Cornell Cooperative Extension

Grape Program in Ontario, Schuyler, Seneca, Steuben, and Yates Counties

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FINGER LAKES VINEYARD NOTES

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Edited by David V. Peterson.

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CURRENT SITUATION

David Peterson

Although there was much talk of the potential for overcropping in Native American varieties (particularly Concord) this year, the opposite may turn out to be the case for many growers. Two different scenarios are emerging in area Concord vineyards. A number of vineyards appeared to bud out well, but a high percentage of shoots have no clusters. This situation has been seen in previous years to some extent in many different varieties (especially Aurore and deChaunac) and is most common following a year that the vines were overcropped. The other situation is one that we have termed the "set malady" or "millerandage" where cluster numbers appear to be normal, but many or most of the berries slough off, resulting in very poorly filled clusters with many shot berries. Both of these situations are relatively common in area Concord (and to a lesser extent Elvira, Catawba, Delaware and Niagara) vineyards, while some Concord, Aurore and deChaunac blocks show the first situation. These situations are not restricted to the Finger Lakes, as numerous Lake Erie vineyards have similar problems, especially "millerandage." We have seen "millerandage" problems in a few vineyards over the past 4 years in the Finger Lakes, and have reported on it at the Finger Lakes Grape Growers' Convention in the past.

Cornell grape specialists and faculty have been investigating the potential causes of the problem for several years. We are in general agreement that the causes are probably not the same in all vineyards and several factors can potentially contribute to the problem. Vine nutrition (nitrogen, boron, zinc), various stresses (water, etc.), insects, viruses as well as other factors can potentially cause the observed symptoms. A combination of 2 or more of the above factors likely are culprits in most blocks. We will be continuing to investigate the problem and will be keeping you updated as to any new information. I do

request, however, that all growers who have set problems in their vineyards this year let me know, so that we can gain additional information on the problem, as well as offer some advice to you.

We had originally planned to offer a field meeting on crop estimation and thinning, but after looking at vineyards over the past few weeks, few Native American blocks would appear to benefit. Warm temperatures in recent weeks would suggest that most blocks should be able to ripen relatively large crops to acceptable sugar levels, provided that conditions are not exceptionally cool or dry the remainder of the season.

Moisture stress continues to be of concern, although scattered rains have occurred throughout most of the Finger Lakes in the early part of July. Much of the rain has come as downpours, however, and has run off more than it has soaked in.

Most premium hybrid and vinifera blocks look good to excellent at this point. Crop size looks to be about average on these varieties, with prospects for excellent quality if the weather continues to cooperate.

GRAPE VARIETIES FIELD MEETING AND WINE TASTING

Interest in new and alternative grape varieties in the premium wine industry has been experiencing a resurgence in the Finger Lakes and some surrounding regions. The growth of the premium wine industry here has created much of the interest, as has the consumer's willingness to break free of the "Chardonnay and Cabernet" rut. Along with this, Finger Lakes growers are looking to replace some less marketable or profitable varieties with those that offer greater potential.

On Thursday July 27 at 1:00 p.m. at the Geneva Experiment Station, we will be holding a meeting focusing on new Hybrid breeding lines and alternative hybrid and vinifera varieties. The meeting will include a tour of Station vineyards with Dr. Bruce Reisch that include several of the most promising hybrid breeding lines. A tour of Station vinifera vineyards with Dr. Bob Pool will include a look at Lyre trellising for improved production and quality. The day will end with a tasting of experimental and commercial wines produced from some of the hybrid breeding lines and other varieties such as Chambourcin, Cabernet franc, Lemberger, Pinot gris and other interesting varieties.

Pre-registration is requested using the registration form enclosed in this newsletter. There is a $10 registration fee for those enrolled in the Finger Lakes Grape Program through one of the participating counties (Ontario, Schuyler, Seneca, Steuben, Yates). If you are not enrolled or if you live outside of the above 5 counties, the registration fee is $15. All on-site registrants will be charged $20. Please include your check (payable to "Finger Lakes Grape Program") with the enclosed registration form. **Meet at 1:00 pm sharp behind Jordan Hall in the parking lot.**

INVESTING IN YOUR FARM BUSINESS - WORKSHOP

Grape growers have seen faddish products come and go, markets boom and bust, and varieties fall out of favor over the last 25 years. There are ways to decide how to invest in the farm operation to improve overall profitability. Is it better to buy an existing vineyard or plant a new one? Is it better to expand acres or buy into a harvester? If planting, which cultivar will be most profitable? How do you evaluate cash flow in 1995 vs. cash flow in 2005? These questions and others will be answered in a workshop to be held on August 7 and 14. Please pre-register using the form enclosed in this newsletter. The cost is $20 per person (make checks payable to "Cornell Cooperative Extension").

