Monthly Updates:

**Phenology Update**

- **Hudson Valley**
  Immediate pre-bloom to scattered bloom depending on the varieties

- **Champlain Valley**
  Pre-bloom, 9-10 leaves separated, individual flowers separated

**Insect Pest Management**

Early leaf infections of *phylloxera* have been found on Marquette vines in both the Hudson Valley and the Champlain Valley. There are several options available for managing this pest. Tim Martinson does a nice job of explaining these options and their effectiveness on his blog. (See article below)

*Climbing cutworm* has been reported in areas of the Lower Hudson Valley. With the cool weather, vine growth was delayed, and remained more vulnerable to attack by this pest.

**Rose chafers** are active now in the Champlain Valley. These insects will feed on flowers as they develop, devastating your crop. They can be controlled with an insecticide application.

**Grape plume moth** is also active. This insect webs together and feeds on new leaves, but is rarely economically significant and can be removed by hand.

*Sevin, Danitol, or several other choices are labeled for most pests. Consult grape guidelines for rates and labeled materials.*

**Disease Pest Management**

Vines have grown considerably with the warm weather and rain recently. The 1.5+ inches of rain we received in many parts of eastern NY was much needed. But it was more than enough to wash any residual fungicide off of vines.

**Downy mildew** – Minimum conditions for infection have been exceeded. The DM season starts around the 10-inch shoot growth stage and will regenerate many times in the season if conditions are right. With the warm temps and rapid growth that the vines are making, it's time to be putting on a fungicide that will provide protection before the next infection period. DM requires specific conditions for infection: Warm humid nights (>53°F), Rain (<0.1”), and cloudy. But you want to have a protectant in place before hand to keep it under control. This season in particular (warm + wet) is the recipe for this disease, and things are progressing quickly. Mancozeb is a great all-purpose material for everything except powdery, so you need to include something else in your mix.

Photos from Vineyard IPM Scouting Report, week of 5/3/10, Univ. of WI Ext. Door Co. and Peninsular Ag. Research Sta., Sturgeon Bay, WI

Photos: A. Wallis

In this issue of Grape News:

- Alternative Weed Mgmt
- Phylloxera on Frontenac Management
- Wine from Diseased and Healthy Vines
- NGP News You Can Use
- Exploring Price and Opportunity
- Upcoming Events

continued on next page
Materials applied for forward protection of phomopsis will also offer forward protection against downy mildew. Some strobilurin fungicides are labeled for control of downy mildew. There has also been the development of newer materials in recent years. Wayne Wilcox’s disease guidelines has more information, as well as the 2016 Cornell Guidelines for Grapes.

**Powdery Mildew** - Warm temperatures and high relative humidity are ideal conditions for the spread of secondary powdery mildew infections. The pre-bloom period is time to use highly effective materials for the control of this disease. The strobilurin fungicides offer some reach back (typically not more than 3 days). As with downy mildew, powdery mildew can develop resistance to fungicides. It is important to rotate with different classes of materials to prevent resistance.

**Phomopsis** – May still be a concern. Mancozeb, Captan, or Ziram will offer forward protection and help protect against rachis infections. This disease usually only produces one generation of spores per season, around the 3-5” growth stage. Spores were depleted in one of the rain events in the past 2 weeks. To prevent infection for next season, be sure to remove any diseased wood. Canes that harden off for the winter will harbor pycnidia, or overwintering structures that will release spores again next year. The best time to do this is at the end of the season, when you should prune out infected tissue.

**Anthracnose** – This is a disease of concern on some cold hardy hybrids, Marquette being the ‘poster child’. This disease will continue to re-infect throughout the growing season. Good sanitation and canopy management will help control disease by improving drying time and reducing inoculum. Broad spectrum fungicides targeting other diseases typically provide adequate control.

