FINGER LAKES VINEYARD NOTES

Newsletter 8 August 4, 2004

Cornell Cooperative Extension

Finger Lakes Grape Program

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CROP INSURANCE EDUCATION MEETINGS SET

Tim Martinson
Finger lakes Grape Program

Crop insurance is one very important method of managing risk for your vineyard or winery. Yet a colleague who attended a recent training session reported to me that only 58% of the grape acres in the state are covered. Some of those experiencing winter injury may incur substantial uncovered losses this year that could have been moderated by purchasing crop insurance coverage.

Some reasons for lack of coverage include perceived ineligibility (due to lack of yield history or variety mix), unfavorable mix of varieties that reduces the opportunity to collect on sensitive varieties, lack of understanding of grape production/varieties by commercial agencies, and a feeling by some growers that they would need to incur losses too often to offset the annual premium. Many of these are misconceptions, and a result of the perceived complexity of the programs and lack of communication. Also a contributor is the fact that the deadline (November 20 this year, January 31 for AGR-Lite.) often follows close on the heels of the busy harvest season.

Greg English-Loeb discusses insect and mite research at the Centennial Fruit Field Days, held July 28 at the New York State Agricultural Experiment Station Farm near Geneva. Talks and field demonstrations by 10 Cornell and USDA grape researchers were featured.

The solution to this problem is education. There will be several opportunities in the next few weeks to learn more about crop insurance and also disaster assistance (through the FSA, low interest loans). The first opportunity will be at Empire Farm Days, August 10-12 (see schedule in following article), where Charles Koines, Crop Insurance Educator will make brief presentations and be available for questions. Representatives of the Farm Services Agency will also make daily presentations on disaster assistance programs.

August 19, 3:00-5:00, Yates County Auditorium, Penn Yan. *Crop Insurance Informational Session and Update.* With the Crop Insurance Education program (sponsored by NY Dept of Ag and Markets), we are organizing a special informational session for grape growers. At this session, **Charles Koines**, Crop Insurance Educator, and **representatives from private insurance companies** underwriting crop insurance will be present. I hope we will have a lively dialog in which

your questions about crop insurance will be answered. I also view this as an opportunity for growers to share their concerns about crop insurance issues with experts from both the government and private insurance side of the program. What works and doesn't work for you? This is your opportunity to get your two cents worth in. I encourage everyone to attend.

Please note that the County Auditorium is in the basement of the new Yates Co. Office Building, 417 Liberty Street. From the entrance foyer, take the elevator down a floor, or the stairway located down the corridor just to the right of the elevator.

EMPIRE FARM DAYS FEATURES GRAPE CENTER AND CROP INSURANCE SEMINARS:

August 10,11, 12. This year Empire Farm Days has expanded its coverage of grapes with a 'grape center'. The center will be located in the Empire Building, adjacent to the Cornell Agriculture and Life Sciences displays. Local industry organizations, such as **NYS Women For Wine** (Donna Gridley), **NY Wine and Grape Foundation** (Susan Spence), the **NYS Wine Grape Growers** (Jim Bedient, chair) and several Cornell programs (**Finger Lakes Grape Program, Integrated Pest Management, Spray Technology Program)** will have displays and experts on hand to speak with growers and the public.

Daily seminars on crop insurance and an overview of the NY wine industry will be presented. Wine donated by Canandaigua Wine Company will be available for tasting at designated times.

Schedule is as follows:

11 AM: Non insured crop disaster assistance program for grape growers, **Farm Services Agency, USDA.**

12 PM: A look at New York's Wine Industry, **Susan Spence, NY Wine and Grape Foundation**

1 PM**:** Overview and Recent Updates on the Grape Crop Insurance program, **Charles Koines, Crop Insurance Educator, NYS Dept. Ag & Markets**

These programs are offered daily on August 10, 11, and 12th.

PETIOLE SAMPLING QUESTIONS AND ANSWERS

Tim Martinson

As we move into mid August, it is time to plan for nutritional analyses to determine your fertilizer needs. 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 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.* This year (here in the Finger Lakes) that puts us into the last full week in August.