ORGANIC GRAPE GROWERS MEETING

The next meeting for growers interested in organic grape growing will be on Wednesday, August 2 at 6:30 pm at Joe Ottati's vineyard in Burdett. The vineyard is located at 4550 Route 414, approximately 5 miles north of Watkins Glen, and just north of Covert Road. Meet by the house (a cedar-sided ranch). The vineyard is visible from the road just north of the house;

the rows run East-West and are perpendicular to the road.

CROP ESTIMATION AND MECHANICAL THINNING PROCEDURES

Bob Pool
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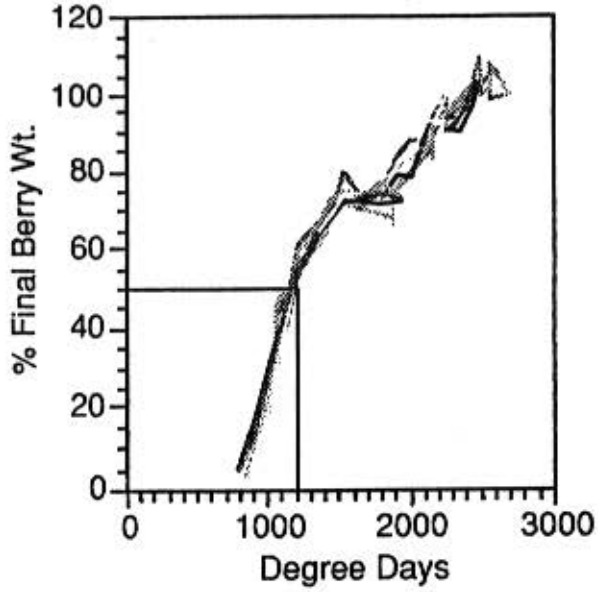
NYSAES, Geneva

(Reprinted from: *Finger Lakes Vineyard Notes '94 #8, June 26, 1994*).

Researchers and extension personnel cannot offer a magic number of what cropping level will ripen in all vineyards in a given year. Proximity to lakes, elevation, previous cropping history, and management practices all have an impact on vine health and cropping capacity. Growers are in the best position to know what crop level each individual vineyard can ripen. We can, however offer benchmarks of comparison so that growers can use their best judgment to make adjustments in crop load from year to year. In hand pruned vineyards, growers can count clusters to arrive at a rough idea of crop potential. The old rule of thumb on balanced pruned vines spaced at 9' x 8' was that 18 - 20 clusters per vine would equal one ton per acre. For example, if clusters were counted on a number of representative vines and the average cluster number per vine was 100, a grower could count on picking five to five and one half tons at harvest. Because commercial pruning practices are far less conservative than balanced pruning, this guide is no longer valid. The best way to judge crop load is to choose a representative two post length plot in a vineyard, remove the fruit either by hand or with a harvester, at the time berries have reached 50% of final weight.



Development of 'Concord' berries from balanced pruned, hedged or minimally pruned grapevines for the seasons 1991-1993

1993 Final Berry Weight (in grams) of Fredonia Grown 'Concords'

	Weight/Berry
Balanced Pruned	2.94
Narrow Hedge	2.50
Wide Hedge	2.25
Minimally Pruned	2.31

The key to this procedure is to know exactly where the crop is in the berry development curve. The graph and chart shown above give us two valuable pieces of information. The graph on the left gives us confidence in the timing of crop estimation across pruning systems and years. Regardless of the type of pruning employed or the final berry weight, fifty percent berry weight is consistently found at 1200 growing degree days. The chart on the right may offer some guidance on what final berry weight should be in different pruning regimes. In most years, final berry weight on hand pruned vines is roughly 3 grams while those on machine or minimally pruned vines is closer to 2.5 grams.

If fruit is removed at 1200 growing degree days (roughly 25-30 days after 50% bloom) the fruit should be at one half the final weight. When done by hand, this process is labor intensive, but growers with smaller acreage may find that it suits their situation very well.

If a mechanical harvester is used for this purpose, the following suggestions are offered that may guide those using this procedure for the first time.

*Choose a representative two post length plot in the vineyard for crop estimation.
*Larger blocks may contain variability due to elevation or soil differences. If this is the case, it is suggested that several sites in larger blocks be sampled to ensure that an accurate measure of crop potential is obtained.
*The harvester should be set up with the picking head moved in so that a constant gripping rather than a slapping of the canopy is obtained.
*If the vineyard has been mechanically or minimally pruned for a few years, the picking head can be moved out to accommodate the wider canopy, again in order to minimize vine damage.
* Some growers with experience in mechanical thinning suggest that longer, smaller diameter ($^3/_4$ inch rather than $^7/_8$ inch) beater rods may improve the efficiency of crop estimation and reduction procedures and reduce vine damage.
*Once a representative site in the vineyard is chosen, operate the harvester at 1 mph and set the beater speed between 300-325 rpm.
* Run the harvester over the two post length plots with the conveyers turned off. Once through the plot, turn on the conveyers and collect the fruit.
*Weigh the fruit from the plot and remove a sample of about 100 berries from the container.
* Count and weigh the berries to determine an average berry weight.