**Black rot** – Visible infections found in HVRL vineyard. The critical time for managing black rot with fungicides is the immediate pre-bloom to 4 weeks post bloom. Mancozeb, Captan and Ziram offer forward protection, while the strobilurin fungicides (e.g. Group 11) as well as the sterol inhibitors (e.g. Group 3) offer some reach back (typically not more than 3 days).

### Temperature and Rain for May 2016

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<th>Weather Station</th>
<th>Avg Temp (F)</th>
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### Degree Day Accumulations (Base 50)

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Alternate Weed Management in New York Vineyards

Alice Wise, Andy Senesac, and Rick Dunst

This article is reprinted from the May 2007 issue of Sustainable Viticulture in the Northeast, a publication of the Finger Lakes, Lake Erie, and Long Island Regional Grape Program. The full article can be found here: http://www.vinebalance.com/pdf/newsletters/SustainableViticulture3.pdf

Managing weeds under the trellis to reduce competition for moisture and nutrients is a standard practice in viticulture. If not managed properly, losses in yield and fruit quality can result. During vineyard establishment, weed competition must be minimized to facilitate optimal vine growth both above and below ground. In mature vineyards, significant weed competition is undesirable from bloom to veraison. Weeds may harbor injurious pests such as cutworms. Broadleaved weeds may also serve as alternate hosts for tomato ringspot virus, a virus vectored by nematodes that can impact certain own-rooted hybrids. Conventional programs rely on the use of pre-emergence and post-emergence herbicides. The infiltration of herbicides into groundwater and a desire to reduce overall pesticide use has motivated NY growers to seek other less intrusive methods. Efficient sprayers for post-emergence application as well as tillage, mulching, under-the-trellis mowing and organic herbicides offer growers alternatives to conventional weed management techniques

Factors complicating weed control

Weed control issues will be different in every vineyard - some are manageable but others are sometimes beyond the control of any grower due to year-to-year variability in climate and stores of weed seeds and propagules. These issues include:

Reducing the weed population preplant: An often overlooked but important part of long-term weed control is the reduction of the seed bank prior to planting of the vineyard. Many seeds are long-lived, and thus any strategy to reduce this population of seeds may be helpful over the long-term. Cover cropping and tillage to prevent weeds from going to seed are the most common methods. In a 2007 Long Island Ag Forum talk, Dr. Marvin Pritts, Cornell’s Small Fruits Specialist, noted that multiple cover crops were more effective at reducing weed populations than a single cover crop. Suppressive cover crops that can be cycled rapidly (e.g. mustards) are particularly good. Typically in Long Island vineyards, Sudex (sorghum x sudan hybrid) is seeded as a cover preplant to suppress weeds and to boost soil organic matter. However, abiotic factors such as wind and rain can be responsible for carrying tufted weed seed (such as dandelion) several hundred feet to infest new areas. This type of seed dispersal can be very resistant to attempts to reduce weed seed load by cultural practices unless a wide buffer area surrounding the vineyard is relatively weed-free.

Growing season rainfall: Maintaining adequate weed control through the season can be challenging, particularly if rainfall is plentiful. Residual herbicides breakdown more quickly, and weed growth is lush and rapid. Cultivation under the trellis becomes less favorable as cultivating wet soils damages the soil structure. Irrigation also presents a challenge – as drip is the most common type of irrigation, weeds tend to congregate under the emitters. Fertigation further complicates this issue as N fertilizer in the irrigation water promotes weed growth.

Use of compost, organic mulches, or composted manure: All composting guidelines emphasize the importance of maintaining temperatures of 40 – 50 °C (104 – 122 °F) during the composting process so that weed seeds and seedlings are killed. Despite good intentions, compost is often a ready source of weed seeds. In our Long Island...
research vineyard, mugwort, a nasty, rhizomatous weed, was introduced with purchased compost. Organic mulches such as hay and straw can also be major sources of weed seed. Use of clean straw (know your source) can minimize this impact.

