

## **Quarterly Report: April-June 2019**

## **Program Highlights**

- Over 100 growers attended the FLGP's annual Spring IPM meeting, where they were able to hear the latest information on weed, disease and insect management.
- The FLGP was awarded over \$32,000 in grant funding for two research projects for the 2019-2020 season. Both projects are being conducted in cooperation with collaborators from other programs such including the NY State IPM program and CCE-Suffolk County.
- The first New York State vineyard acreage survey is currently underway. The FLGP worked with growers and industry association members for over a year to develop the survey, which is the first to be conducted in the state in almost 10 years.
- The FLGP hosted a demonstration and discussion of "digital viticulture" technologies, showing how data from canopy and soil sensors can be used to make vineyard management more efficient.

## Demonstrating the Potential for Digital Technologies in Finger Lakes Vineyards

There has been a significant advancement in the use of technology in many parts of agriculture. For the most part, however, those advancements have not impacted the work of vineyard managers in the Finger Lakes and much of the viticulture industry. However, with the adaptation of new types of sensors and data processing tools for vineyards, that is starting to change. This spring, Dr. Terry Bates, director of the Cornell Lake Erie Research & Extension Laboratory in Portland NY, demonstrated how information from soil and canopy density sensors could be used to develop georeferenced vineyard management maps that highlight the variation in canopy size, yield potential, pest pressures, and other factors that influence vine growth and development. Until now, growers would often "eye ball" their vineyards to see where vines were weaker or stronger, and base important practices including yield sampling and pruning on these approximations. These data-driven maps can then be used in a number of ways, such as developing better sampling protocols based on the variation contained in the vineyard, or to apply vineyard practices at variable rates depending on the actual characteristics of the vines or site, rather than treating the entire block as a uniform entity. For example, the maps developed for the demonstration this spring were used by a computer controlled shoot thinner to remove shoots at different rates within two Concord vineyards in Yates County.

This demonstration was done in preparation for the Nelson J. Shaulis Symposium on Digital Agriculture, an international symposium that is being held in Geneva, New York this summer to highlight some of the advances of technology and how they can be used to improve vineyard efficiency and productivity.





Concord vines before (left) and after (right) mechanical shoot thinning. Thinning rate in this block was determined based on data from an NDVI sensor scan earlier in the morning.

# **Finger Lakes Grape Program**

## FLGP Hires Summer Field Staff

The FLGP is fortunate to have two hard-working field staff with us this summer and through harvest. Both of them are recent graduates of the Finger Lakes Community College's Viticulture and Wine Technology program, and one of them is a returning veteran, in more ways than one!



**Ellen Coyne** has returned to work for the FLGP on a part-time basis this summer and fall. Ellen was our summer intern last year during her viticulture and enology studies at FLCC (from which she has now graduated) and graciously agreed to come back and work for us again this year. Ellen is our "chief bug inspector", running our network of traps for the multi-state Cooperative Agricultural Pest Survey (CAPS) project, which monitors for several different invasive insect pests in multiple Finger Lakes vineyards. She is also collecting berry samples from a few of our Veraison to Harvest sampling locations to improve our data on berry size development.

Ellen is a retired veteran of the U.S. Navy, where she served for 20 years.



**Cindy Hanlon** also graduated from the FLCC program this spring, and has jumped into her work with the FLGP with both feet. She has been working on our bindweed management project this summer, collecting data on the efficacy of each of the treatments. She is also helping with some of our other field trials, as well as assisting in the management of our Teaching & Demonstration Vineyard.

Cindy is another "second career" person (as are most of us in the FLGP), having worked in the mortgage industry for a number of years until recently. Prior to working for the FLGP, Cindy held intern positions at White Pine Vineyard in Ontario, NY and at Barnstormer Winery in Rock Stream.

#### NY Vineyard Acreage Survey will Document Changes in the State's Grape Industry

It's been almost 10 years since the last time a statewide acreage survey of the New York grape industry was conducted. Until 2011, the New York office of the National Agricultural Statistics Service (NASS) conducted a vineyard acreage survey in the state every five years. Unfortunately, NASS has indicated that they will no longer be conducting these surveys due to a lack of funding.

Over the past year, the FLGP worked with representatives of the NY Wine & Grape Foundation (NYWGF), industry associations and individual growers to develop a vineyard acreage survey for New York State. The NYWGF approved funds to pay for a new survey, and the Survey Research Institute at Cornell was hired to conduct the survey. The survey went "live" on June 20, and will be open until August 15.



The results of this survey will help us to better understand the current state of the grape industry in New York. This information will be important in the development of new programs and initiatives, research projects, outreach to media and consumers, and much more over the next several years. The hope is that this survey can be conducted every 3-4 years in order to document how the industry is changing over time.

