Review of the 2002 Growing Season

As the 2002 growing season comes to a close, Finger Lakes growers can count themselves fortunate to have dodged more than a few bullets thrown out thereby Mother Nature. Despite frost, scorching temperatures (more reminiscent of Fresno, CA, than Penn Yan, NY) and severe drought stress, many Finger Lakes growers are reporting a surprisingly large crop. Based on conversations with growers, I expect the overall tonnage to be close to average—or at least close to last year’s average.

Winter. Winter was again mild, with a winter low temperature of 7°F in Geneva. Vines seemed to have good levels of reserves because of the timely harvest in 2001, and winter injury was minimal.

Rapid Budburst and Frost Injury. A look at maximum and minimum temperatures (shown in Figure 1) during the early part of the season tells the first part of the story. Unseasonably warm temperatures in mid-April – including three consecutive days in the 80’s – promoted rapid bud swell and budburst (Figure 2). In many sites, vines went from bud swell to 3-inch shoot growth in a matter of days. Unfortunately, this was followed by several days at the end of April when low temperatures hovered around freezing. Frost injury ranged from severe in some vineyards north of Keuka Lake and at higher elevations around Hector, to light or moderate in some Branchport, Bluff Point, and Pulteney vineyards, to barely noticeable elsewhere. I estimate less than 5% of the acreage was affected in the Finger Lakes.

Growing Degree-Days. We accumulated a lot of heat units, but with wide fluctuations during the early part of the season. Over the entire growing season (Figure 3), we accumulated 60 more growing degree days (GDD—average daily temperature above 50°F) than average in April; a whopping 90 LESS than average in May, and 20 to 50 more in June through August. Once again, September stood out with close to 150 growing degree days more than normal. At the close of September, 2002 was the third hottest growing season of the last 30 years (91 and 98 were hotter).

Figure 1. Daily high and low temperatures at Geneva, March – June 2002.
Rainfall. Contrary to popular opinion, 2002 was not the driest year on record. The winter months saw precipitation moderately below normal (Figure 4), but April, May, and June rainfall was well above average. The rain abruptly stopped in mid-June (around bloom), and the rest of the summer was dry—particularly August (second driest of the last 30). In many parts of the Finger Lakes, there was little appreciable rainfall from late June until September 16 (3/4 to 2 inches), followed by 1-2 inches dumped by Hurricane Isidore on September 26. This wet, then dry and hot weather had some predictable and unpredictable effects on grapes in the Finger Lakes.

2002 FINGER LAKES GRAPe PROGRAM ADVISORY COMMITTEE MEMBERS
The Finger Lakes Grape Program Advisory Committee is a group of 13 grower and industry representatives that provides guidance and direction in planning meetings and activities of the program. Current members are:

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<th>Ontario County:</th>
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<th>Yates County:</th>
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<td>Rich Jerome, Naples</td>
<td>Steve Bond, Hector</td>
<td>Jim Bedient, Branchport</td>
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<td>Ralph Amberg,</td>
<td>Dave Stamp, Watkins Glen</td>
<td>Jim Ritter, Dundee</td>
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<td>Bill Dalrymple, Lodi</td>
<td>Keith Egresi, Pulteney</td>
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Drought Symptoms. By late July, drought symptoms were present in many vineyards, and by the end of August these symptoms (yellowing and browning leaves, termination of shoot growth, raised fruit) were widespread. Severity varied, with Keuka and Canandaigua lake vineyards showing more moderate effects, and the Hector and Cayuga lake areas showing the most severe symptoms. Hard hit were some of the vineyards on well drained gravelly soils—normally some of our most productive vineyard soils. Early reports indicate that Vitis spp. yield on some sites may have been affected. Other sites with heavier soils—recharged by the spring rainfall—may have retained enough moisture to dampen the effect of the drought.
Figure 4. Deviation of 2002 rainfall from 30 year average (1973-2002) in Geneva NY.

Figure 5. Rain at bloom: in many parts of the Finger Lakes, there would be no significant rainfall again until mid-September.

Remember that drought reduces photosynthesis. This is because the leaves close their stomates (small pores through which gas exchange occurs) as it becomes more difficult to draw water from the soil. Leaves also heat up, because most water is used in evaporative cooling to maintain leaves at the ambient air temperature. Experimental measurements on irrigated and unirrigated vines by Alan Lakso and Liang Cheng this year indicated that leaf function on drought-stressed vines started to be severely curtailed at the end of July (compared to irrigated vines), with this effect continuing through mid-September (Figure 6). That’s six weeks with reduced vine function – which is bound to have an effect on crop size and quality, vine reserves, or vine size in 2003. Droughty July and August weather is becoming common, with four of the past five years (’98, ’99, ’01, ’02) being dry. More growers are starting to consider installing irrigation, a trend I think will continue in coming years.

**Heat-related Fruit Injury.** Following three days of temperatures over 90°F in early September, heat related browning of exposed clusters appeared in numerous vineyards. Symptoms started with browned berries (Figure 7) on the South (East-West rows) or West (N/S rows) sides of vines, and looked a bit like botrytis infections. On closer inspection, we couldn’t find any fungal organisms or cracking associated with botrytis. Rachises and pedicles (stalks to which berries are attached) remained green. After about a week, affected berries desiccated and shrivelled, and the problem didn’t spread to the rest of the clusters (or vines). Riesling and Catawba were most

Continued on pg. 16
MARKETING

2002 Grape Price Summary

Timothy E. Martinson
Finger Lakes Grape Program

Our annual listing of stated grape prices showed many prices stayed the same from 2001 to 2002, a few gaining, and some notable declines in varieties with significant acreage in the Finger Lakes.