**Cultivation and mowing:** Cultivation and mowing are effective methods of spreading weeds such as nutsedge, both in the row middles and under the trellis. The mugwort in our research vineyard has spread rapidly due to mowing of the row middles, as tiny pieces of stem or rhizome cut and thrown by the mower will root readily.

**Post-emergence-only weed control**
Some growers choose to avoid pre-emergence herbicides in favor of a post-emergence-only approach. There are many post-emergence options including glyphosate, paraquat, glufosinate, Amin (carfentrazone-ethyl) and systemic grass herbicides such as Poast (sethoxydim) on bearing vineyards or Select (clethodim) and Fusilade (fluazifop-P-butyl) for non-bearing vines only.

Several post-emergence organic herbicides are available (see the ‘Organic herbicides’ section below). Regardless of the material chosen, a good post-emergence program should provide effective control of summer annual weeds, reduce weed pressure in subsequent years by reducing the seed bank, provide suppression or control of most perennials, and result in a shift to winter annuals that provide green cover during winter. Post-emergence programs require timely application (targeted at small weeds), which may be difficult in rainy seasons.

In work done in two Lake Erie Region Concord vineyards, Dunst and colleagues evaluated post-emergence herbicides as a cost-effective alternative to pre-emergence strategies. They found that two well-timed applications of a broad spectrum post-emergence herbicide such as glyphosate, glufosinate, or paraquat, applied in early June and mid to late July, provided effective weed control through the growing season.

A potential long-term concern with this approach is glyphosate resistance. Common vineyard weeds like horseweed (Cynara canadensis) have developed glyphosate-resistant populations in areas where ‘Roundup-Ready’ crops are grown. In five years, this glyphosate-resistant weed has spread to nearly 100,000 acres of arable land. Horseweed seeds can easily be dispersed by wind into vineyards. This underscores the importance of rotating your choice of post-emergence herbicides from year-to-year and within a year. Scouting the vineyard one week after a post-emergence application will reveal pockets of healthy resistant weeds that would normally be dead or nearly dead.

**More efficient applicators**
Herbicides have traditionally been applied with dual nozzle herbicide sprayers using >25 GPA of water. New sprayer technology such as CDA applicators and sensor-controlled applicators can improve efficiency of post-emergence herbicide applications. These sprayers improve deposition, reduce spray drift and enhance operator safety. They may also allow the use of reduced herbicide rates.

**Controlled droplet applicator (CDA) sprayers** have a single, shielded nozzle that atomizes the spray solution. This fine mist circulates around inside the shield, providing good deposition. A brush skirt or plastic cover can be fitted over the shield to further reduce drift onto young vines and/or vines being retrained. According to Dr. Andrew Landers, the droplets are small and uniform in size, so they all stick to the plant, allowing lower rates of material to be utilized (4). Because CDAs use low volumes of water (<10 GPA) they are only suitable for applying glyphosate or glufosinate. Also, this technology is best used with smaller weeds. If weed growth is lush and grasses have lignified, often efficacy is reduced and a weed strip persists down the center of the vine row.

**Sensor-controlled applicators** have computer-controlled optical sensors that turn nozzles on and off. The infrared sensor senses chlorophyll in the plant, thus they function in either light or dark. Spraying in the evening is sometimes preferable as the wind often dies down. These applicators are designed for post-emergence applications and are best used before weed growth is out of control. In the annual NY & PA Pest Management Guidelines for Grapes, Landers further explores height of the boom from the ground and correct selection of nozzles as a means of further reducing drift. Generally, drift increases with increased boom height from the ground and with smaller droplets.

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Cultivation techniques
The advantage of cultivation is total avoidance of herbicides. Potential disadvantages include possible damage to trunks and roots, loss of soil organic matter by oxidation, increased soil compaction and erosion. The biggest obstacle however is the labor cost associated with this practice, though a number of growers have committed to this practice entirely or as a supplement to other weed control techniques. Cultivation must be done in a timely manner and is often harder in rainy seasons due to time constraints, soil conditions and lush weed growth. Smaller weeds are easier to cultivate than larger, bulkier, more lignified weeds. Shallow cultivation is also preferred as it minimizes both potential damage to soil structure and potential pruning of grapevine roots.

