

FINGER LAKES

Vineyard Notes

Newsletter #9

August 7, 2006

Cornell Cooperative Extension Finger Lakes Grape Program

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TWO FIELD MEETINGS FOR AUGUST

Tim Martinson
Finger Lakes Grape Program

Two field meetings to be held August 18 and 23 will feature a visit with a successful 'startup' vineyard operation and several on-farm research projects currently underway there, and a look at mature and young blocks of the new Cornell varieties **Noiret**, **Corot Noir**, and **Valvin Muscat** (formerly known as NY73.0136.17, NY 70.0809.10, and NY 62.0122.01). We will also taste barrel samples made from the two reds.

August 18. 10-12:00. Coffee Pot Meeting. Verrill Harvest Ridge Vineyards, 1565 Combs Rd, Ovid, NY. [Directions: Combs Rd is off County Rd 131 (west, toward the lake) between Lodi and Willard, about 3 mi N of Lodi Point State Park, and 3 mi S of the Willard State Prison complex, and a mile north of Dalrymple vineyards on County Rd 131.] Chris and Kristin Verrill came from other professions outside agriculture to establish new vineyard business in 1998. Currently, they have 40 acres of Cabernet Franc, Cabernet Sauvignon, Riesling, Pinot gris, and Pinot noir, which they sell to several area wineries. There are several unique features,



Cabernet Franc on Lyre training at Harvest Ridge Vineyards near Ovid, NY

including **lyre** training for some varieties, a resident watchdog with **invisible fence** for deer management, and **drip irrigation** throughout. I'll ask Chris about issues he faced in developing his business, and we'll take a look at several blocks on the property. *Note: This is a great opportunity for 'new growers' to see what is involved in getting into grape production.*

Two graduate students, **Vinay Pagay** and **Michelle Oakes**, are conducting field research projects at the vineyard, and **Dr. Alan Lakso** also has temperature sensors in the vineyard as part of a new project. They will walk us through their projects and describe the goals and methods used to address questions of interest to the industry. Here are one-sentence project descriptions:

Vinay Pagay and Lailiang Cheng: *"Characterizing variability in the vineyard and enhancing and synchronizing berry maturation of Cabernet Franc"*. Often unripe flavors at harvest come from a small portion of unripe berries from late maturing clusters. Vinay and Lailiang are looking at the physiology behind the ripen-

ing process, to determine ways of accelerating or making it more uniform.

Michelle Oaks and Alan Lakso: *“Effects of management on canopy light interception, vine capacity and fruit quality of Cabernet Franc. How do we really define ‘overcropping’?”* Michelle and Alan are doing several canopy management manipulations to look at their effect on fruit ripening.



Canopy shade cloth is one of the treatments in the canopy management research project.

Alan Lakso: *A cooperative research project with Cornell, Finger Lakes growers, and a geographic information systems center in Auburn is documenting variations in temperature patterns within vineyards. Several small ‘I-button’ temperature loggers are placed in many different parts of the vineyard to document small-scale differences in heat accumulations that can influence development, winter injury, and fruit quality.*

Coffee and cold refreshments (water, grape juice) will be served. No preregistration necessary.

August 23. 3-5:00 PM. Swedish Hill Vineyards. Rte 414, Romulus. Come see Geneva’s new varieties, **Noiret**, **Corot noir**, and **Valvin muscat**, in the field, and taste some wines made out of these varieties. Dave Peterson and vineyard manager Rick Waite have been growing these varieties for over 8 years, and have both mature and young blocks. Find out the finer points of training, prun-



Two-year old ‘Corot Noir’ vineyard at Swedish Hill Vineyards, Romulus.

ing, disease management, and winter hardiness of these new varieties. Bruce Reisch, Geneva grape breeder who developed these varieties will be on hand to comment and answer questions. We will taste barrel samples and wines made out of the varieties from Swedish Hill and other sources (Presque Isle, in North East, PA and St James winery in MO).

COMPOSTING GRAPE POMACE IN THE FINGER LAKES

Jamie Hawk

*Community Educator - Sustainable Viticulture
Finger Lakes Grape Program*

The Finger Lakes Grape Program, in cooperation with Matt Doyle (Vineyard Manager for Centerra Wine), hosted a Coffee Pot Meeting on 20 July 2006 detailing the practice of composting, specifically as it relates to viticulture. Participants met at Centerra’s pomace compost piles on Middle Road between the towns of Hammondsport and Pulteney. Jean Bonhotal, Cornell Waste Management Institute, presented an overview of the composting process with insights for the grape growing community. Highlights of the presentation included:

- Start small and experiment with the process before trying it out on a large scale.