Example
A grower removes 120 pounds of fruit from a hand pruned two post length plot, weighs a sample of the berries and find that they average 1.4 grams.

The berry weight seems to confirm that fruit is roughly at half of final weight. That would mean that 240 pounds of fruit would be harvested from that two panel plot at the end of the season. Two post lengths is roughly one percent of an acre for vineyards planted at standard 9' x 8' spacing.
This would indicate that these vines have set a crop of 24,000 pounds or twelve tons. It is then the growers call whether that vineyard can ripen twelve tons to a given processor's standards in that year.

Crop Reduction
If in the example above, the grower decides that twelve tons will not ripen, the mechanical harvester then can be used to reduce the crop that the grower feels will ripen properly. The harvester can be run at a faster ground speed (2 - 2.5 mph) than was used for total fruit removal and it is suggested that the beater speed be set at 240-280 rpms as a starting point. The same procedure is used to predict how much fruit is being removed. If the grower in the above example runs the harvester through the next two post lengths and catches 40 pounds of fruit, this would mean that 80 pounds of fruit would be left on the vines(120 - 40 = 80). Eighty pounds of half weight fruit would result in 160 pounds of fruit per two post length plot at harvest, and that the crop was reduced to an 8 ton per acre level.

It takes a little time to get comfortable with this procedure, so growers should be ready to estimate and reduce (if necessary) shortly after bloom. The ideal time frame for crop reduction is 25-30 days after bloom. Fruit can be removed after this time, but the thinning response growers are looking for, sugar increase, will not be as pronounced. If done too late, a large crop will be reduced but will gain no additional sugar.

1995 DISEASE MANAGEMENT

Tim Weigle

The Problems -
1) High populations of powdery and downy mildew inoculum from 1994 infections.
2) Greatly reduced rainfall across the Finger Lakes has not provided early season infection periods to deplete this inoculum.
3) The minor infection periods in late May and early June resulted in black rot, powdery mildew and downy mildew infections in area vineyards.
4) Dry conditions which have occurred after the last infection period have many growers feeling there is no need to manage diseases at this time.

The Options -

1) Realize that there is still a TON of inoculum for powdery and downy mildew out in the vineyards waiting for rain and a warm day or night to get started. Dry weather has kept disease from going out of control up to this point but it has not eliminated it. Walking through vineyards we can find black rot lesions on the leaves (they will be moving to the clusters with a good rain event), powdery mildew leaf lesions (secondary inoculum does not need rainfall, only high humidity for infection to occur) and downy mildew in the clusters.

2) Either know for sure that your vineyard was disease free last year and therefore has low levels of inoculum or pray that it does not rain.

The Solutions -

1) For powdery mildew and black rot we are still suggesting an application of Bayleton, Nova or Rubigan in the 10-day post bloom spray. Use these materials at the higher rates to ensure adequate management. Remember we still have a great deal of the overwintering inoculum available. Rubigan does not provide adequate black rot management under any but light pressure situations and should be mixed with Ferbam in the 10-day post bloom spray. Nova and Bayleton both provide black rot and powdery mildew management but there is a question as to development of resistance to Bayleton by the powdery mildew fungus. Tank mixing Ferbam with the SI for black rot management will, while not specifically on the label, provide some management of downy mildew. For vineyards which have a history of downy mildew and had abundant leaf lesions last year, a Ridomil/Copper application may be advisable. This material has a 66-day to harvest interval so it will need to be applied by early July, especially for growers of 'Niagara' grapes. Vineyards with grapes that ripen much later in the year have a little more leeway in the use of this product.

2) Repeat what happened in 1994 where growers spent the summer on the tractor spraying copper and lime and/ or JMS Stylet oil trying to eradicate existing infections. With JMS Stylet Oil costing approximately the same per acre as a 5 oz rate of Nova it would make more sense to get the SI in the 10 day post bloom spray instead of playing catch up.

This may sound like doom and gloom, but the point I am trying to make is that a well timed spray at 10-day post bloom using the correct materials at the correct rates will go a long way towards reducing the problems that we had in 1994.

UPCOMING MEETINGS

July 27. A LOOK AT PROMISING HYBRID WINE GRAPE BREEDING LINES AND ALTERNATIVE HYBRID AND VINIFERA VARIETIES. New York State Agricultural Experiment Station, Geneva, NY. Details in this newsletter.

August 2. ORGANIC GRAPE GROWERS MEETING. Joe Ottati Vineyards, Burdett, NY. Details in this newsletter.

August 7, 14. INVESTING IN YOUR FARM BUSINESS - WORKSHOP. Geneva, NY. Details in this newsletter.

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