Equipment
There are many different types of under-the-trellis cultivation implements. For vineyards that hill up, certain types of hoes might perform hill up/take down duty as well as weed control. There are cutter blades that slice off the weeds from their root system, heavy duty rotary hoes as well as tine or finger weeders, disc rotary cultivators and knife rotary cultivators. Adding to the confusion, many of these can be front, rear or side mounted and driven as a single or double mounted unit. How does one choose? Price and fit with your tractor and vineyard configuration are obvious considerations. An aggressive implement that really disturbs the soil may be slightly better in terms of weed control but slightly worse in terms of soil and root destruction.

Is night cultivation to reduce weed pressure a viable strategy? Vigorous cultivation exposes weed seeds to a split-second of red light before burial again, which starts the germination process for many seeds. Cultivating in the dark removes this germination stimulus. So if you feel confident about cultivating under the trellis with only the tractor headlights and/or have insomnia, you may be able to reduce weed seed germination with night cultivation.

Phylloxera on Frontenac– Management Options
Tim Martinson

There are four insecticides listing grape phylloxera in the NY/PA Pest Management Guidelines (see Table 4.2.1). Two of them – Admire Pro (imidacloprid) and Danitol (fenpropathrin) – are restricted use pesticides and require a certified applicator license. The other two, Assail (acetamiprid) and Movento (spirotetratram) are not restricted use materials, but have different properties and costs. Assail has performed well in small-scale trials here in NY, with similar effectiveness as Admire and Danitol. It has a fairly limited residual action (eg. a week or so), so one may need to repeat application 10-12 days if galls return. I’d advise giving the vines another week or so before attempting an application. This will be most effective against the ‘crawlers’, and less so against existing galls. Movento is a new product that has long residual activity (several weeks) and is translocated through the vine. Because of this, it should have activity against the adults in the gall (they will ingest while feeding). It will be the most effective material for foliar phylloxera – but is expensive. Entomologist Greg Loeb advises that one should wait until there is sufficient canopy (18-24 inches showing) before attempting an application.

From Tim Martinson’s blog. The original article can be found here:
http://blogs.cornell.edu/nygrapeupdate/2013/05/27/

Study Compares Wines from Diseased and Healthy Vines
Scott Weybright, College of Agricultural, Human & Natural Resource Sciences

PROSSER, Wash. – Grapevine leafroll disease (GLD) has plagued vineyards for centuries, but little is known about how this virus impacts the fruit quality and actual wine produced from grapes of affected plants.

Researchers from different disciplines at Washington State University teamed up to examine virus impacts from “vine to wine.” Their study, recently published in PLoS ONE, can be found at http://dx.doi.org/10.1371/journal.pone.0149666.

Three years of wine comparisons
They made wines from red grapes from vines with GLD and wines from healthy plants to learn the effects of GLD on wine chemistry.

“In most studies we do, we use a limited number of grapes for data collection,” said Naidu Rayapati, a WSU virologist and associate professor of plant pathology. “This time, we harvested 750 to 800 pounds from infected vines and an equal number from healthy vines, all donated by a generous grower.”

The grapes were harvested at different points in the season to measure whether early or late harvesting made the GLD more of a factor in the finished wine. They replicated the
tests over three years to allow for changes from warm years versus cooler years.

**Warm years see smaller differences**

In the final results, wines from GLD-affected grapes had significantly lower alcohol, polymeric pigments and anthocyanins (both are coloring agents in wine) compared to corresponding wines from grapes of non-symptomatic vines. The impacts wound up being more pronounced during cooler growing seasons than in warmer seasons.

“We think that’s because grapes mature much faster in warmer seasons and don’t have as much time to be affected by the virus,” Rayapati said.