- Higher quality compost is produced when there are a variety of feedstocks in your compost pile (i.e. instead of composting only pomace, mix in animal manures or other feedstocks to diversify the piles).
- It is much easier to mix in other feedstocks when piles are first laid down rather than trying to mix them in at a later date.
- Applying a layer of bulking material (e.g. wood chips) under the piles promotes aeration and a more rapid and complete composting process.
- With proper management, pomace-based compost can be finished in 4-6 months.
- Compost should be thought of as a soil health enhancer, not necessarily as a direct fertilizer. Its effect is seen most in improved water retention, cation exchange capacity (CEC = the soil's ability to supply nutrients), soil structure and organic matter content.
- A potential problem with pomace-only compost is its high K^+ content which interferes with Mg^{2+} availability. Vines have not been symptomatic of Mg^{2+} deficiency, but petiole tests have shown low levels where pomace-only compost has been applied.
- The Cornell Waste Management Institute has published a series of fact sheets on composting. For these and other compost-related materials, visit their web site at: <http://cwmi.css.cornell.edu/Composting.html>
- Specific questions can be directed to Jean at jb29@cornell.edu

In addition to Jean Bonhotal's discussion, Matt Doyle and Jamie Hawk (Sustainable Viticulture Community Educator) described their respective fertilization/compost field experiments. Centerra Wine is experimenting with nitrogen fertilization in their Elvira vineyards just north of Heron Hill Winery. They have created the following treatments in separate blocks with clay and gravel soils: no additions; compost at 10 tons/acre; inorganic N (ammonium nitrate) at 50 lbs actual/acre;



Jean Bonhotal of the Cornell Waste Management Institute discusses composting techniques at Centerra Vineyards near Pulteney.

and a combined 6 tons compost and 25 lbs actual N/acre. Matt noted that they are in the early stages of a planned three year trial, so no conclusions can yet be drawn.

Within the Centerra blocks, Jamie Hawk has set-up 4 rows of replicates of 6 treatments in both the clay soil and gravel soil sites. The 6 treatments are: no additions; compost at 6 tons/acre; compost at 12 tons/acre; inorganic N (ammonium nitrate) at 25 lbs actual/acre; inorganic N at 50 lbs actual/acre; and a combined 6 tons compost and 25 lbs actual N/acre. All applications were banded under the rows, and sampling began in mid-May and has been done every 1-2 weeks since. The dual purpose of the work is to 1) describe the soil nitrogen dynamics in the various treatments and sites, and 2) evaluate the Cardy Nitrate Meter for use by growers to obtain a rapid and accurate estimate of available nitrate in vineyard soils. Preliminary results have shown no surprises. Spikes in available nitrate coincided with inorganic additions, soil nitrate levels fell faster in the high leaching potential gravel soils, nitrate levels began to rise prior to N additions as soils warmed and microbial activity increased accordingly, and though the compost additions showed no immediate effect on nitrate levels, anecdotal evidence saw better water retention and soil structure beneath the compost additions. The Cardy meter, which retails for about \$340 and uses about \$0.50 worth of reagent for each sample, has thus far proven useful. A more detailed

NOTES ON COMPOSTING GRAPE POMACE IN VIRGINIA

Fritz Westover

Viticulture Research-Extension Associate

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Wine producers in the state of Virginia have shown increasing interest in producing compost from wine grape pomace, which can then be applied to vineyard soils as a nutrient rich soil conditioner. The notes below have been compiled to provide a quick reference guide for farm wineries initiating small or large scale composting operations.

- pomace is high in N>K>Ca [**N-P-K-Ca = 2.0-0.5-2.0-2.0**]
- pomace is about 8% seeds, 10% stems, 25% skins, 57% pulp
- in general 1 ton of harvested grapes produces 100lbs of stems and 160 to 240 lbs of pomace (more simply, 3 tons grapes is about equal to 1 ton of total pomace)
- returns ½ to 1/3 of nutrients and OM removed from crop
- 1:1 ratio, pomace:manure bedding (straw + manure) provides 2/3 to 100% annual nutrient needs of vineyard
- pomace alone composts' slowly – low pH (3.5 to 3.8)
- compost microbes prefer a pH of 6.2 to become active (pH >6 desired)
- lime or other feedstocks must be added to the pomace in order to increase pH
- pomace has C:N ratio appropriate for composting (1:17 to 1:30)
- feedstock added to pomace should also have C:N ratio appropriate for composting (1:20 to 1:30)
- high lignin in seeds (17to 35%) limits decomposition in unturned piles
- wet piles (>60% moisture) may continue to ferment, produce acetic acid = poor quality (check for off odors in pile or other clues of anaerobic activity)
- 1-5 tons per acre annually is considered

- maintenance application
- frequent turning of pile (2x's or more/week) reduces N & OM
- turning pile only once every 2 weeks retains more N & OM
- pile temperature of 130-140°F for 1 to 2 weeks is necessary to kill weed seeds and pathogens
- pile temperature of 110-140°F is typical after the initial 1 to 2 weeks
- minimum of 3 turns of a pile is also required to kill seeds and pathogens
- keep pile temperature under 160 °F to reduce risk of combustion and loss of beneficial organisms
- composting is a 6 to 10 month process, dependent upon turning frequency, moisture, and temperature of piles or windrows

VITICULTURIST RICHARD SMART TO VISIT AUGUST 24-25

Viticulturist **Dr. Richard Smart**, author of *Sunlight into Wine* and world-renowned expert on canopy management will be visiting the Finger Lakes from August 24-25. He'll be available for private consulting, and a possible field discussion seminar (registration fee likely) on the morning of the 24th at Sawmill Creek Vineyards in Hector. Jim Hazlitt of Sawmill Creek will be arranging possible consulting visits. Please call Jim at 607-546-6777 if interested.

