PLANNING A NUTRITION PROGRAM FOR YOUR VINEYARD

Nutrition Mini-Workshop
9 AM – 12:30 Noon.
April 14, Hector Fire Hall, Rte 414

One of the comments we received following the recent Grape Convention was that many are interested in learning more about nutrition and planning a fertilization program. We (Lailiang Cheng, Terry Bates and I) decided to repeat a program that we offered two years ago in Branchport to a full house. - TEM

Have you ever wondered what Cornell's tissue and soil standards for vineyards are based on? How lime recommendations are made? Why petiole and soil tests don't give the same recommendation? How the soils of the Finger Lakes originated? Whether foliar feeds are useful? How to use this information to plan your fertilization program? Join us for an in-depth look at what goes into planning a nutrition program for your vineyard, starting with soil characteristics and ending with using information about your soils and vines to plan your fertilizer program.

We're fortunate to be able to bring together several Cornell Research and Extension specialists for this half-day program. Dr. Terry Bates has been a Research Associate for the past 6 years, and has worked extensively with Concord grapes and root biology during that time. Yours truly (Tim Martinson) will draw upon his 7 years of experience interpreting soil and petiole tests and puzzling over standards, recommendations, and grower inquiries. Finally Dr. Lailiang Cheng will provide his perspective on using the information you have about your vineyard to plan a fertilization program.

There is no charge for this program, but preregistration is required. Please preregister for this program by calling our office at 315-536-5134. Registration will be limited to 30, with preference given for grape program enrollees from the five-county region (Ontario, Schuyler, Seneca, Steuben, and Yates Counties).
Topics to be covered include:

Soil characteristics and nutrient availability. Soil pH and mineral nutrient availability **Terry Bates**
- soil texture and nutrient availability

Diagnosing vineyard nutrient status **Tim Martinson**
- Visual deficiency symptoms
- Interpreting soil and petiole analysis

Developing a fertility program. **Dr. Lailiang Cheng**
- Vine nutrient supply and demand
- Foliar feeds: what works?
- Timing and rates – what's behind Cornell's recommendations?
- Putting it all together

**LIVING WITH WINTER INJURY**
**HOW DID WE DO IN 2003?**

Bob Pool and Steve Lerch  
*Department Horticultural Sciences*  
Cornell University

In a newsletter last summer we talked about the winter cold injury at Geneva, and the ways we changed our vineyard practices to deal with it. Subsequently we took a lot of data on these vines. This will report how well our approach worked and some of the other things we learned.

**How we treated the vines**

Our goals were to maximize crop for the 2003 growing season and minimize retraining and pruning problems in 2004. Most vines were VSP trained. We use catch wires during the summer to keep the shoots vertical, and last spring we kept those wires in place. For pruning, we cleaned up the cordons and/or removed one cane wherever there were double wrapped canes. We trimmed the tops of vertically oriented canes just above the top pair of catch wires. We also spent a lot of time tying up suckers to use as future replacement trunks.

In one block containing, Chardonnay grafted to different rootstocks, we accounted for every node retained on the vine. For each cane we recorded the number of nodes, and for each node whether it had a shoot or a fruitful shoot. We assumed that fruitful shoots came from primary buds and other shoots from secondary or tertiary buds. For other vines, we just noted the number of nodes and fruitful or non-fruitful shoots on each cane.

**Rootstock Block**

Almost 3,000 canes examined on 280 vines. On average vines had 15 canes that were 8 nodes long. This means there were about 120 nodes per vine. Average bud kill in this block was 78%, meaning the average vine should have had about 94 shoots. Our normal goal is 24 shoots/vine, so in most cases there were more than enough shoots to get trellis fill, and the primary job was to keep the best 24 shoots. Figure 1 illustrates bud survival in the block on a cane basis. About 1/3 of the canes had no shoots and a little more than 1/3 had 1 or 2 shoots per cane. Twenty percent of the canes had 3 to 5 shoots and only about 10% of the canes had more than 5 shoots.

The harvest yield was about 3.2 tons/acre, which is only about 60% of our typical yield in the block. Tim Martinson’s question to me was, “was it worth it?” This is a research block and we spend so much time taking data, I can’t tell you how much extra time it would take to treat a commercial block this way. However, 60% of a crop is a lot better than no crop.

*Figure 1. Relative frequency of canes with different numbers of shoots.*

**What else did we learn from the rootstock block?**

There are a lot of what Tim Dennehy used to call, “factoids”, about vine cold hardiness, and we had an opportunity to see how well they fit the data we collected.

**Factoid 1. Small diameter canes are more cold hardy than large diameter ones. Ideally we should select pencil size canes for fruiting.**

Pencil diameter is indicated in *Figure 2*. There were more canes of this diameter than any other class. However, the data do not support the idea that larger diameter canes are less hardy than small diameter canes. In fact it appears that larger diameter canes
have a higher proportion of live nodes. However, remember that these vines had been subject to considerable drought stress during the 2002 growing season. The proportion of extremely vigorous canes was probably very low. Still, the message seems to be, canes thicker than a pencil can be both cold hardy and productive.