That’s just a hypothesis at this point, he said, and he hopes to do more research into seasonal influences for a deeper understanding of how GLD impacts vine health and fruit and wine quality. He aims to translate this knowledge for practical applications in vineyards.

**Unusual collaboration**

Rayapati worked on this study with colleagues Olufemi Alabi, Federico Casassa, Linga Gutha, Richard Larsen, Thomas Henick-Kling and Jim Harbertson. Harbertson and Henick-Kling are with the wine program at WSU Tri-Cities in Richland, Wash.

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**USDA Workshops for NENY**

**Clinton and Essex County Farmers - Keeseville, NY**

Thursday – June 23rd, 2016, 10:00 am—12:00 am

Knight of Columbus 1435 Route 9

Presentation by Scott Collins USDA

**Workshops will cover Value Added Producer Grants, Renewable Energy, Microloan and Farm Storage Facility Loans. FREE**

**Who should attend this workshop?**

Those farmers, producers, rural small businesses or entrepreneurs who are interested in learning about available assistance from USDA Rural Development (RD) and Farm Service Agency (FSA). Topics that will be discussed include: value added opportunities, renewable energy programs, and loan programs offered.

**USDA Rural Development (RD)**

- The Value Added Producer Grant (VAPG) Program helps agricultural producers enter into value-added activities related to the processing and/or marketing of agricultural products. Generating new products, creating and expanding marketing opportunities, and increasing producer income are the goals of this program.
- The Rural Energy for America Program (REAP) helps increase American energy independence by increasing the private sector supply of renewable energy and decreasing the demand for energy through energy efficiency improvements.

**USDA Farm Service Agency (FSA)**

- USDA Farm Service Agency has several loan programs that pair well with farmers diversifying with value added products, including Microloans and Farm Storage Facility Loans. The Microloan program offers low interest farm loans of up to $50,000 and offer more flexible access to credit than traditional FSA loans.
- Farm Storage Facility Loans provide low-interest loans to producers to buy, build or upgrade permanent and portable storage and handling facilities. Eligible commodities include fruits, vegetables, milk, butter, yogurt, cheese, meat and poultry, eggs, hops, honey, maple sap, grains, and floriculture.

USDA and our partners are working together to ensure that rural America continues to be a great place to live, work and foster economic opportunity.

**Contact Anita Deming at Cornell Cooperative Extension anitademing@cornell.edu or 962-4810 ext 0 or 409 for more information or to preregister.**
This summer you may see a new face running around collecting pricing data from farmers’ markets in ENY. Lindsey McMahon is a summer intern working on a project we designed to evaluate prices and opportunities to realize greater income. The goal is to provide farmers’ market vendors with timely price data summaries and examine regional variations in pricing of products.

Each week we will be travelling to markets and recording price information before aggregating and summarizing for publication. This data can be used by vendors to adjust prices during the season and, hopefully, increase revenue and profit. Keep your eyes out for Lindsey and upcoming price summaries!

For more information contact Jesse Strzok – js3234@cornell.edu or Lindsey McMahon – lm679@cornell.edu.

Solar Workshop Survey

Deadline: June 17
Jim O’Connell was recently contacted by a group that wants to set up a webinar and/or workshop about solar energy for the winery. This workshop would have information about smaller solar designs, not the large field scale panels. Please take a moment to answer a few questions that will help us better understand the industry needs and timing for this workshop.

Questions:
Are you interested in solar energy for your winery?
Would you be available during the growing season to participate in a webinar? How about a field workshop?
What month(s) are you most available?
What time of day is best?

Please email Jim jmo98@cornell.edu or call me 845-943-9814 with answers or to discuss the questions.