The accompanying table compares average, high, and low prices by variety and category, and how they changed from 2001 to 2002. It is compiled from prices submitted to the NY State Dept. of Agriculture and Markets on August 15 of each year. The figures are simple averages of all the numbers we received. Please note that the numbers and averages reported are not adjusted by tonnage. Each price is given the same weight whether the processor purchased 10 tons or 10,000 tons. They are NOT true average prices received. Smaller processors tend to pay higher prices than bulk processors, so the low end of the range may be closer to the actual average price received by growers.

More processors each year are publishing two or more prices for different quality levels, which we try to include as much as possible or practical. A new development this year is that a few buyers posted premium prices for fruit from specific growers.

Native Grapes: Prices paid for bulk Concord from large processors declined, with the "average" dropping 5% and the lowest price dropping by 21%. This drop, combined with lower to average tonnage, will have a large impact on grower income because of the tonnage involved. Early Catawba prices declined by 6%, Niagara, Elvira, and Delaware prices remained similar. Among the minor Natives, prices for Diamond, Isabella, and Vees rose by 2-3%.

Red Hybrids: As was the case last year, overall red hybrid prices remained stable, except for Canandaigua’s red hybrid price, which is not included in this table. Two wineries paid premium prices for Baco noir (later harvest), Chambourcin, Vincent, and Chancellor prices rose 4-9%.

White Hybrids: Average prices didn’t change. Notably, Aurelia, with the largest tonnage and bulk markets, remained steady. Vidal and Vignoles posted declines in both the normal and late-harvest categories.

Red Vinifera. There was little change from 2001. Cabernet franc, Cabernet Sauvignon and Merlot showed modest 1-2% declines in average prices. Lemberger prices rose, as the number of wineries listing a price for this variety increased from two to five.

White Vinifera. Chardonnay prices declined overall by 9% among the 13 prices listed, while Riesling prices stabilized. However wineries continued to pay higher prices for premium Chardonnay and Riesling (list by seven and five wineries, respectively).

We thank the following processors and wineries for providing copies of their price lists for this report:

Anthony Road Wine Company
Atwater Estate Winery
Bully Hill Winery
Canandaigua Constellation Brands
Castel Grisch
Chateau Lafayette Reneau
Cliffstar, Inc.
Eagle Crest Winery
Dr. Konstantin Frank Vinifera Wine Cellars
Fall Bright Winemakers Shop
Fox Run Vineyards
Furkerson’s Winery
Glenora Wine Cellars
Hanzlik 1852 Vineyards
Hermann J. Wiemer Vineyard
Heron Hill Winery
Hunt Country Vineyards
King Ferry Winery
Lakeshore Winery
Lakewood Vineyards
Lucas Vineyards
McGregor Vineyards
Royal Kedem / Springale Farms
Sheldrake Point Vineyards
Swedish Hill Vineyards
Widmer's Wine Cellars

Delaware clusters at harvest.
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**Table grapes**

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**White Hybrid**

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**Red Vinifera**

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Riesling vineyard on west Seneca Lake.

**NEWSLETTER NO. 11**
MARKETING

2003 Agricultural Outlook: Grape and Wine Situation at Harvest

Jerry White
Department of Applied Economics and Management, Cornell University

Grape Production. The national grape crop is expected to be 7.1 million tons. If realized, this would be nine percent above last year’s crop and about six percent above the average of the last five years. California, which accounts for over 90 percent of US production, is up about nine percent from last year. The eastern US crop was hit hard by freeze damage; Michigan’s vineyards were decimated by freeze damage for the second straight year, and the crop is expected to be only 20 thousand tons (normal production is 60 thousand tons). Pennsylvania’s estimated production fell by 27 percent. There are, however, ample supplies in the Western United States, and continued increase in bearing acreage in California, Washington, and other large producers in the world such as Australia, hangs over the marketplace as grapes planted in the last five years come into production.

There is a glut of grapes in California. At the time this article was written, industry estimates of wine grapes to be unharvested in California ranged as high as 75,000 tons. (As a point of reference, the New York industry utilizes on average about 42,000 tons of its grapes annually for wine.)

New York’s grape crop was estimated at 135 thousand tons, down nine percent from last year’s modest crop and 13 percent below the average of the last five years. Unseasonably warm temperatures in April followed by a series of freezes resulted in a short crop, especially in parts of the Chautauqua-Erie grape belt. The state’s production has been highly variable in the last five years, ranging from 128 thousand tons in ‘98 to 205 thousand tons in ’99. This year’s weather was a good reminder of the importance of risk management. Growers should be taking a close look at crop insurance. About 55 percent of the grape acreage in New York is now covered by crop insurance policies, including over a third of the acreage that is covered by buy-up policies.