Factoid 2. Canes with persistent laterals are a problem. They indicate high vigor (and hence less hardiness) and their fruitfulness is unpredictable. Buds on the cane node may often be unfruitful, but in those cases the first node on the lateral will tend to be very fruitful. Persistent lateral canes should be spurred, but the combination of cane node bud and the lateral node bud should be counted as a single unit when balance pruning.

This factoid may or may not be well known, but at the time that balance pruning concepts were strongly stressed, it was considered an important “fact”. When vinifera varieties began to be grown commercially, there was a lot of concern about persistent laterals. Our early observations were that, unlike labrusca varieties, the buds at both the cane node and the lateral node tend to grow shoots and be fruitful on vinifera varieties. Thus, a spurred lateral should be treated as having two buds, not one. There still was concern about cold survival. In high vigor situations, there were plenty of occasions when the cane buds failed while lateral nodes survived winter. Fortunately, as growers have gained experience with vinifera, these instances of very excessive vigor have become more rare.

In assessing the event we are discussing here, we kept track of bud survival on persistent laterals as well as of cane node buds. The relatively low vigor status of these vines is indicated by the fact that only 1.4% of the nodes had persistent lateral canes. These were trimmed to 1 node. The survival data is shown in Figure 3. The data support the concepts given above. First, bud survival on nodes with persistent laterals was slightly lower than on nodes without persistent nodes (18% vs. 27%). Secondly, survival of buds on persistent laterals was much higher than buds on canes. These data suggest that spurring lateral canes might be good practice, especially when increased shoot counts are desired.

Factoid 3. Pruning cold damaged vines to spurs is not a good idea. Because spur pruning retains only basal nodes that develop in a more shaded region of the vine, they will be neither as cold hardy nor as fruitful as nodes developing further out on a cane.

Figure 4 shows both the total number of nodes in the vineyard at different cane positions (node 1 is at the base of cane), and the number of nodes with shoots. Again, the data both supports and does not support the conventional wisdom. Note that the proportion of live nodes increases as node position increases. Thus average percent bud survival will be
higher on canes than on spurs. However, there are many more canes with 3 to 5 nodes than there are with more nodes (more short than long canes). Thus, spurring all canes to 4 or 5 nodes can result in a similar number of shoots as retaining a lower number of 10 – 12 node canes. Of course, retaining all canes as was done in this case will result in a still higher number of shoots.

We should also remember that if we had actually cut all the canes back to 3 to 5 nodes, then the proportion of buds that developed into shoots might have been increased. This is because bud break at nodes 3 to 5 would not be inhibited by shoots developing at higher node positions, which may have happened in this vineyard.

**Factoid 4.** Maintaining cordons on winter-injured vines can be a problem. There will be high survival at the ends of the cordons and lower survival in the vine center.

Or alternatively, maintaining cordons on winter injured-vines can be a problem because canes developing at the ends of the cordons do not mature as well as those developing in the head of the vine.

**Figure 5** reveals no obvious pattern of bud survival by cane position. It looks as if survival of the first two canes on the south end of the vine might be lower than average and the opposite true at the north end. Statistical analysis failed to reveal any significant difference among node positions or a correlation between node position and survival.

This doesn’t mean that we are off the hook in relation to cordons. Although there is no obvious pattern, there may well be many spur positions without shoots on these vines. These will have to be filled in with base shoots or the cordons may need to be replaced.

Relative survival of cordons and canes will be discussed further below.

**Factoid 5.** Low vigor vines or vines growing on low vigor rootstocks will resist winter cold better than more vigorous vines.

This is a question we have been chasing for many years. All the data discussed up to now came from a rootstock experiment that had been in the ground for more than 10 years. Although the vines had not been managed, as strictly in the last two years as previously, we were anxious to see if insights into vine hardiness would be revealed.

Table 1 summarizes the results with 22 different rootstocks. The stocks are divided into three vigor categories based on the average vine size during the previous 12 years. The data do not show any real relationship between average vine vigor and survival. If anything, low vigor vines perform less well than medium or high vigor vines, which had higher bud survival, shoot number and tended to have more fruitful shoots.

This is consistent with our previous experience in this vineyard, and by performance of individual rootstocks within a given vigor category. Vines of superior and inferior survival were found in each vigor category. This is also shown in Figure 6 where box plots are made for the mean number of fruitful shoots/vine for rootstock vines in each vigor category. There were 7 different rootstocks each in the medium and high categories. The low vigor category contained 8 different rootstocks.
Note that there vines with 40 or more fruitful shoots/vine in each category as well as vines with 30 or fewer.

**Training Systems and Survival.** We did not map each node on each cane when assessing survival in our training system experiments, but we did evaluate each cane, and obtained yield records. Table 2 shows the results for three varieties trained to five different training/pruning combinations.

Several patterns emerge. Lyre trained vines tend to have more canes, more nodes/vine, and more fruitful shoots than other systems. Mid-wire cordon trained vines had high values for canes/vine and the lowest percentage of dead nodes. When cordon pruning is compared to cane pruning both VSP and Lyre trained vines have better survival values for cordon pruning. Scott-Henry trained vines were not superior. In all cases the lower (down pointing) parts of the Scott-Henry vines had little growth or survival.