Resources for Cold Climate Vineyard IPM

Cornell IPM Fact Sheets for Grapes
http://nysipm.cornell.edu/factsheets/grapes/default.asp

New York and Pennsylvania Pest Management Guidelines for Grapes (published annually)

Grape Disease Control, 2015. Dr. Wayne Wilcox (published annually)

Cornell Vineyard Spraying Website
http://web.entomology.cornell.edu/landers/pestapp/grape.htm

Integrated Pest Management Strategy for Cold Climate Winegrape Growers. Lorraine Berckett
http://www.uvm.edu/~fruit/grapes/gr_ipm/AnInitialIPMStrategy.pdf

Welcome Emelie Morton!

New technician for the northern region of the ENYCHP

Hi! My name is Emelie Morton. On June 11th I joined the ENYCHP team as the Horticultural Technician for the Northern Region. I will be working out of the Clinton County office in Plattsburgh, NY with Amy Ivy and Anna Wallis.

I just graduated from Paul Smiths College in Paul Smiths NY with a bachelor’s degree in environmental science. I grew up in Alton NH and moved to the North Country four years ago for college and decided to stay for a while. In the short time I have been working here I have already learned SO much! I have been helping maintain the Willsboro research vineyard, checking insect traps, installing soil moisture sensors, planting tomatoes, and tons of other things! I am excited to learn more and get involved in some other projects in the future!
Upcoming Events

Recordings Now Available – NCPN Webinar Series: Clean Plants for the Future
Recordings of the 4-part webinar series offered by the National Clean Plant Network in March 2016 are now available online. To view them, visit the following website: https://grapesandwine.cals.cornell.edu/extension/ncpn-webinar-series-clean-plants-future

6/15 – Sprayer Efficiency Twilight Meeting: Capital Region, 6-8PM
Join ENYCHP and Andrew Landers of Cornell University for a Twilight Meeting to discuss sprayer efficiency. This event offers DEC Credits.
http://enych.cce.cornell.edu/event.php?id=575

6/16 – Sprayer Efficiency Twilight Meeting: Orange County, 6-8PM
Join ENYCHP and Andrew Landers of Cornell University for a Twilight Meeting to discuss sprayer efficiency. This event offers DEC Credits.
http://enych.cce.cornell.edu/event.php?id=576

6/23, 10AM-12PM – USDA Grant Workshop, Keeseville
A workshop on Value Added Producer Grants, Renewable Energy, Microloan and Farm Storage Facility Loans. Presentation by Scott Collins, USDA. This workshop is Free. Contact Anita Deming at Cornell Cooperative Extension anitademing@cornell.edu or 962-4810 ext 0 or 409 for more information or to preregister.

6/26 - Alternative Grapevine Propagation Study - Field Meeting 2, 1:00pm
Where: Hid-In-Pines Vineyard at 456 Soper Street, Morrisonville, NY

Richard Lamoy owner of Hid-In-Pines Vineyard, has been awarded a Northeast SARE (Sustainable Agriculture Research and Education) grant to study and evaluate a more efficient and economical way to propagate and transplant grape vines for vineyard expansion. This project will evaluate a method of propagating vines from smaller cuttings into cell plug trays and planted with a transplanter.

This second meeting is being held to demonstrate the planting procedure using a water-wheel vegetable transplanter to set the small vines grown in cell plugs. We will also be planting bare root vines by hand so a comparison can be made of the two methods.

For information please call Richard Lamoy 518-570-6925
This meeting is free.

To register, contact CCE ENYCHP (Abigail Henderson: 518-746-2563), or register online athttp://enych.cce.cornell.edu/event.php?id=584

Cornell Grapes Website
http://www.fruit.cornell.edu/grape/
ENYCHP: http://enych.cce.cornell.edu/
Northern Grapes Project
http://northerngrapesproject.org/
NEWA Weather and Pest Forecasting
http://newa.cornell.edu/
Viticulture and Enology Cornell
https://grapesandwine.cals.cornell.edu/
Veraison to Harvest
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Appellation Cornell
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NYS IPM Fact Sheets
http://www.nysipm.cornell.edu/factsheets/grapes/