The Big Picture - The US Wine Market. Performance in the US wine market is being driven by increased table wine consumption (Figure 1), which now accounts for 90 percent of wine consumed. From 1995 to 2000, wine consumption grew at the rate of four percent a year. Consumption actually grew in 2001, but wine shipments slowed due to the recession and reduced orders resulting from the events of 9/11, increasing just one percent for the year.

Coming into 2002, the effects of a weak economy and the decline in on-premise consumption were factors of concern to wineries nationally as consumers stayed home more, hurting the travel and restaurant trade. Price resistance was evident at the ultra premium level; luxury priced products in general were in trouble in this economy. Very competitive pricing from imports and from non-premium production areas in California (where there is a glut of wine grapes) made ample supplies available to consumers at lower price points.

Wine imports are running far above last year, and most of this growth is in the $7 to $10 per bottle category. Fortunately, restaurants and retailers began ordering more wine in the first quarter of this year as the economy improved and the travel and restaurant trade began to recover. Competitive retail prices meant bargains were available to consumers. These factors helped to boost consumption and shipments in 2002. However, continued economic uncertainty, the threat of a double dip recession, the decline of the stock market this summer, and the potential for war in the Middle East means that consumers are still wary. The year will probably end with improved shipments for 2002, above the level for 2001 but below the growth rates seen in the last half of the ‘90s. Shipments for 2002 will probably increase by about 2.5 percent. Imports grew by about six percent in 2001 and accounted for about 22 percent of the US market. The increase in imports was fueled by a strong dollar which made imported wines a real buy for consumers, and totaled 126 million gallons in 2001. The value of imports is $2.2 billion, much more than exports, because of relatively high valued imports from France, Italy, and Australia.

Retail wine sales for the US reached $19.8 billion in ‘01 (Figure 2). With the price cutting that occurred this year, retail sales will probably barely reach $20 billion in 2002.

Exports have been an exceedingly bright story for the US industry. Exports account for about 11 percent of total California wine shipments. Washington State has grown presence in export markets, especially in the United Kingdom and Japan, and now accounts for about $15
Figure 2. Retail Sales of Wine in The U.S. 1991-2001

For the fourth year in a row, more buyers offered premiums (i.e. there were two sets of prices, regular grade and premium) for higher quality grapes this year. Slightly higher prices were listed for premium Chardonnay and Riesling grapes. This reflects the efforts of some wineries to step up the quality ladder to higher price points. Growers who can meet the demand for premium quality will likely be rewarded for their extra expenses, especially as the Finger Lakes region continues to gain greater recognition as a premium wine producing region.

While the state’s growers experienced lower yields, much of the decrease came in the Concord and Niagara varieties in the Lake Erie region. Finger Lakes growers had yields similar to last year’s, or about average. Slightly lower yields were experienced for some Native American varieties, particularly those located on cooler sites with moderate frost injury. Most growers’ revenues (assuming a mix of American, hybrid, and vinifera varieties) will be below last year. This is the third consecutive year of modest production, and this year prices are down as well. Several factors suggest the situation will be somewhat unfavorable in the next few years for native varieties and for the less desirable French American varieties. The glut of grapes in the West, with sizable non-bearing vinifera acreage in the Central Valley, cheap off-shore and California concentrate and bulk wine, and an excess of wine grapes worldwide are factors placing stress on those selling to large processors.

Continued on p. 10

Figure 3. Average Price of V. Vinifera Grapes
New York State, 1991-2001 and 2002 (projected)

million in sales, mainly premium and super premium categories. Growth in exports was 67 percent over the five year period ending in 2000, totaling 68 million gallons for a value of $547 million. Growth slowed in the two most recent years and the value of exports actually declined by one percent in 2001 because of the strong US dollar and intense competition from Chile and Australia. More than 90 percent of exports originate in California.

Exports of US wines are expected to increase slightly in 2002. Import growth for the year is likely to show an increase of about 15 percent.

Finger Lakes Grapes Prices and Implications for Growers. For growers selling to large wineries, prices for grapes on contract ranged from slightly higher to considerably lower than last year, depending upon the variety. Canandaigua Wine Company, the major buyer of wine grapes in New York, listed a $5 per ton increase for Aurore, and a $10 increase for Elvina, Catawba, Delaware, white hybrids, and Niagara listings were unchanged. Large decreases were listed for red hybrids and Concord. The most notable price offering was for non-contracted grapes which hardly paid for the cost of harvesting ($50 for most varieties and $100 for non-contracted red hybrids). Thus the overall average price for native varieties and hybrids, when weighted by volume of purchases, will be down significantly from last year, reflecting the glut of non-premium grapes nationally.

Prices offered by Finger Lakes wineries for vinifera grapes were slightly lower than last year. Price offerings for Chardonnay led the decline with a nine percent decrease. Riesling prices declined slightly. Red vinifera varieties such as Merlot, Cabernet Franc, Cabernet Sauvignon, and Pinot Noir were down slightly or unchanged. Prices for these red varieties had been increasing in prior years. Lower prices probably reflect the effects of the weak economy and the effects of 9/11 on shipments in the past year. The average prices for all vinifera in the state of New York will decrease for the 2002 crop year to about $1,275 per ton, a significant decrease from last year, and the first decrease in average vinifera prices since 1998 (Figure 3).
The outlook for high quality V. vinifera grapes remains favorable for the long run. There is considerable optimism about the Finger Lakes small premium wine grape industry, and growers who can grow premium grapes to sell to the growing small premium winery segment have reason to be positive despite the softness of the current economic situation.