**Effect of Training Systems on Yield Components.**

Average yield ranged from 1.9 tons/acre (Cabernet Sauvignon – VSP cordon) to 7.9 tons/acre (Cabernet Franc – mid-wire cordon) (table 3). These yields justify the extra expense involved with modifying the pruning practices for 2003 and the extra cost pruning/training that will be incurred in 2004.

Lyre training was generally superior to VSP or Scott-Henry (Tables 3, 4). Cordon pruning was superior to cane pruning. Scott-Henry produced the lowest yields for Chardonnay and Cabernet Franc vines, but was better adapted to Cabernet Sauvignon. The strategy was too successful with Cabernet Franc. An almost 8 ton/acre yield was too high to sustain wine quality. Even the three treatments with 5 or more tons/acre may have been marginally over cropped

**Training System**

Performance of the various training systems is highlighted in Table 4. The last data column in the table is labeled % dead arms. Growth from each arm was evaluated at the end of the season for signs of trunk injury. Signs included collapse and withering of vegetative growth, reddening of foliage or premature foliage drop. The data indicate that Scott-Henry and Lyre cane pruned vines were most injured. Mid-wire and VSP cordon pruned vines had the lowest damage levels.

**Performance of Varieties and Various Clones of Varieties**

**White Wine Varieties**

Nine clones had less than 75% injury including (in ascending order) Auxerrois, Chardonnay clones 7, 95, 4, 76, Tocai Friuliano, Chardonnay cl 96, Fresia and

<table>
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<tr>
<th>Vigor Category</th>
<th>Canes/Vine</th>
<th>Cane Diameter (mm)</th>
<th>Nodes/Cane</th>
<th>Shoots/Cane</th>
<th>Live Nodes (%)</th>
<th>Shoots/Vine</th>
<th>Fruitful Shoots/Vine</th>
<th>% Dead</th>
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Table 1. Cane and bud production and survival for Chardonnay vines grafted to rootstocks of different vigor category.

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<tr>
<th>Variety</th>
<th>Training System</th>
<th>Canes/Vine</th>
<th>Nodes/Vine</th>
<th>Shoots/Vine</th>
<th>Fruitful Shoots/Vine</th>
<th>% Dead</th>
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Table 2. Effect of variety and training system on node production and bud survival
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<th>Rot Fruit/Vine (lb)</th>
<th>Clusters/Vine</th>
<th>Tons/Acre</th>
<th>Cluster Wt. (g)</th>
<th>Berry Weight (g)</th>
<th>Juice Brix</th>
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Table 3. Effect of variety and training system on yield components in 2003.

Chardonnay cl 78. Arneis, Trousseau, Viognier, Sauvignon blanc, and Semillon had more than 90% shootless nodes (Table 1).

Only Auxerrois had more than the desired 24 fruitful shoots/vine. Chardonnay clones made up 7 of the 11 clones with more than 10 fruitful shoots per vine. Rkatsitelli, Fresia and Tocai Fruliano were the others. Sauvignon blanc and Semillon had less than 1 fruitful shoot per vine. Auxerrois, Rkatsitelli and Clone 7 and 76 of Chardonnay had less than 10% trunk injury. Trousseau, Fresia, Viognier, Semillon and Sauvignon blanc had more than 80% trunk injury.

Winter Injury in Red Wine Clones

Cane and node number retained per vine as well as bud and trunk survival are given in table 1. Only one red wine variety, Gamay Noir, produced an excess number of fruitful shoots. Although 60% of the nodes had no shoots, there were 34.4 fruitful shoots per vine. An additional 4 clones of red wine varieties had less than 75% shootless nodes. They were all Pinot noir clones and included: cls 113, 115, Calera and Geneva. These data are consistent with previous laboratory derived bud hardiness data, but are of great interest as the two Dijon clones (113 and 115) are being widely planted due to their superior wine quality. Additional clones with significant fruit bud survival included Dornfelder, and the Mariafeld and 10/18 clones of Pinot noir. Syrah (Shiraz clone), Trollinger, Merlot, PN cl 164 and Malbec had essentially zero survival of fruitful buds. Many of the trunks were severely damaged during the winter. This is evidenced by crown gall growth, collapse of the foliage during summer and severe foliage reddening in the fall (due to accumulation of sugars above the damaged trunk). In general, trunk survival was similar to bud survival. The exception was Trollinger where trunk injury was low relative to bud survival.
**Table 4. Effect of training system on survival and yield components. Data is average of three varieties**