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. 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 other year. 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 Test**s 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. They will not be mailed out until paid, either. Make checks payable to: Finger Lakes Grape Program. Fees are as follows:

Petiole samples: $23 for no-nitrogen, $28 for complete analysis.

Soil test kits: $15.

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 soil and plant tissue laboratory at Cornell. Cornell then sends you recommendations based on the recommendations *and information from the form provided with the kit.* I get a copy, too, and will be happy to discuss the recommendations with you via phone (315)-536-5134, e-mail, letter, or personal visit.

RESULTS OF THE GROWER WINTER INJURY SURVEY

Timothy E. Martinson

In June, we asked growers to fill out a survey and send it to our office to document the extent of winter injury on their farms. Our program also surveyed several vineyards to directly estimate vine injury. Results of our survey (conducted by Bill Wilsey of our program, Steve Lerch and Dave Chicoine of Bob Pool's program) were summarized in last month's *Vineyard Notes*. In this article, I'll summarize results from the grower survey.

Methods. We asked growers to estimate the acreage, by variety, and place it into categories according to the estimated crop (no crop, less than 50% crop, 50-75% crop, and over 75% crop) and to also estimate the percentage of replants. We compiled this information and estimated the overall percentage of an average crop (weighted by acreage) expected this year for each variety. We then used acreage figures from the 2001 vineyard and orchard survey to estimate average tonnage for the Finger Lakes and estimate 2004 tonnage based on 2001 acreage. To do this we assumed average yield of 3.0 T (*V. vinifera*), 4.7 T (Hybrids) and 5 T (Natives). We also added up the acreage multiplied by percentage of replants to come up with an overall 'acre-equivalent' number of replants. The resulting number is not an indicator of the need to completely replace vineyards. Most of the dead vines are spread over a larger area of vineyards, most with 10-20% estimated replants.

Results. Forty-seven growers responded, representing 328 blocks and 2100 acres of grapes, a little less than a quarter of the total FL acreage. Hybrids and *V. vinifera* represented about 600 acres each, or ¼ of the hybrid acreage and ½ of the *V. vinifera* acreage. Native grapes comprised the other 900 acres, about 1/6 of the 5500 acres of native grapes in the region. It's likely that those who responded were more likely to have had significant injury than those who did not respond. Nonetheless, the overall results were comparable to those we obtained in the grape program survey. A wider range of varieties were included in the grower survey than in the grape program survey, however.

Results (Table 1) show some interesting trends, both within variety categories and among them. As expected, cold-sensitive *V. vinifera* varieties were affected the most. Overall, the expected crop is a

Table 1. Variety-specific injury and vine loss percentage and estimated 2004 crop in the Finger Lakes, based on the **grower survey** of 328 vineyard blocks. (2144 acres, 604 vinifera, 592 hybrid, 948 natives).

Variety	*No.*	*Total Acres Reported in survey*	*% Replant*	*Overall % of potential crop*	*Total Acres In FL*	*Base Tons 2001*	*Est. 2004 Tons*	*Replant acre-equiv. report-ed*	*Replant acre-equiv. Extra-polated*
DeChaunac	8	51	14%	21%	143	672	144	7	19
Rougeon	6	40	0%	34%	84	395	134	0	0
Traminette	5	16	4%	43%	20	94	40	1	1
Chambourcin	4	10	0%	47%	27	127	60	0	0
Cayuga White	13	79	0%	51%	239	1123	573	0	0
Aurore	11	84	0%	55%	724	3403	1877	0	0
Baco Noir	5	59	0%	62%	262	1231	768	0	0
Vidal	8	38	1%	65%	103	484	317	1	1
Seyval	6	23	0%	68%	235	1105	754	0	0
Vignoles	4	16	0%	81%	73	343	277	0	0
Marechal Foch	4	14	0%	100%	57	268	268	0	0
Other Hybrid	17	162	0%	89%	345*	1622	1442	0	0
Hybrids	**91**	**592**	**1%**	**63%**	**2312**	**10866**	**6814**	**8**	**32**
Delaware	5	27	0%	86%	178	890	765	0	0
Niagara	11	158	0%	86%	820	4100	3532	0	0
Concord	16	283	0%	93%	2703	13515	12582	0	0
Catawba	10	301	0%	100%	1188	5940	5926	0	0
Elvira	7	111	0%	100%	431	2155	2155	0	0
Other Native	6	68	0%	94%	177*	885	829	0	0
Natives	**55**	**948**	**0%**	**95%**	**5497**	**27485**	**26035**	**0**	**0**
Merlot	13	27	51%	8%	52	156	12	14	26
Pinot Gris	8	17	9%	12%	20*	60	7	2	2
Gewurztraminer	15	32	41%	13%	46	138	17	13	19
Pinot Noir	23	68	25%	18%	137	411	73	17	35
Cabernet Sauv.	15	42	40%	19%	61	183	35	17	25
Chardonnay	28	141	22%	24%	418	1254	298	31	92
Cabernet Franc	24	66	23%	30%	136	408	121	15	32
Riesling	35	181	17%	43%	340	1020	443	31	58
Other *V. Vinifera*	19	30	22%	18%	40*	120	22	7	9
V. vinifera	**180**	**604**	**24%**	**27%**	**1250**	**3750**	**1028**	**146**	**297**