Implications of the Economic Slowdown for Small Wineries. Small wineries with quality wines and good marketing skills experienced only modest sales growth in 2001, and for the first half of the current year. Winery visitation leveled off and, in some areas, decreased slightly. Some relatively new wineries reported strong sales increases, but larger wineries reported that traffic was not increasing. One positive development was the increasing sales through wholesalers that several wineries experienced. While the profit to the winery is not nearly as great as for direct sales, increasing sales through wholesale channels is a necessary step for the Finger Lakes to gain more national and international recognition and to increase growth potential for the future.

Small premium wineries in the Finger Lakes have been in their "comfort zone" with heavy reliance on direct sales. Certainly, they have been insulated from the ups and downs that larger wineries with national distribution face, especially when the economy is soft as in the past year. And profit per bottle is certainly higher, as noted above. Nevertheless, breaking out of the barrier of reliance on direct sales will be a huge plus for the region. As the industry is currently configured, sales growth is constrained by the growth in local population and growth in personal disposable income of local residents, as well as growth in tourism. The upstate New York economy, although perhaps showing some improvement in recent years until the current slowdown, cannot be relied on for strong growth potential. To increase visibility, reputation, and ultimately sales potential, wholesale distribution must be increased. Marketing out of state, as well as to the New York City market, are alternatives that should be evaluated carefully by those larger, more established wineries who want to grow their businesses.

Wineryes will have to be selective with which wines they market in these channels; Finger Lakes Riesling would seem to be the best varietal for most wineries to launch into expanded distribution. A window of opportunity is presented by the fact that price resistance to high end, luxury wines in restaurants is now being experienced. Restaurants are looking to offer some new choices on their wine lists, but at somewhat lower prices (but still attractive prices to New York wineries).

The next article, by Trent Preszler, former graduate research assistant in Applied Economics and Management at Cornell University, makes some valuable recommendations about how to take advantage of this opportunity in the New York City market.

Vignaer at Goose Watch Winery, Cayuga Lake.
The finest restaurants in Portland, Oregon, prominently feature Oregon-produced wines. Similarly, most fine restaurants in Seattle carry predominantly Washington wines; and San Francisco restaurants feature California wines. Wines produced in New York, however, have traditionally been shut out of the upscale New York City (NYC) market. In spite of great improvements in quality and consistency, New York wineries have not penetrated the largest, most nationally important, and closest urban market. Can this situation be changed? What would the New York industry need to do to gain acceptance in fine NYC restaurants? I examined these questions in my thesis research project at Cornell University by conducting a survey of upscale NYC restaurants and their wine lists.

**Wine List Presence.** I found that New York wines make up less than five percent of total wine list offerings at upscale NYC restaurants, and over 70 percent of those New York wines come from Long Island. This information could be encouraging, disheartening, or inspiring, depending on one's perspective.

New York wines were priced competitively compared to other domestic wines. When given the chance to rate New York wine on several attributes, NYC restaurateurs rated New York wine as being the strongest in "prices compared to other regions." I found that New York wine prices on restaurant wine lists were lower than all other domestic wines, averaging $44.98 for reds and $37.66 for whites. California exceeded the national average price for reds and whites, likely because CA produces 90 percent of US wine, and has price-setting latitude. California wines prices also reflect their lofty reputation for high-end reds such as Cabernet Sauvignon and Zinfandel. Oregon has established a reputation with Pinot Noir, and Washington has done so with Merlot. Consequently, these two states' red wine prices are significantly higher than New York's. Neither Oregon nor Washington has established a distinctive consumer identity for a particular white wine varietal (like New York has with Riesling), and this is reflected in the fact that their prices for white wines on restaurant wine lists were almost identical to New York's.

**Varietal Prices.** Ranking wine list prices by wine type, the top eight varietals were red (average price range $74 to $141), with Chardonnay the top-white (ranked 9th, average price $71.94), Gewürztraminer ranked 10th ($64.55), Cabernet Franc 18th ($48.19), Riesling 22nd ($44.03) and Seyval blanc 34th ($24.33). Cabernet Franc and Riesling are the two varietals most commonly promoted as the competitive strengths of the New York wine industry. However, New York Gewürztraminer is rapidly gaining positive attention, and, remarkably, it's the second-highest ranking white varietal in price behind Chardonnay.

**Product Perception and Reputation.** The survey asked about the restaurants' perceptions of New York wines. Responses indicated that New York wines ranked highly in terms of perceived value, but suffered in regard to two important qualities: consistency of wine quality and consumer awareness. Respondents agreed that New York wine has made great strides in improving product quality in recent years, but they were adamant that New York wineries need to do a better job of monitoring product consistency before their restaurants will purchase New York wine whenever "given the choice."

The results of my research indicated that there are opportunities, but several management challenges to overcome to gain acceptance in the NYC restaurant market. Specific recommendations to wineries interested in marketing to New York City are:

- Emphasize your ability to make truly world-class Gewürztraminer, Cabernet Franc, and Riesling. These varietals have an established demand and market presence in NYC, and New York wineries are ideally suited to position themselves as "local," better-valued alternatives to Riesling.