<table>
<thead>
<tr>
<th>Training System</th>
<th>Canes/Node (%)</th>
<th>Fruitful Shoots/Node (%)</th>
<th>Adjusted Shoots/Node (%)</th>
<th>Dead Nodes/Cluster (%)</th>
<th>Tons/Acre Cluster Wt. (g)</th>
<th>Dead Arms/Cluster (%)</th>
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</thead>
<tbody>
<tr>
<td>Mid-wire Cordon</td>
<td>19.7</td>
<td>175.8</td>
<td>81.4</td>
<td>23.9</td>
<td>25.1</td>
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<tr>
<td>Lyre Cordon</td>
<td>27.5</td>
<td>272.8</td>
<td>82.7</td>
<td>34.0</td>
<td>29.6</td>
<td>69.2</td>
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<tr>
<td>Lyre Cane</td>
<td>19.3</td>
<td>203.5</td>
<td>58.8</td>
<td>25.3</td>
<td>27.2</td>
<td>68.4</td>
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<tr>
<td>VSP cordon</td>
<td>17.6</td>
<td>186.4</td>
<td>57.0</td>
<td>18.9</td>
<td>23.6</td>
<td>65.3</td>
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<tr>
<td>Scott Henry</td>
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<td>44.6</td>
<td>20.1</td>
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<td>59.6</td>
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<tr>
<td>VSP cane</td>
<td>13.8</td>
<td>149.9</td>
<td>51.7</td>
<td>19.4</td>
<td>23.9</td>
<td>73.1</td>
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</tbody>
</table>

2003 Yield

Only 9 of the 36 clones reported in table 5 yielded at least 2 tons/acre in 2003. Auxerrois had the highest yield per acre (3.5). Gamay Noir and Dornfelder were the only red wine clones with 2 or more tons/acre yields. Except for Rkatsitelli, the rest were all Chardonnay clones. These include clones 4, 76, 7, and 95. The yield order for Pinot noir clones was: 115>Cerea> 113> Mariafeld>164. Fresia, Arneis, Merlot, Sauvignon blanc, PN clone 164, Malbec and Semillon produced no useable grapes in 2001.

Summary

In spite of more than 50% bud injury, 9 clones yielded more than 2 tons of grapes per acre in 2003. Best overall performance was from Auxerrois that had highest bud survival and highest yield. Gamay Noir was the most productive red wine variety. The Dijon clones of Chardonnay and Pinot noir were generally among the most cold hardy and productive. California Chardonnay clones 4 and 7 were also among the more productive clones. Rkatsitelli and Dornfelder produced substantial yields in spite of relatively high bud injury. This was related to large cluster size. Sauvignon blanc, Semillon, Merlot, Malbec and Syrah had essentially no yield.

As I write this we are once again cutting buds. Mid-January, 2004 temperatures were below –10 in several of the station vineyards. Our preliminary results suggest worse injury than 2003. I’ve been telling people that we were handed lemons in 2003 and tried to make lemonade by taking advantage of the opportunity to document problems and approaches to address the problems.

Having essentially not pruned our vines in 2003, I’m not sure what we will do in 2004. I am sure that we will attempt to leave a large number of nodes in the hope that some will produce fruit and others will produce leaves to sustain future growth. We will also need to address the problem of future re-training and trunk replacement. Let’s hope we find a recipe for lemonade – we might not be drinking wine.

**MANAGING THROUGH THE GRAPE PRICING CYCLE**

Dr. Jerry White  
Dept. of Applied Economics and Management  
Cornell University  
Ithaca NY 14853-7801

Barry Shaffer  
Lake Erie Regional Grape Program

Over the past 30 years, growers of juice grapes have experienced periods of several consecutive years of declining prices. (See the figure below for the US production of juice grapes and New York juice grape prices from 1975 through 2003.) The figure illustrates graphically that the price cycle is a highly relevant topic. The first NASS estimate of NY juice grape price in 2003 was $198. If this estimate stands up after all cooperative earnings for crop year 2003 are known, this will be the first year since 1994 that prices were below $200 per ton on average.

In New York, following a peak in 1977 at $223 per ton, there followed a period of generally declining prices until 1984, a time of severe financial crisis in the industry when the price bottomed out at $136 per...
ton. The market was affected by an over-supply of grapes and a strong US dollar which led to increasing supplies of imported concentrate and wine, as well as a reduced incentive to export processed grape products.

A declining US dollar, the development of the export market in Japan, and new product development and promotion helped to fuel recovery of prices in the mid-to late 1980’s. After peaking in 1990 at $294 (a record for NY juice grapes), prices declined for four consecutive years, reaching a low of $198 in 1994. A series of large national crops and the slow growth in consumer disposable income resulting from the recession in the early 1990’s had a negative impact on prices during this period.

The peak in the most recent cycle occurred in 2001 with the average price at $287. (This was preceded by a small dip in prices in 1999 due to the largest juice grape crop on record following a short crop in ‘98.)

Counting cycles in terms of years of declining prices, in the first cycle during this 29-year period, prices generally declined for the next seven years. (There was a slight up tick in 1981.) In the next down cycle beginning in 1991, prices declined for the next four years. We are now in just the second year of decreased prices, albeit the decline this past year of $74 per ton was the steepest decline in the past 29 years.

The NASS price data (including estimated cooperative payments) shows prices differently compared to just a list of area cash market prices. If you use announced cash market prices, they last bottomed out in 1995 and peaked in 1998 a mere three years later. Using these numbers, 2003 was the fifth year of price declines from the 1998 peak.