Acres in FL from 2001 Vineyard Acreage Survey. Base Tons 2001 assume production avereage of 3.0T/acre *V. vinifera*; 4.7 T/acre hybrids, and 5.0 T/acre natives. Extrapolated 'replant acre-equiivalent' based on assumption that reported acreage represents all acreage.

little less than 1/3 of an average crop. Within the *vinifera*, Riesling did the best, with almost half a crop expected, while more sensitive varieties such as Merlot, Gewurztraminer, and Pinot noir had higher levels of bud injury and lower projected crops. Chardonnay, Cabernet Franc, and Cabernet Sauvignon fell in the middle.

Response of hybrids was a little more surprising, with a projected crop of about 2/3 of an average crop. Most notable was Dechaunac, with only 21% of an average crop projected. Cayuga White and Aurore had a major influence on the overall projection because of the high total acreage planted to these two varieties and 51-55% projected crop. Other hybrids (Vidal, Seyval, Vignoles, Foch) reported showed less effects. Notably, because of the higher acreage of hybrids, the total number of tons involved is projected at about 4000, compared to 2700 for *V. vinifera*.

For natives, overall projection is 95% of an average crop. Individual Delaware and Niagara blocks have shown significant winter injury, but reported projected production will still be about 86% - within normal season-to-season variability.

Replants. Growers reported about 8 acres of replants with hybrids, almost all with Dechaunac. For grafted *V. vinifera* a total of 146 acre-equivalents of replants were reported. If the reported acreage is representative of the remaining acres, that would indicate 297 acres of replants. As I already mentioned, these replants are spread out over a broad portion of

the acreage. About ¼ of the blocks reported less than 10% replants; a quarter were in the 10-20% range, a quarter in the 20 to 50% range, and a quarter above 50%. In other words, half the vineyards have less than 20% replants and the other half have over 20%. The projected percentage of replants varied a great deal, with Merlot, Gewurztraminer, and Cabernet Sauvignon affected more and Chardonnay, Cabernet Franc and Pinot noir affected less. Riesling and Pinot Gris had the lowest estimated replants at 17 and 9 percent respectively. (Pinot Gris has a relatively small acreage reported, which may have skewed the estimate). Injury was also heavily influenced by whether or not a grower 'hilled-up' (see previous VN article). Hilled-up blocks tended to have 0 –20% estimated replants, while unhilled blocks had 0 to 97% replants.

The vast majority of the crop loss resulting from 2004 winter injury will be for the 2004 crop year. However, *V. vinifera* production from the replants will take a few years to come back on line. Our best estimate is that there may be another 700 tons per year in crop reduction spread over the next three years before replacements come back into production. Some or all of this could be replaced by new acreage planted over the past 3 years that will be coming on line. Non-bearing vineyards had minimal injury (almost all were hilled up), should come into production as planned. I personally am aware of about 100 acres of new plantings in the Finger Lakes, but the actual number is probably considerably higher.

Limitations. Its important to keep in mind that these are only estimates. We will know the full story only after harvest. The injury varied greatly across the Finger Lakes, lessening to the south and western parts of the region. Some vineyards (particularly where extra canes were left to compensate for winter injury) may actually have above-average crops or need thinning because more buds pushed than was expected.