Continued on p. 12
MARKETING, continued from p. 11

and Gewürztraminer produced in other regions.

Focus on placing your wine in the best and most popular restaurants because that will positively reflect on your product’s reputation. Educate the staff of those restaurants about your wine so they can sell it with confidence.

Alter quality image, establish customer loyalty, and penetrate consumer niches in particular varietal tastes. Once you have established customer loyalty and brand niche, you will have more latitude in your own strategic price planning and will gain price independence from larger rivals.

Hold an insurmountable commitment to product consistency. Move your winery from a “production orientation” to a “marketing orientation” by focusing on consumer needs and niches. Pay close attention to the quality of supply services your major restaurant clients receive. Masterfully craft opportunities for potential buyers to taste your highest quality and most consistently produced wines in a venue that reflects the desired brand position of your wines. (Every opportunity to highlight New York wines in a prominent or sophisticated context is important because consumer perceptions shift downward more easily than upward.)

The main objectives of these management recommendations are to increase sales of New York wine outside tasting rooms, particularly in NYC, and to increase NYC restaurant awareness of the region’s ability to produce world-class wines from select vinifera varietals that already have an established market demand among NYC consumers. I believe that if the industry first concerns itself with strategic urban marketing approaches that are savvy and effective in penetrating NYC’s elite culinary establishments, then global recognition is sure to follow.

Trent L. Piszczek recently completed a M.S. in Wine Marketing from Cornell University, where he was a student of Dr. Gerald White. He is currently manager and wine program coordinator of The Restaurant at MacKenzie-Childs in Aurora, New York, and managing partner of Cluster Strategies, LLC, a marketing research firm focused exclusively on the New York wine industry.

MARKETING

2002 Juice Grape Outlook

Barry Shafer
Lake Erie Regional Grape Program

The Chinese have a curse, “May you live in interesting times”, and, boy, are things interesting in the Eastern U.S. grape juice market! Industry observers have had a poor handle on the size of the crop due to multiple spring frost events in the East, Michigan, Ohio, Pennsylvania, and the Chautauqua-Erie Grape Belt. All suffered extensive damage. Finger Lakes vineyards had more localized frost damage.

Large processor cash market prices for Concord ranged from $205-290 a ton. This range marked some of the weakness in the market. For instance, Cliffstar’s price dropped from $265 a ton in 2001 to $210 a ton in 2002 for a 21% decline in price. The high end of the price range was set by Mogen David, which certainly helped their growers but because of smaller volume didn’t pull the weighted average up much.

Other signs of weakness in the juice grape market include the possibility of grapes left hanging (without a market) in a year with significant frost injury! A little background information will help explain this. First, Canandaigua Wine Company (CWC) cut back contracts (primarily green Conords) after harvest 2001 by about 15% and has promised to have another round of smaller cuts (7-8%) in November 2002. Cliffstar reworked contracts to their cash market growers that effectively reduced the allowed tonnage for many of them. Growers’ Co-operative Grape Juice Company has been struggling with slow sales and payments to members have been minimal in 2002. In August, Growers’ Co-op announced an allocation of 85% of the member’s last 3-year average tonnage. This action suddenly freed up an estimated 3,000 tons with no readily available home for these grapes.

Are there any bright spots? National Grape members have been receiving pretty good payments for the 2001 crop and are likely to easily beat the 2002 average cash market price. A swath of growers from Ripley to Fredonia had outstanding yields and point out the crop potential that was blunted by the spring frosts. Vineyards should have above average fruiting potential for 2003. Niagara production was better than expected. National Grape reported a 5.4 t/a average for their Lake Erie/Ontario region.

What can juice grape growers expect and budget for 2003? I think marketing your grapes could be critical. The recent cutbacks will likely play more of a role in 2003. I think we have the potential for a big crop from the many vineyards that experienced anemic yields in 2002. The situation with the California grape juice concentrate overproduction will not go away anytime soon. I think we will see increased volume and lower prices for 2003. Some cash market prices will be under $250 a ton, so budget accordingly!

Keith Egner harvests Conords near Pulteney.
Cooperative Research and Demonstration Projects in the Finger Lakes

Timothy E. Martinson
Finger Lakes Grape Program

Once again, I would like to highlight the numerous research and demonstration projects that take place each year in cooperators' vineyards and wineries in the Finger Lakes. We are truly fortunate to have numerous research programs here in the Finger Lakes—both in Geneva and Ithaca—that are involved with the grape industry, and have an interest in addressing production issues both in the vineyard and winery. Researchers are fortunate to have numerous cooperators in the industry that are willing to participate in on-farm research. Thanks to all who participated in these projects. The entire industry benefits from them.

Evaluation of biological control of crown gall. Tom Burr, Plant Pathology. Additional experiments were applied this year to determine the effectiveness of a non-gall forming strain of A. vitis in controlling crown gall. When applied at wounds on grape, the bacterium is able to prevent crown gall formation. Cooperators: Mike Jordan (Portland, second experiment), Rick Dunst (Fredonia), and Jim Bedient (Branchport).