Profitability for grape growers is definitely influenced by price and crop size. Using results from the Lake Erie Grape Farm Cost Study (LEGFCS), we observed the worst profitability in 1995 with low prices and average yields. Average income per acre dropped under $1,200. Costs were down but Schedule F profit per acre was only $51 and once operator labor was taken into account the average grower had an $88 loss per acre. Contrast this with 1999 results of high price and high yields with good growing conditions. The average income per acre broke the $2,000 barrier for the first time with profits being roughly $400 higher per acre than 1995!

The venerable Cornell agricultural economist, the late Max Brunk, used to say, “The best cure for low prices is a low price!” He meant that a low price discourages production, and prices recover. Some older, less efficient, and/or financially stressed producers drop out. Others change to different crops or different varieties of grapes. In some cases this acreage is abandoned, but more often, if on a good site, it can be leased or sold. (Remember the crisis at the low point in 1984? According to the New York Agriculture Statistics Service, between 1985 and 1990, New York lost 28 per cent of the farms growing grapes and 14 percent of grape acreage.) The problem that causes long cycles, which has been recognized with perennial crops, is that high prices signal to producers to ramp up production, but the vineyards planted only come into full production three or four years later. More planting may follow before low prices signal that there is a surplus of production capacity.

This article will now focus on suggestions for growers about how to manage their cash flow and financial resources in such a way as to be able to weather the ups and downs of the grape price cycle. Suggestions are made for three different cases: (1) What growers should do every year; (2) actions to consider in periods of low prices; and (3) actions to consider in periods of high prices.

Every Year

Good financial management in periods of low prices really starts with sound financial practices being established and used every year!

- Prepare monthly and annual cash flow projections in December or at least by January. Periodically (monthly or quarterly) record and compare actual expenditures vs. projected expenditures. If you need to borrow operating capital, contact your creditor early to discuss your credit needs. This should have been done already this year!
- Set financial and production goals for next year and five years from now. Goals should be SMART-Specific, Measurable, Attainable (but they should also be set to push you and your employees to higher performance!), Rewarding, and Timed (to indicate the time line for the goal to be accomplished)
Prepare a prioritized list of capital investments, giving preference to projects that will allow you to increase profits or realize cost savings.

**Periods of Low Prices**

- Practice cost control. Look for opportunities to reduce operating expenses while holding yield and brix constant. Cutting cultural costs such as spraying can be counter productive. Some examples of actions that do not affect yield or crop quality:
  - Carefully negotiate major purchases, looking for the best deal.
  - Take advantages of discounts by timely payment and pay suppliers before interest charges start to accrue. Don’t pay suppliers with credit cards unless you can pay the balance before interest charges are assessed.
  - Try to adjust family living expenses to the extent possible. Also, can a spouse or another family member find off farm employment?
  - Hire less labor and do more of the vineyard work by unpaid family labor.

- Sell non-essential capital assets, e.g. a building lot, machinery, and cooperative certificates.

- Eliminate blocks that are contributing the least to cash flow and liquidate enterprises that are unprofitable. If you are financially able and plan to be in the grape business for the long haul, contract to lease more vineyard acreage in order to make more efficient use of existing machinery and other fixed resources. Remove and replant vineyards whenever possible near the bottom of a down cycle…the lost revenue is not as great when prices are low, and the plantings will come into bearing during the up cycle!

- Cooperative members benefit from receiving payments from past crops in a year of low revenue, which helps to even out their cash flow. Like most risk reduction tools, this has a cost—the opportunity costs of interest on delayed payments. (Whether this is a good idea depends partly upon the level and yield curves for interest rates. Since interest rates can be independent of the grape price cycle, you may find longer-term rates to be relatively high. That is definitely not the case now…rates are extremely favorable for restructuring!)

**Periods of High Prices**

- Pay down principal on debt. This will help to avoid erosion of net worth in periods of low prices.

- Review you tax situation a couple of months prior to the end of your tax year. Make purchases of inputs for next year’s production to the extent permitted by NYS and IRS tax regulations.

- Don’t make investment decisions solely based on avoiding income taxes. Give preference to investments that improve profitability. Don’t get the “New Paint disease”!

**Looking Ahead**

Was 2003 the bottom of a low price cycle? Down cycles usually last more than two years, but history is not a perfect predictor! Some aspects of the current cycle are favorable for higher prices next year. These include a strong economy and consumers’ disposable income is rebounding; a weak US dollar has made exports more favorable and decreased the attractiveness of the US industrial market for imported concentrate; and the glut situation with California juice and concentrate has peaked. We may be looking at a smaller national
crop of Concord and Niagara because of vine stress, both east and west, from last year’s large crop.

Some factors, on the other hand, are unfavorable for higher prices. It is noteworthy that there is considerable concern in the industrial Concord market, in which customers were blending larger percentages of surplus California and South American red and white grape concentrates that were being sold at very low prices. The surplus situation in California has abated so that prices are now higher. The weaker dollar makes the offshore concentrate more expensive. The lingering concern is that now that prices of the California and offshore concentrate are higher, will processors return to the stronger flavor of the Concord variety in their product line?