# **Finger Lakes Grape Program**

#### Spring IPM Meeting Feeds Growers with Information...and BBQ

Over 100 growers attended the Spring Grape IPM Meeting on Wednesday, May 15, which was held at Doyle Vineyard Management's farm near Hammondsport, in Steuben County. The annual meeting is held at the beginning of the growing season each year, bringing growers important updates on pest biology, pest management practices and materials that they will use the rest of the year.

Speakers for this year's program included:

- Bryan Brown, NYS IPM weed scientist, discussing perennial weed management practices, including a trial focused on reducing populations of bindweed in New York vineyards;
- Tim Weigle, NYS grape IPM lead, who provided an update on Spotted Lanternfly (SLF) in New York;
- Bryan Hed, grape pathologist from Penn State, providing updates on research focused on improving disease management practices in vineyards; and
- Hans Walter-Peterson, FLGP viticulturist, who discussed the recent discovery of resistance to several classes of insecticides in a population of fruit flies, and its implication for sour rot management programs this year.



Following the program, the FLGP provides a barbeque dinner that is supported by pesticide suppliers and other companies who sponsor the program each year. This meeting is the most highly attended of the year, after the B.E.V. NY conference held each winter.

#### **Funded Projects**

*Evaluation of Methods for Management of Field Bindweed in New York Vineyards.* Funded by New York Wine & Grape Foundation/ Lake Erie Regional Grape Research & Extension Program. Approved Budget: \$17,991 (Year 2 of two-year project). Collaborator: Bryan Brown - NYS IPM Program.

Perennial weeds are an increasing problem in Finger Lakes vineyards. This project has been evaluating the effects of glyphosate, rimsulfuron, and cultivation on weed control, with particular attention to bindweed, and measure the effect of each system on yield and profitability so that growers can make more informed management decisions. Results from the first year of this project resulted in the addition of field bindweed to the list of approved weeds for rimsulfuron by the Department of Environmental Conservation.

*Evaluation of a Berry Cuticle Supplement to Reduce Cluster Rots in Vineyards.* Funded by the New York Wine & Grape Foundation/ Lake Erie Regional Grape Research & Extension Program. Approved budget: \$15,722 (Year 1 of two year project). Collaborator: Alice Wise – CCE Suffolk County

This project will evaluate the effectiveness of a product called 'HydroShield' at reducing Botrytis bunch rot and sour rot in grapes. HydroShield is a proprietary product currently under development at Oregon State University, but is not yet commercially available. HydroShield is purported to thicken the berry cuticle and therefore provide improved resistance to egg laying of Drosophila fruit flies. In preliminary tests in Oregon, when sprayed on grapes, HydroShield has reduced egg laying by *Drosophila suzukii* (spotted wing drosophila) and subsequent development of cluster rot.

# **Finger Lakes Grape Program**

## FLGP and IPM Weed Specialist Team Up for Better Bindweed Management

For a second year, the FLGP is working with Dr. Bryan Brown, IPM weed scientist, on a project to evaluate the efficacy of different herbicides and mechanical controls to manage field bindweed, which has been developing into a more significant weed pest in vineyards over the past several years. If left uncontrolled, field bindweed can climb up grapevines and take over the trellis space, which can lead to increased disease development due to reduction in sun exposure and air movement within the canopy, as well as limiting the vine's ability to intercept sunlight and thus ripen fruit.

Because of its perennial nature, field bindweed cannot be controlled by "burndown" herbicides, which are much more effective against annual weeds. The most common herbicide used to control perennial weeds such as bindweed has been glyphosate, because it is able to be transported into the plant roots and damage those tissues in addition to killing the above-ground portion. However, the combination of resistance development to glyphosate in weed populations, and the increasing legal and regulatory pressure on usage of glyphosate in agriculture, has more growers considering the elimination of the material from their weed management program. In addition, glyphosate can cause significant damage to vines during the growing season if it is used improperly or without adequate drift control measures in place. This project is evaluating the efficacy of other herbicides, especially rimsulfuron ("Matrix"), and mechanical cultivation, as alternatives to glyphosate for control of bindweed. The results from this project will allow the FLGP to make better recommendations to growers for control of field bindweed, especially for those who are interested in avoiding the use of glyphosate during the growing season.



Perennial weeds like bindweed are not adequately controlled by most herbicides. Without control, it can quickly take over portions of a vineyard.

# **Cornell Cooperative Extension** Finger Lakes Grape Program

Hans Walter-Peterson—Team Leader Donald Caldwell—Viticulture Technician

#### partnership between Cornell University and the Cornell Cooperative Extension Associations in Ontario, Seneca, Schuyler, Steuben, Wayne and Yates Counties.

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