Determining whether European red mites are serious pests of grape in the Northeast. Alan Lalos, Entomology; Alan Lalos and Martin Coffinet, Horticultural Sciences, Geneva. European red mite is considered to be a significant grape pest, and miticides are often applied to prevent injury to foliage. There is little data concerning what levels of European red mites are required to reduce quality or yield. As a result, growers may be applying miticides too often, or not often enough. This year we began a three year project to measure the impact of European red mite on grapes in the northeast. We established European red mite populations in two vineyards and measured reductions in leaf photosynthesis in relation to mite injury. We hope these experiments will allow us to determine economic thresholds for when miticide applications are necessary. Cooperators: Bill Dunn and Steve McCann, Canandaigua Wine Company; Marti Macinski, Standing Stone Vineyard.

Improving yeast available nitrogen levels in must by foliar nitrogen applications. Laifang Cheng and Tim Martinson. The objective is to determine the relationship between the number of foliar N applications and yeast available nitrogen levels in must. A Riesling block with low soil N levels was used. Starting from late July, vines received 0, 1, 3, 5, 7 times of foliar N applications at a rate of 6-lb urea/100 gal. At harvest, berry samples will be taken to measure ammonium and amino nitrogen concentrations. This trial will provide growers with information that may help optimize the number of foliar N applications. Cooperators: Mark Wagner, Lamoreaux Landing Wine Cellars.

Contribution of spring applied nitrogen to the new growth of Riesling vines. Laifang Cheng and Tim Martinson. The objective is to determine the contribution of spring soil-applied nitrogen to new growth and cluster development under our climate conditions. A Riesling block with consistent good yield and quality was selected. Twenty-four mature vines received 28N-enriched ammonium nitrate at a rate of 30 lbs actual N per vine. Leaf and clusters were taken periodically throughout the growing season to determine the nitrogen concentration and the contribution from the N fertilizer. This trial may provide useful information for developing effective nitrogen management programs for vineyards. Cooperators: Ruth Lucas and Jeff Hauk, Lucas Vineyards.

Effect of foliar nitrogen applications and irrigation on atypical aging (ATA) of wines. Laifang Cheng, Horticulture; Thomas Henick-Kling, Food Science; Alan Lalos, Bob Pool, Horticultural Sciences, and Tim Martinson. For the second year, we are testing whether foliar nitrogen applied around veraison or irrigation (or both) will reduce the appearance of atypical aging in white wine varieties. Six treatments have all possible combinations of irrigation (or not) and N fertilization (none, foliar, soil). Wines will be made and evaluated by the Cornell Enology program. Cooperators: Tom Prejean and Jim Zimar, Prejean Winery.

Evaluation of potential new wine grape varieties. B. Reisch, S. Luce, and T.
RESEARCH, continued from p. 13

Henick-Kling. Cornell grape breeding program selections have been planted for trial purposes at numerous Finger Lakes area vineyards. Experience with these new selections and feedback from grower-cooperators have helped determine the relative merits of a group of elite selections across a range of area sites. Cooperators: Lakewood Vineyards, Swedish Hill Vineyards, Hunt Country Vineyards, plus numerous other area growers.

Establishment of tydeid mites in a commercial vineyard for biological control of grape powdery mildew. Greg English-Loeb, David Cadoury, Wayne Wilcox, and Robert Seem. Several years ago, we discovered a species of mite (tydeid mite) that feeds on grape powdery mildew. After several additional years of research, we have shown that these mites can: 1) be established in an experimental vineyard, and 2) protect fruit and foliage from grape powdery mildew at a level equivalent to conventional fungicides. But can these mites be established in commercial vineyards and will they provide measurable benefits to growers? At the start of the 2002 season, we released tydeid mites at low densities in paired plots in two Chardonnay vineyards along Seneca Lake. We asked our cooperators to follow a spray program in one of the paired plots designed to be effective but also conserve mites (the mites are sensitive to some crop protectants). In the other plot, growers followed their standard spray practices. We monitored tydeid mite populations as well as pest arthropods and diseases during the season. Cooperators: Mark Wagner, Lamoreaux Landing Wine Cellars, Matti and Tom Macan, Standing Stone.

Biology and control of grape cane borer. Tim Martinson and Greg English-Loeb. Insecticide recommendations for grape cane borer control are based on our best guesses, and little data on efficacy for timing. We established spray trials at two vineyards with a history of cane borer infestations. Two timings and two materials were tested in early-season foliar sprays. Cane borer injury was evaluated in Winter-Spring 2002-2003. Additional observations on cane borer biology and development were attempted. Cooperators: Steve McCann, Canandaigua Vineyards, and Bob Morse, Morse Vineyards.

Use of pasteurization and ascorbic acid to prevent atypical aging in wines. Thomas Henick-Kling. European results indicate addition of ascorbic acid may prevent development of ATA flavors in white wines. As part of the foliar and irrigation experiment, and with an additional cooperator, white wines were either treated with ascorbic acid or left untreated following vinification, but before aging. In addition, one lot of wines was pasteurized and compared with untreated wines. Wines will be tasted over the next two years to determine results. Cooperators: Dave Peterson, Swedish Hill, and Tom Prejean, Prejean Winery.