**RECORD CROWD ATTENDS 55TH ANNUAL FINGER LAKES GRAPE GROWERS’ CONVENTION AND TRADE SHOW**

**Tim Martinson**

Over 350 grape growers, winery owners, and exhibitors attended the Finger Lakes Grape Growers Convention and Trade Show, held Saturday February 28 at the Waterloo Holiday Inn. The convention featured talks on winter injury to vines, mechanical thinning, disease and insect management, spray technology, and Cornell’s new Viticulture and Enology undergraduate program. The trade show featured wall-to-wall exhibits by 44 commercial suppliers.

**Dr. Martin Goffinet** led off the convention with a discussion of the anatomy of winter bud and trunk injury, and professor **Bob Pool** followed with a case study of how his program modified pruning at their Chardonnay vineyard at Geneva’s New York Agricultural Experiment Station. “Despite bud injury of more than 80%, we were able to get 60% of a full crop, which is better than no crop”.

This discussion of winter injury was timely for growers throughout the Finger Lakes, facing the most severe bud injury since 1993 following a cold spell in early January that brought temperatures down to –12 to –18 degrees Fahrenheit.

Growers of juice and bulk wine grapes were faced with a record crop and poor ripening conditions in 2003. Many opted for mechanical thinning with grape harvesters to reduce the heavy crop to more manageable levels. Research Associate **Terry Bates**, based at the Vineyard Laboratory in Fredonia, discussed results of mechanical thinning trials. “For every three tons of grapes removed by mechanical thinning, we were able to raise sugar contents (Brix) by one percent.” This practice helped many growers ripen their grapes to minimum standards of 14.7 to 15% sugars, and for many made the difference between having a marketable crop or leaving the grapes unharvested.

The very wet, cool 2003 growing season was especially challenging for disease management. Plant Pathologist **Wayne Wilcox** noted that powdery mildew appeared exceptionally early, and weather conditions favored the development of downy mildew. He cited powdery mildew resistance to a major class of fungicides, the ‘strobilurins’, as a major challenge for growers in 2004.

“For sensitive varieties, depending on strobilurins to control powdery mildew fruit infections will be like playing Russian roulette. You may get good control, or the material might fail completely without warning”. Wilcox outlined strategies for growers to use to avoid this outcome.

Entomologist **Greg English-Loeb** discussed recent studies on the biology and life cycle of grape cane borer, an insect that can tunnel through canes, causing them to break off when grapes are tied in the spring. “Adults are out a few weeks earlier in the spring than we had thought. This makes them a very difficult target for insecticide sprays”.

Enologist **Thomas Henick-Kling** introduced Cornell’s new Viticulture and Enology program, noting that a new steering committee had been appointed by College of Agriculture and Life Sciences Dean **Susan Henry** to get the program up and running. Cornell will be hiring a new enologist this spring to be based in Ithaca. His program has also hired an extension enologist **Dragana Dmitrijevic** to strengthen outreach activities to New York wineries.

He noted that industry summer internships will be an integral part of the program for students. “We are counting on the industry to support this program by hiring students as interns. The practical experience they gain will be essential to turning out skilled professionals that the industry needs to continue growing”. Following his talk, Henick-Kling received several offers from growers and wineries to host students.
Spray Technologist **Andrew Landers** focused part of his presentation on making adjustments to airblast sprayers to improve the pattern of deposition on vines. “The left and right sides of airblast sprayers move air in different directions because of the clockwise rotation of the fans. By angling nozzles on the left side downward by 30 degrees, growers can direct more spray to the canopy and greatly reduce spray drift”.

State Statistician **Stephen Ropel** of the New York Agricultural Statistics service in Albany noted that while 2003 production was 202,000 tons, just 3000 tons short of the record 1999 crop, utilized production fell to 156,000 tons. Of the 46,000 tons not utilized, 42,000 were not harvested and 4,000 were harvested but not sold. Concord and Niagara comprised 62% of utilized production, down from 82% in the previous two years. Average prices for grapes dropped from $369 to $295 per ton for wine grapes, while juice grape prices declined from $272 to $198 per ton.

Business Management Specialist **Barry Shaffer** of the Lake Erie Regional Grape Program noted that profitability for bulk juice producers in 2003 is likely to be down significantly, with results comparable to the dismal 1995 season. Prospects for 2004 are for prices to remain steady or slightly increase, while crop size should be average at best.

Extension specialist **Tim Martinson** presented results of a three year study comparing yield, wine quality, and vine function in irrigated and non-irrigated vineyards. “During the two drought years of 2001 and 2002, irrigated vines had larger berries with higher maturity levels than non-irrigated vines. What surprised us in the wet 2003 season was the strong carryover effect of drought stress on yield. Vines that had received irrigation in 2001 and 2002 produced 2 to 3 more tons per acre than unirrigated vines in 2003, even though we didn’t irrigate in 2003”.

Fruit tree nutrition specialist **Lailliang Cheng** talked about the relative contributions of stored nitrogen and the current season’s nitrogen supply on vegetative and fruit growth of potted Concord vines. “Our results show that early vine growth is more dependent on reserves, while fruit development depends more on nitrogen taken up by vines during the current season”. Results suggest that post-harvest foliar nitrogen sprays may be effective in boosting vine growth during the following year. Followup studies on mature vines in the field are currently underway to verify results of the potted vine study.

