Cornell Cooperative Extension
Finger Lakes Grape Program

Quarterly Report: April—June 2022

Program Highlights

- The impacts of cold temperatures that hit the Finger Lakes region in January are becoming evident. Most native and hybrid grapevines survived the winter relatively unscathed, but most *vinifera* cultivars had at least some damage. Varieties that are less winter hardy, such as Gewürztraminer, Merlot, and Sauvignon blanc, suffered the most damage. More hardy varieties like Chardonnay, Riesling and Pinot noir fared better, but yields will still be significantly lower than normal. Damage was heaviest in the southern portion of the region, where temperatures got at low as -15°F.

- The FLGP has entered the age of digital viticulture through its participation in a new project funded by USDA-NIFA. The project is focused on the improvement and expansion of the 'MyEV' platform, which helps growers to collect and analyze spatial data from their vineyards. The FLGP has conducted NDVI scans in five commercial vineyards this spring to begin helping growers learn how to use this important new tool.

- Late-season bunch rots continue to cause significant losses in yields and fruit quality in years with significant rain and humidity during the harvest period. In addition to evaluating different spray materials to address these, the FLGP has started a trial that is evaluating the ability of cultural practices like early leaf pulling and UV light applications to control the development of these rots, which can cost growers hundreds of dollars per acre in some years.

Winter injury becomes apparent in the Finger Lakes

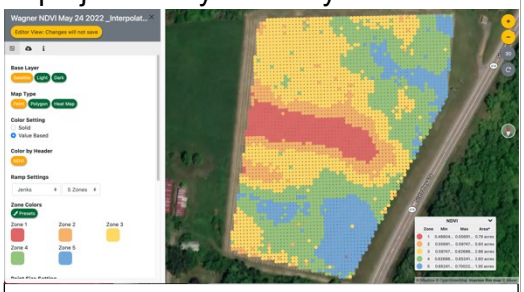
Gewurztraminer vines injured by cold temperatures. These vines will take 1-2 years to become productive again.

On a couple of nights in January, temperatures dropped below -10°F in portions of the Finger Lakes region. As a result, many vineyards experienced significant winter damage to at least some of their vines. In several instances, it is possible that there not be enough fruit to justify harvesting some blocks this year. The damage tended to be higher in the southern portion of the Finger Lakes, where temperatures were recorded as low as -15°F. Most vines have started to grow new shoots from lower on the trunk or that were protected underneath soil that had been hilled up over them last fall, so they can be retrained and will survive. However, we also expect that some that appear to have survived will end up collapsing later this season due to injury to the trunks.

Most of the damage happened to *vinifera* varieties like Cabernet Franc, Sauvignon blanc, Gewürztraminer, Pinot gris, Lemberger and others. These cultivars are less winter hardy than the native and hybrid grapes that we have in the region, like Concord, Catawba, Cayuga White and Marquette. Damage to these varieties was minimal this year. The amount of damage was exacerbated this year by the fact that the winter had been relatively mild before then, which meant the vines were not as hardy as they normally would be by that time in the winter.

Measure, Model, Manage: Mapping spatial data in Finger Lakes vineyards

The Finger Lakes Grape Program is part of a newly funded USDA-NIFA project led by Dr. Terry Bates called “Cost Effective Spatial Data Visualization and Decision Support for Small and Medium-Sized Vineyards”. The focus of the project is the improvement and expansion of the ‘MyEV’ spatial data software tool that allows growers to collect and analyze spatial data in order to help improve their vineyard operations. The extension portion of the project, led by Hans Walter-Peterson in the Finger Lakes and Jennifer Russo in the Lake Erie region, is focused on getting a small group of growers to use the system, become familiar with its capabilities, and help make suggestions about bugs or new features that could be added.



NDVI map of a Riesling vineyard in the Finger Lakes. The red streak through the middle of the block indicates an area with weaker vines than the rest of the block.

In May and June, we conducted our first two sets of NDVI scans in our cooperators’ vineyards. These NDVI sensors detect green tissue, and therefore provide information about the relative size and density of the foliage at a given time. After scanning, we can go out to the vineyard and collect viticulture data like the number of shoots per vine or pruning weight and try to correlate that data with the NDVI data to make the spatial maps meaningful for vineyard managers. Based on the results of these scans, growers can then make better management decisions about what they want to do to address any issues that are found.

Sour Rot experiments/Leaf pulling & UV treatments

One of the major focuses of our program over the past few years has been evaluating approaches to better manage sour rot in Finger Lakes vineyards. In particularly bad years, like 2018 and 2021, sour rot can cost growers up to 50% of their yields in certain varieties. We are testing a few different methods that could reduce the impact of sour rot on fruit quality and growers’ revenue.

This year, we are conducting a small, unfunded trial in cooperation with Dr. Katie Gold (plant pathologist) and Dr. Greg Loeb (entomologist) at Cornell AgriTech to see what impact two different practices – leaf pulling at bloom, and ultraviolet light – might have on sour rot development. Leaf pulling at the start of bloom has been shown to reduce the number of berries that develop on a cluster, which would result in looser clusters that are less prone to splitting, and therefore reduce the potential for disease symptoms to develop. The use of UV light has been shown to control powdery mildew in grapes and other fruit crops, but some data has also suggested that it can reduce sour rot as well, because the light acts as a sterilant. If the light can kill enough of the microbial population that is responsible for sour rot, then there is less to be vectored to other berries in the vineyard and disease pressure would be lower. If these treatments prove to be successful, we will pursue funding to do a more thorough evaluation of both practices to control sour rot.

Exposing the yeast and bacteria responsible for sour rot to UV light may help to reduce the amount of sour rot that develops near harvest.

Presentations

Go East Young Man: How Andy Walker prepared me to succeed in the wild west of Eastern viticulture. Symposium Honoring the Career of Andrew Walker. University of California – Davis, May 19, 2022.

The Trials and Tribulations of Running an Extension Program. Graduate Student Seminar, Washington State University (online), April 21, 2022.

Grape Growing in the Finger Lakes. NYS Home Winemakers Annual Seminar. Rochester NY, June 18, 2022.

Dry conditions early in the season were already causing some blocks with limited rooting, like these young Riesling vines on shallow soils, to begin to show signs of water stress. In this case, the leaves are turning parallel to the sun in order to reduce transpiration.

Our first in-person Tailgate Meeting this year was held at Roy and Gordon Taft's vineyard just outside of Pulteney, NY on May 17, with more than 25 growers in attendance.

Cornell Cooperative Extension

Finger Lakes Grape Program

Hans Walter-Peterson—Team Leader

Donald Caldwell—Viticulture Technician

The Finger Lakes Grape Program is a Cornell Cooperative Extension partnership between Cornell University and the Cornell Cooperative Extension Associations in Ontario, Seneca, Schuyler, Steuben, Wayne and Yates Counties.

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