PETIOLE TESTING TIME

Tim Martinson

Petiole analysis is the most reliable method for determining the status of most major nutrients in grapevines. While soil tests, when used together with petiole tests, can be helpful in making fertilizer recommendations, they are not as reliable for indicating nutrient status of the plant. Here are some guidelines:

What tests are available?

Complete analyses (including nitrogen) and no-nitrogen petiole tests are available through the our office. We generally recommend the **no-nitrogen** test, for several reasons. Fall foliar analysis of nitrogen is not considered to be a reliable indicator of nitrogen needs and status. Nitrogen tests may be useful in comparing weak and strong vineyard sections, or for testing the effects of different rates on a particular variety. However, bloom-time samples are considered to be better for these purposes. Shoot growth and trellis fill are considered to be the most practical indicators of N status in the field.

When should samples be collected?

More than 70 days (10 weeks) after bloom. Samples can be taken later, as long as leaves remain in good condition, but should be collected *before harvest*.

What blocks should I sample?

- Accuracy of the recommendations depends on a representative sample. Thus a sample taken from a particular block may not necessarily apply to another block of the same variety, or even another part of the vineyard block, if it is large. Generally one sample should not be expected to provide useful information for more than 10 acres.
- Sample different varieties separately.
- For **young vines** just coming into bearing, sample every year for a few years. Production generally changes rapidly during the first few crops, and fertilizer needs also change.
- For **mature vines** that have had no major additions

of fertilizer, sample every 2 to 3 years. If high rates of fertilizers were made over the past few years to improve the nutrient status of the vines, collect samples yearly to track changes in the vines, and to determine if additional amendments are needed.

- For **Nonbearing vines** or **lightly-cropped** vines, samples may not be useful unless distinct visual symptoms or obvious problems appear. Without crop stress, most nonbearing and lightly cropped vines have higher levels of nutrients.
- For **problem areas in vineyards**, collect two samples - one in the area showing the problem, and one in a 'normal' area. Doing so and comparing samples will allow you to diagnose whether or not the problem is related to nutrient status of the vine.
- **Soil Tests** are recommended every 3 to 5 years, and prior to planting new blocks.

Where do I get petiole and soil test kits?

Petiole and soil test kits are available through the Finger Lakes Grape Program office. Show up in person between 8:00 AM and 4:30 PM to pick them up, or send a request to the program through the mail. Kits are paid for at the time they are picked up or mailed out after payment has been received in our office. Make checks payable to: *Finger Lakes Grape Program*. Fees are as follows:

New York State petiole samples: \$23 for no-nitrogen, \$28 for complete analysis.
Soil test kits: \$15 per kit

What do I do with the sample, and what happens to it then?

Detailed instructions are included with the kit. After you collect samples and return them to our office, they are analyzed at the plant tissue laboratory at Cornell. Cornell then sends you recommendations based on the analysis alone. I will be glad to follow up with a letter detailing further recommendations, based on analysis results and on information you include on the form provided with the kit. *Please call or e-mail me at 315-536-5134 or tem2@cornell.edu if you want my recommendations or interpretation of results.*

UPCOMING EVENTS

August 18. 10:00 AM to Noon. *Coffee Pot Meeting at Verrill Harvest Ridge Vineyards*, located on Combs Rd, W of County Rd 131 between Willard and Lodi. We will look at the 40 acre vineyard, started in 1999, and hear about three on-farm vineyard research projects from graduate students and Geneva faculty. See article in this newsletter

August 23. 3:00 PM to 5:00 PM. *Swedish Hill Vineyards, Rte 414, Romulus.* We will look at several blocks of the new Geneva varieties Noiret, Corot noir, and Valvin Muscat, formerly NY73.0136.17, NY70.0809.10, and NY62.0122.01.) and taste barrel samples and wines made from these varieties. See article in this newsletter for more information. No preregistration required.

September 12, 2006. 9:00 AM - 3:00 PM. *Berry Sensory Analysis Seminar.* NYS Ag Experiment Station Food Research Laboratory (Food Science), sponsored by the Cornell Enology Extension Program. Dr. Gianni Trioli will present a description of this method, whose goal is to provide viticulturists and winemakers a common language to characterize Grape Maturity in great detail on a 'score sheet'. \$80 fee applies, and preregistration required. Contact Dragana Dmitrievic at 315-787-2263 for more information.



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