In addition to commercial exhibits, the trade show featured a demonstration by **Julie Carroll** of TracGrape, a computerized pesticide record-keeping program developed by the NY State Integrated Pest Management program. **Carol Ann Joki** of the Finger Lakes Community College in Canandaigua was on hand to sign up growers for additional computer training classes. Through a New York State Workforce Development grant and additional funding from net proceeds of Viticulture 2000, instructors from the Finger Lakes and Jamestown Community Colleges have provided basic computer training to over 80 Finger Lakes and 100 Lake Erie region grape growers at no charge.

The meeting closed with the traditional Wine and Cheese Reception, featuring more than 100 wines from over 30 **Finger Lakes Wineries**. The reception was sponsored by the **Cayuga Wine Trail**, and wines were poured by members of the **New York State Women for Wine**.

**CONVENTION THANKS**

It takes the efforts of many speakers, volunteers, and exhibitors to put on the annual convention. I would like to acknowledge the following people and businesses for their support in putting on the convention:

Mary Jean Welser and Steve Lerch of Cornell’s NY Agricultural Experiment Station at Geneva demonstrated how to examine canes for bud injury.
Grape Program Advisory Committee

Jim Bedient (Trade Show Chair)
Steve Bond
Cameron Hosmer (Wine Reception – thanks to Mike DeGaray, Hosmer Winery)
Harry Humphreys
Rich Jerome (Convention volunteer)
Bill Dalrymple (Convention volunteer)
Dave Stamp
Keith Egresi
Jim Pizura
Tim Moore (Convention Volunteer)

Cooperative Extension Staff:

Brian Hefler, Administrative Assistant
Bill Wilsey, Program Assistant
Vivian Jones, Office Manager
Barbara Elias, Bookkeeper
Cyndy Lehner
Doreen Koch
Peter Landre – Yates County Extension Director

Speakers

Terry Bates
Lailiang Cheng
Greg English-Loeb
Martin Goffinet
Thomas Henick-Kling
Alan Lakso
Andrew Lander
Tim Martinson
Bob Pool
Stephen Ropel
Barry Shaffer
Wayne Wilcox

Special Lunch Sponsors

Finger Lakes Harvester & Vineyard Equipment, LLC
Canandaigua Wine Co.
Helena Chemical Co.
Lakeland Equipment
UAP Northeast

Coffee Break Sponsor:

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Concord Nurseries
Crompton Corp.
Double A Vineyards, Inc.
Dr. Konstantin Frank
Durand-Wayland
Empire Tractor, Inc.
Farm Credit of Western NY
Farm and Country Insurance
Finger Lakes Community College
Finger Lakes Construction
Gowan Company
Growers Nutritional Solutions
Innovative Fence & Trellis
Korvan Industries
Ledebuhr Industries, Inc.
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New York Farm Bureau
New York Farm Net
NYS Wine Grape Growers
NY State IPM Program
NAIA, Inc.
Orchard Valley Supply
Paige Equipment Sales
Plant Defense Boosters, Inc.
R F Inter-Science Co., Inc.
Spec Trellising
Superb Horticulture LLC
Syngenta Crop Protection
The Green Hoe Company Inc.
Valent BioSciences Corporation
Vineyard and Winery Management
Yates County Soil and Water

Wine Reception

Special thanks to the Cayuga Wine Trail for sponsoring the cheese plate, and the New York State Women for Wine for pouring the wines.

Anthony Road Wine Co.
Arbor Hill
Bully Hill Vineyards
Cayuga Ridge Estate Winery
Fox Run Vineyards
Glenora Wine Cellars
Goose Watch Winery
Hazlitt 1852
Hunt Country
Hosmer Winery
Hunt Country
Konstantin Frank
Knapp Winery
Lakeshore Winery
Lakewood Vineyards
Lamoreaux Landing Wine Cellars
Leidenfrost Vineyards
Logan Ridge Winery
Long Point Winery
Lucas Winery
McGregor Vineyards
Miles Wine Cellars
Prejean Winery
Shalestone Vineyards
Silver Thread Winery
Swedish Hill
Wagner Vineyard
National Grape Cooperative – Welch’s

COMPUTER TRAINING UPDATE

Over 80 Finger Lakes growers and 100 Lake Erie growers have participated in the free basic computer training courses offered through Finger Lakes Community College, and funded by a grant from the New York State Workforce Development Grant and by the New York Wine and Grape Foundation, from proceeds of Viticulture 2000, with matching funds.

I spoke with Carol Joki of Finger Lakes Community College about additional computer courses. She attended the convention last weekend, and tells me that 1) They will be able to accommodate everyone on the waiting lists for basic computer classes, including those that had signed up for ‘word’ and ‘excel 1’. They will also be offering Excel II and Quickbooks for a fee in 2 classes scheduled for April and May. Cost is $75 per person for Excel II (April 7 and June 2) and $129 per person for QuickBooks Accounting Program (April 19 and May 21). Both classes run for seven hours. A registration form is included with this newsletter

Excel II (7-hour course)
Learn to name blocks of data, protect data from input errors, link files, create macros to automate tasks, manage information in lists with sort, search, use AutoFilter, and create and format charts that display relationships.