Perspective. The Finger Lakes, like most cool climate regions, is subject to periodic crop injury that reduces production. This year also saw significant winter injury in Washington State, for example, and even in Eastern regions (Pennsylvania, Virginia) where temperatures didn't drop below zero. Growers looking for reasons can find plenty of factors contributing to this year's injury, including: lack of heat during 2003, late harvest in 2003 (poor acclimation conditions), warm weather immediately preceding the Jan 9-10 cold event (possible de-acclimation), and unusual winter circulation (winds out of NE did not pass over Lake Ontario as is normal for this area) (See following article by Bob Pool). The last severe episode growers will recall is the 1980 'Christmas Massacre', with more moderate winter injury occurring in '93-'94. On average, we can expect significant injury to occur about every 10 years. On the plus side, it is our cool climate that allows the Finger Lakes to consistently produce distinctive wines (e.g. Riesling) that warmer climates cannot duplicate. The diversity of hybrids, natives, and *V. vinifera* also allows this region to buffer crop loss by producing many kinds of grapes. Finally, the winter injury has reinforced the importance of hilling-up and perhaps reducing crop in late years as ways to minimize the impact of winter injury.

My thanks to all the growers who participated in the surveys. The information will be invaluable to individual growers and to the industry as a whole. The keen interest shown by local and state government leaders is a measure of the key role wine production plays in the economy of the region.

THE PERFECT? FREEZE

Why was there so much vine damage in January, 2004?

Bob Pool
Dept Horticultural Sciences
NYS Agricultural Experiment Station

Winter cold injury is affected by several factors. The most important is the ability of a variety (or clone) to attain and retain cold hardiness. This will determine the **potential** cold tolerance of a given block. The actual cold hardiness on any specific date is affected by the yield the previous season (in relation to vine capacity), the growing conditions during the previous season, and the weather conditions immediately preceding the day in question. The actual amount of cold damage will also be affected by any special measures a grower might take such as burying canes.

Growing conditions in 2003

The weather in 2003 was wet and cool. Figure 1 shows that total seasonal heat accumulation was much below the 104 year average. Importantly, there was almost no heat accumulation in October or November (Figure 2). This meant harvest was greatly delayed. Many acres of juice grapes were not harvested because the crop never ripened. As a result there was no opportunity for vines to accumulate carbohydrate reserves after harvest (figure 3)

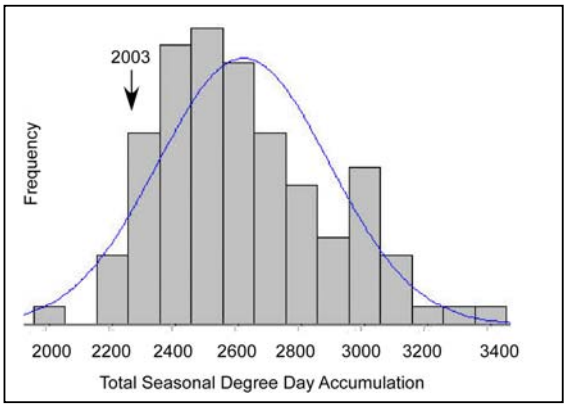

Figure 1. Total yearly degree day accumulation at Geneva, NY during the period 1900 – 2004.

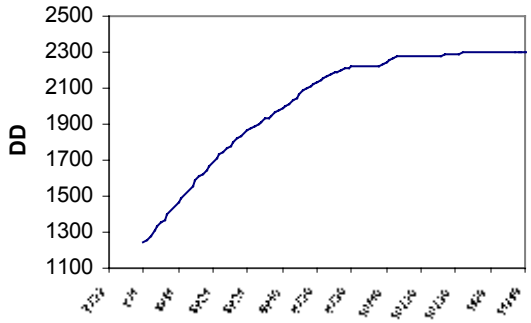

Figure 2. Heat accumulation at Geneva during August through November during 2003.