Survey of Brettanomyces in Cabernet Franc. Thomas Henick-Kling and Toney Avrik. Barrel samples and bottle samples of Cabernet Franc wines from 30 wineries were collected, and tested to determine whether the Brettanomyces bacterium (a winemaking contaminant) was present. Strains found were chemically fingerprinted to characterize them further. Results should help winemakers determine how important this contaminant is in their winery, and how to control it. Cooperators: 30 NY wineries, many of them in the Finger Lakes.

Trials of yeast and malolactic bacteria strains in NY wines. Thomas Henick-Kling, Several wineries fermented commercial lots with different yeast and malolactic bacteria strains. Resulting wines will be compared and tasted in industry tastings. Results may help winemakers in choosing appropriate types of yeast for specific wines. Cooperators: Several Finger Lakes Wineries.

Removing Asian Lady Beetle Taint from Wines. Thomas Henick-Kling. Several heat treatments and UV light treatments were evaluated for removing or reducing lady beetle taint flavors from wines (juice not from the Finger Lakes). Cooperator: a Finger Lakes winery.

Evaluation of disease control programs. Wayne Wilcox and Duane Riegel. The efficacies of various disease control programs (combinations of materials, rates, and timings) are being evaluated on Chardonnay and Delaware vines. Cooperator: Canandaigua Wine Co.

Sensitivity of the powdery mildew fungus to strobilurin fungicides. Wayne Wilcox. The sensitivity of the powdery mildew fungus to strobilurin fungicides is being evaluated for fungal populations collected from Chardonnay vineyards experiencing poor disease control during the 2002 growing season. Cooperators: Various Finger Lakes growers.

Impact of powdery mildew on juice and wine quality. David M. Cadoury, Robert C. Seem, Wayne F. Wilcox, and Thomas Henick-Kling. The effect of 'diffuse' powdery mildew infections (mid-season infections invisible to the naked eye) on fruit quality, botrytis incidence, and secondary feeding by insects is being evaluated in Pinot Noir and Chardonnay blocks. Fruit from these blocks with and without diffuse powdery mildew infections will also be vinified and evaluated for flavor and wine quality. Cooperator: Mark Wagner, Lamoreaux Landing Wine Cellars, Lodi, NY.

John Wagner harvesting grapes at Bill and Penny Eastman's farm near Lodi.
2002 Meetings & Tours

Timothy E. Martinson
Finger Lakes Grape Program

Thomas Henick-Kling and Lai Liang Cheng explain results from irrigation and foliar N study at Prejean Winery.

April 14: Planning a nutrition program for your vineyard. This half-day workshop at Branchport featured an in-depth look at soil origin in the Finger Lakes, nutrient, soil characteristics and nutrient availability, diagnosing vineyard nutrient status, and developing a fertility program. Participants: Nathan Herendeen, Terry Bates, Tim Martinson, and Lai Liang Cheng.

May 23: Spring Pest Management Update and Barbecue. Our annual Pest Management meeting was again hosted by Lance and MariLee Fullagar. It featured updates from the NYS DEC on worker protection, pesticide storage, and record keeping; updates on disease, insect, and weed management; and updates from industry on product labels and uses. The meeting closed with the traditional barbecue, sponsored by industry and prepared by the Bluff Point Benevolent Barbecue Association. Participants: Ed Handback, (NYS DEC), Greg English-Loeb (Entomology), Tim Weigle (Lake Erie Regional Grape Program), Andrew Landers (Sprayer Technology, Geneva), Juliet Carrol (NYIPM program), Regina Reichenberg (Valent), John Sulkeley (Syngenta), Chris Becker (BASF), Dave Piekartzka (Gowan), and others.

June 13: Frost Injury and Ponnax Twilight Meeting. This twilight meeting reviewed the extent of frost injury in area vineyards and the potential uses, timing, rates of Ponax to increase fruit set. The meeting was hosted by June and Jeff Pendleton. Participants: Bob Pool (Horticulture, Geneva), Chris Becker (BASF), and Tim Martinson.

July 23: Crop Estimation Workshop Twilight Meeting. Cameron and Maria Hosmer of Hosmer Winery, Ovid, hosted this session, where we discussed use of cluster counts and mid-season cluster weights to obtain accurate crop estimates. Attendees then did hands-on crop estimation in the Riesling block near the winery. Participants: Tim Martinson, Bob Pool, and Cameron Hosmer.

July 31: Irrigation and foliar Nitrogen applications for reducing crop stress and possibly preventing Atypical Aging, and Compost Characteristics. This twilight meeting featured a presentation by Jean Bonhotal of the Cornell Compost Project on compost characteristics, and an update by several faculty members on results from the ongoing experiment on foliar fertilization and irrigation to reduce atypical aging. The meeting was hosted by Tom and Libby Prejean and Jim Zimar. Participants: Jean Bonhotal, Lai Liang Cheng, Alan Lakso, Thomas Henick-Kling, Dr. Wolf Sponholz (Geisenheim Research Institute, Germany), Bob Pool, and Tim Martinson.

