptible varieties like Niagara and Catawba. Symptoms can show up in as little as four days from the infection period. However, our cool temperatures lately may stretch that incubation period out to a week or more. Keep scouting for it; there is no substitute for scouting to inform your spray decisions at this time!

Cost Effective Mechanical Pruning

By Heather Barrett

Mechanical pruner mounted on tractor

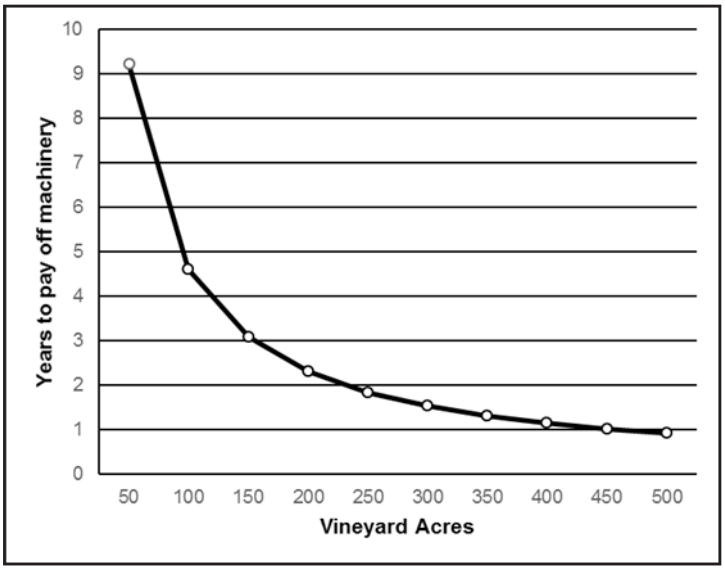
Mechanical pruning has become a widely accepted practice in the Lake Erie Region. This is due to the declining presence of reliable labor and the increased cost of maintaining workers. With a unique combination of harsh growing conditions and low market values for Concord products, the network of growers from this neck of the woods are well adapted to meeting their own needs when it comes to introducing mechanization into their vineyard operation while staying within a narrow profit margin.

The current trend with labor availability suggests that it will become increasingly difficult to find reliable labor while the cost per vine for pruning will increase as well as minimum wage, thus driving up the cost of manual pruning. Hand follow up costs will follow suit but where mechanical pre-pruning has the upper hand is that it only requires a tractor driver to ensure that some level of pruning is accomplished. **ON AVERAGE** manual pruning costs about $250 (38¢ per vine) per acre, hand follow-up costs $150 (23¢ per vine) per acre and the cost to run the tractor with the farmer in it costs $35 per acre. With these numbers there is a **$65 per acre savings** through using a mechanical pre-pruner with hand follow-up. If a farmer were to buy a new pruner for $30,000 then the time to pay off for a 100 acre Concord grape farm is about four and a half years. This holds true as long as all things remain equal such as yield and price per ton.

Years to pay off machinery = Cost of machine/(size of farm x savings per acre)

Using our numbers:
$30,000/(100 Acres x $65) = 4.6 years

This reflects the purchase of a brand new pre-pruner at $30,000. There are several companies where pre-pruners can be purchased as well as used pre-pruners for a wide range of prices depending on amount of use and equipment adaptations. If you are shopping for a pre-pruner consider the type of tractor the pruner needs to be attached to since some will need to be belly-mounted. Using the above equation the time to pay-off for any pre-pruner can be estimated for any size farm.



You can also estimate the cost to have your farm manually pruned using this equation:

Cost of Manual Pruning = (650 x Cents per vine)

Using our numbers:
650 x 0.38 = $247

650 is the upper limit for vines per acre, this number can range from 605 to 650. Some crews will count the number of vines as they go through while others estimate that there are 650. The cost per vine for manual pruning is 38¢ per vine in the calculations to come up with savings per acre for the above example and graph. For a farm that pays more per vine then the savings per acre will be higher and pay off time will be shorter. As with any piece of equipment there are costs associated with maintenance and fuel that cannot always be accounted for, here the estimated cost per acre for operating a mechanical pruner is $35 (fuel, tractor depreciation, labor, and maintenance of pruner). Concord vineyards need to be pruned using a sprawl pruner or a Friday pruner while many wine grape varieties require a barrel pruner and the cost of that would be different which in turn effects the pay-off time.