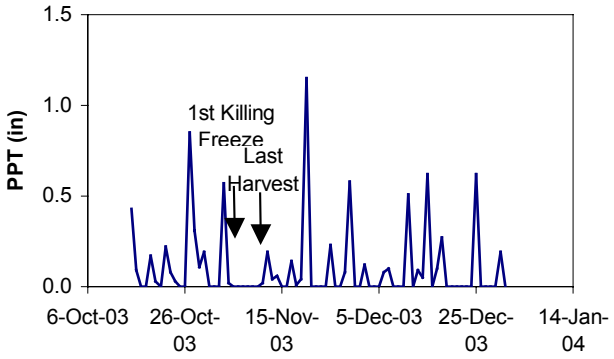

Figure 3. Rainfall during fall, 2003 at Geneva, NY. Note that our last harvest was after the first killing freeze and that soils were continuously wet after harvest.

Figure 3 illustrates important facts about the 2003 growing season. The harvest was very late, extending through the second week of November. There was a killing freeze before harvest, meaning that there was no opportunity for post-harvest accumulation of vine carbohydrate reserves.

Also it can be seen that the soil was continuously wet after harvest. This meant there was no opportunity to hill up graft unions before snow fell.

Winter 2003/2004 conditions

As a result of the poor growing season, buds did not achieve full cold hardiness. Steve Lerch measured bud-killing temperatures in the last week of December and found that the buds were about 2 – 4 degrees less hardy than expected.

Figure 4 shows the daily maximum and minimum temperatures at Geneva during January, 2004. Temperatures above 50 degrees will cause buds to lose cold hardiness. Temperatures at Geneva exceeded 60 degrees during the first week of 2004. This not only caused a loss of hardiness, it also melted any snow cover, leaving graft unions exposed.

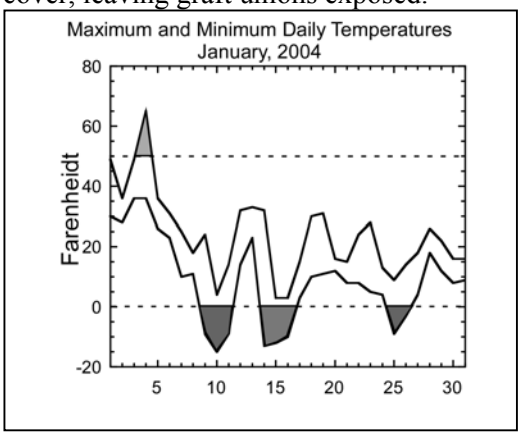

Figure 4. Daily maximum and minimum temperatures at Geneva during January, 2004

Temperatures below zero were frequent in 2004, but the official low temperature at Geneva on January 10 of –15 degrees was sufficient to kill many buds and vines. We recorded a range of temperatures from –16 to –13 in our various vineyard blocks..

Table 1 shows that cluster thinning was able to reduce the amount of cold injury.

Table 1. Effect of Thinning on winter survival of Riesling grapevines at Geneva

Thinning Treatment	2003 Tons/ Acre	Shoots/ Vine	Fruitful Shoot/ Vine	% Live Nodes
1 clu/shoot	2.9 b	48.5 a	21.8 a	17.7
2 clu/shoot	4.5 a	40.2 b	15.4 b	11.3
Not Thinned	4.9 a	36.0 b	12.9 b	13.3

UPCOMING EVENTS

August 10-12. *Empire Farm Days*. Waterloo, NY. This year featuring expanded grape exhibits in Empire Building and seminars on Crop Insurance. See article elsewhere in newsletter.

August 10. *Basic Must & Wine Analysis Workshop,* 9:00 to 3:00, Hobart and William Smith College. Taught by Dragana Dimitrijevic, extension Enologist with Thomas Henick-Kling's program. Call 315-787-2288 for more information and registration. Space limited to 9 persons.

August 19. *Detailed Crop Insurance Meeting for Grape Growers***.** 3-5 PM on Thursday. Yates County Auditorium, County office Building, Penn Yan. Representatives from the Crop Insurance Education program (Charles Koines) and also companies that sell crop insurance will be on hand to present detailed information about crop insurance for grape growers and to field questions. From the amount of comments I've heard from various parts of the industry about crop insurance, this will be a very timely meeting, and a great opportunity to clarify your questions and issues with crop insurance.

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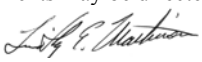

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