QuickBooks (7-hour course)
Overview; setting up income and expenses; entering opening balances; working with lists such as customers and vendors; working with business forms such as credit memos, sales receipts, customer payments, purchase orders; banking and billing; and reports.

REGISTRATION OPTIONS
- Mail registration form and payment to FLCC Institute, 4340 Lakeshore Dr., Canandaigua, 14424.
- Fax registration form and payment (charge or purchase order only) to FLCC Institute, 585-396-1743.

PLEASE CALL THE INSTITUTE IF YOU CANNOT ATTEND A COURSE!
- If you register for a course, we are counting on your attendance when we make a decision about the course running.
- Cancel your registration at least 24 business hours prior to course start date.

To cancel off a course, call the Institute at 585-394-3500, ext. 7660.

NOTE
FLCC Institute’s courses are held at Finger Lakes Community College Institute Building
4340 Lakeshore Drive, Canandaigua
“RIPE FOR THE PICKING: COMPUTER CONFIDENCE TRAINING FOR GRAPE GROWERS”
REGISTRATION FORM FOR FLCC INSTITUTE
EXCEL II AND QUICKBOOKS COURSES
(There is a per person cost for these courses: $75 for Excel II and $129 for QuickBooks)

These optional training courses are offered to grape growers through a partnership with the NY Wine and Grape Foundation, Cornell Cooperative Extension, Jamestown and Finger Lakes Community Colleges.

Fill out one form for each participant.

Company: ____________________________________________

Name:  

Last                                                                           First                                                       MI

Soc. Sec. #: ____________________________________________
Your SS# validates your attendance for auditing purposes by the State University of New York (SUNY).

Mail Address: Street                                                                           State Zip

Daytime Phone: ___________________________   Evening Phone: ___________________________

E-Mail Address: ___________________________

Circle either “first choice” or “second choice” for each course you want to register to take.
Mail payment with Registration Form to FLCC Institute, 4340 Lakeshore Dr., Canandaigua 14424

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PAYMENT OPTIONS

- Check: Make payable to FLCC Institute.
- Charge Card: MasterCard, Visa, Discover (must complete an FLCC charge form).
- Purchase Order: Indicate that you will pay and billing information.
UPCOMING EVENTS

March 15.  *Finger Lakes Culinary Bounty Food and Beverage Trade Show.* Holiday Inn, Waterloo, NY. "Creating a Culinary Experience for Finger Lakes Visitors." Program and trade show with over 40 exhibitors featuring Finger Lakes farm and processed food products, wines and other beverages to help raise consumer awareness about Finger Lakes Culinary Bounty and what it stands for. Contact Monika Roth for further information: mr55@cornell.edu or (607) 272-2292.

March 15-18.  *Wineries Unlimited.* Host Resort. Lancaster, PA. Sponsored by Vineyard and Winery Management. Program features a wide variety of topics on viticulture, enology and wine marketing. Dr. Curtis Ellison is expected to be the keynote speaker on matters of wine and health. A large trade show accompanies the meeting. For more information, visit www.vwm-online.com/.

March 18.  *New Grape Grower Workshop* in association with Wineries Unlimited. Host Resort. Lancaster, PA. This intensive, full-day overview is directed at people who have just started a vineyard or plan to start a commercial vineyard in the Mid-Atlantic regions. It is team taught by Dr. Tony Wolf (VA Tech), Dr. Joe Fiola (U Md) and Mark Chien (Penn State). It covers all topics associated with developing and operating a commercial vineyard.

March 25.  *Lake Erie Regional Grape Program Annual Conference.* SUNY, Fredonia, NY. Joint morning program followed by afternoon breakout sessions on various topics. For more information: http://lenewa.netsync.net/public/lergphom.htm or call 716-672-2191.

April 1-2.  *33rd Annual Wine Industry Workshop.* Ramada Inn, Geneva, NY. Program highlights this year: Business management and wine marketing; Winter damage: impact on grape supply and grape quality; Assessing grape ripeness and uniformity of ripeness; Atypical Aging - research update and recommendation for wine producers; Irrigation strategies for white and red grapes; Asian multicolored ladybeetle: distribution and chemistry of off-odor; Working with OSHA for a more efficient wine cellar management; Winery sanitation: avoiding TCA contamination; Winery energy needs. For more information: http://www.nysaes.cornell.edu/fst/faculty/henick/wiw/index.html

April 14-16.  *Managing Soil Fertility.* Riverhead, NY. The program will feature nationally known agronomist and lecturer Neal Kinsey. Kinsey, author of Hands On Agronomy, will present a condensed version of his five day course based on the Albrecht method of soil balancing. Lectures will be held at Cornell Cooperative Extension of Suffolk County, 423 Griffing Ave., Riverhead, NY. For more information on Kinsey Agricultural Services, go to www.kinseyag.com. For registration information, please contact Alice Wise or Libby Tarleton at 631.727.3595 or via e-mail at lt68@cornell.edu.  
*Listing courtesy Alice Wise.*