If you would like to learn more about vineyard mechanization or the costs associated with it, the Lake Erie Regional Grape Program team has a viticulturist and a business management specialist. Both can be reached at (716) 792-2800 or stop in to visit Monday through Friday between 8am and 4:30pm.

Concord Vineyard at CLEREL- photo- Jennifer Russo

INSURING GRAPES

NY, 2019

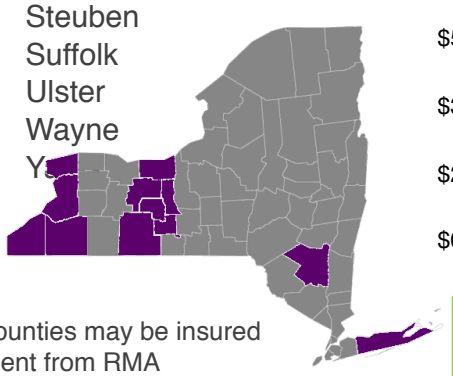
Crop insurance is a safety net for farmers that helps you **manage risk**. If you have a crop failure, crop insurance can help you farm again next year.

Important Insurance Deadlines

- **Aug. 15, 2018:** Premium Billing Date
- **Nov. 20, 2018:** Sales Closing, Policy Change, Cancellation, Termination Date
- **Nov. 20, 2019:** End of Insurance Period
- **Jan. 15, 2019:** Acreage / Production Report Date

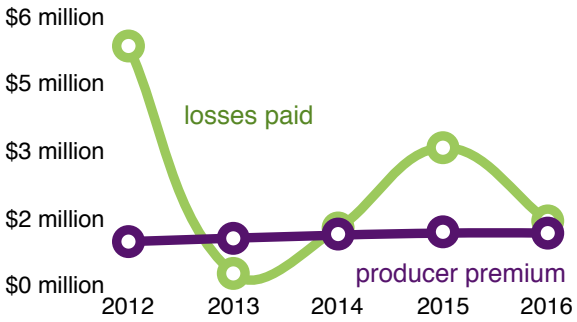
Over 40 grape varieties are insurable in these counties:

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



for every $1 grape producers spent on crop insurance premiums from 2012 to 2016, **they received $2.07** in losses

Learn more & sign up:

Learn more about crop insurance options available to New York producers at agriskmanagement.cornell.edu
To sign up, contact a crop insurance agent. Find an agent using the Agent Locator tool at rma.usda.gov/en/Information-Tools/Agent-Locator-Page

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.

Cornell CALS
College of Agriculture and Life Sciences

USDA
U.S. Department of Agriculture
Risk Management Agency

LERGP
2019 COFFEE POT MEETING SCHEDULE

Date	Time	Location	Address
May 1, 2019	10:00am	John Mason Farm	8603 West Lake Rd. Lake City PA 16423
May 8, 2019	10:00am	Sprague Farms	12435 Versailles Rd. Irving NY 14081
May 15, 2019	10:00am	Paul Bencal	2645 Albright Rd. Ransomville NY 14131
May 22, 2019	10:00am	Arrowhead Winery	12073 East Main Rd. North East PA 16428
May 29, 2019	10:00am	Militello Farm Supply	2929 Route 39 Forestville NY 14062
June 5, 2019	10:00am	North East Fruit Growers	2297 Klomp Rd. North East PA 16428
June 12, 2019	10:00am	Thompson Ag - Corner of Hanover & Dennison	Silver Creek NY 14136
June 19, 2019	10:00am	Kirk Hutchinson	4720 West Main St. Fredonia NY 14063
June 26, 2019		NO COFFEE POT	
July 3, 2019	10:00am	Betts Farm	7366 East Route 20 Westfield NY 14787
July 10, 2019	10:00am	Jim Vetter	12566 Versailles Rd. Irving NY 14081
July 17, 2019	10:00am	Trolley Line Vineyards	11480 E. Main St. North East PA 16428
July 24, 2019	10:00am	Brian Chess	10289 West Main Rd. Ripley NY 14775
July 31, 2019	10:00am	Tom Tower Farm	759 Lockport St. Youngstown NY 14174