Continued on pg. 17
Grape Variety Release Agreement
Modified with Industry Input

Bruce Reisch
Dept Horticultural Sciences, NYSAES

Richard Cahoon, Vice President
Cornell Research Foundation

At the Finger Lakes Grape Growers Convention this past March, Richard Cahoon of the Cornell Research Foundation presented an outline of plans for the release of GR7 and future Cornell grape varieties. In the months following his presentation, there was a great deal of discussion about the plan presented. For those who have not been a part of these discussions, it's time to bring you up to date with some information on the essential features of the revised release agreement. There were several meetings this past spring bringing together growers and grower organizations (NYS Wine Grape Growers; Bruce Reisch who leads the grape breeding program; Thomas Henick-Kling of the Cornell enology program; Tim Martinson; Experiment Station administration; and Richard Cahoon of the Cornell Research Foundation. Recall that at the Finger Lakes Grape Growers Convention, a royalty system based on tonnage was proposed by the Foundation. Under this proposal, growers would have been responsible for a 3% royalty on the value of tonnage produced, with the term of the agreement being 20 years. This proposal has been changed after industry input.

In the revised agreement, there is no tonnage royalty, only a per vine royalty (as is the case with patented varieties), which is payable at planting or in installments during years 4, 5, and 6. The proposed royalty is $0.75 per vine within NY and $0.95 per vine outside of New York. The revised agreement will be effective for vines sold to be planted spring 2003.

Although this license format is similar to the per vine royalty license for Cornell varieties released in the past, the new license is based on Cornell's ownership of the plants through biological property rights rather than plant patents. In both cases the effect is the same — Cornell retains ownership of the plants but only for the purposes of controlling propagation of the variety. This is made explicit in the new license agreement.

One of the significant benefits of this approach is the potential to return more of the royalty income to support the wine grape breeding program at Cornell.

Plans are still being made to formally name and release GR7 this winter. Your suggestions for a suitable name would be most welcome. Please send to Bruce Reisch (brl1@cornell.edu or Dept. of Horticultural Sciences, NYS Agric. Expt. Station, Geneva, NY 14456).

Figure 7: Severe powdery mildew appeared on Chardonnay clusters, despite conscientious disease management programs.

on clusters. Symptoms appeared in early-to mid-July, and the usual timing and coverage problems that generally explain control failures didn't seem to apply. Leaves were typically clean. Moreover, other varietal varieties under the same fungicide programs didn't show the same problems. What we know is that infections occurred sometime around bloom.

Continued on pg.17
USDA Hires a New Grape Breeder at Geneva

Peter Seem
Communications Services, NYSAES

Chris Owens is central New York’s newest molecular biologist and grape breeder. He was hired last January by the Plant Genetics Resources Unit (PGRU), a USDA-ARS facility at the New York State Agricultural Experiment Station in Geneva, NY. Owens also holds an appointment with Cornell University as an adjunct assistant professor of horticultural science.

“My long term goal is to improve red wine cultivars for the eastern United States by applying newer technologies, particularly in genomics and molecular biology,” said Owens.

He hopes to develop cultivars that are disease resistant, with improved tolerance to freezing, yet retain the wine quality of traditional cultivars such as Syrah and Pinot Noir. His program will aid the development of new grape cultivars by developing fundamental knowledge of the grapevine genome structure and function, and by describing the molecular genetics of important traits. Owens hopes the development of new tools and a greater knowledge of grapevine genetics will decrease the amount of time it takes to develop new cultivars and increase the chances of producing high-quality red wine cultivars for the Northeast—a task that, historically, has proven to be extremely challenging.

“Chris is a welcomed addition to PGRU,” said Larry Roberson, the PGRU’s acting research leader. “He brings skills that increase our unit’s expertise in molecular characterization and crop improvement.”

The PGRU is a component of the USDA-ARS National Plant Germplasm System. The unit in Geneva has national responsibility for certain vegetable crops, as well as apple, cold-hardy grape, and tart cherry. The PGRU is mandated to acquire, maintain, characterize, evaluate, document, and distribute these genetic resources of crops.

Owens has long been interested in fruit breeding and genetics. “I find it to be a very interesting and rewarding area of plant science,” he said. While studying for his master’s degree in pomology at Cornell, he became interested in grapes as a crop when he took some viticulture and wine courses.

Among his reasons for taking a job at the Experiment Station, Owens cited the available lab and field resources and the Station’s history and reputation for excellence in plant breeding. The realities of working at the Station have not disappointed him. “My first few months have been very smooth and productive,” he said. “The Station is a very comfortable place to work, and the facilities are outstanding.” Owens said he also appreciates being in an environment where there is potential for collaboration and interaction with a variety of scientists from the Experiment Station, as well as the academic freedom to pursue his own research.

Born and raised in the Washington D.C. area, Owens earned his B.S. in horticulture from the University of Maryland in 1995, his M.S. in pomology from Cornell University in 1997, and his Ph.D. in plant breeding and genetics from Michigan State University in 2001.

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REVIEWS, continued from pg. 16

Beyond that, it’s not clear why this happened. While it might be convenient to suspect fungicide resistance, it seems unlikely, given the problem’s appearance in many vineyards and other regions (e.g., Long Island). The best explanation, to date, is that Chardonnay is extremely susceptible to powdery mildew; we had ideal weather conditions (wet spring, warm temperatures); and inoculum was abundant.

This episode served as a reminder of how fine a line there is between success and failure in disease management.

Harvest. Aurore started harvest on August 16, and Concord is wrapping up this week (October 10). Late V. vinifera and some hybrids remain to be harvested over the next few weeks. Overall, the crop appears close to normal yields, despite frost and drought.

Natives. Labrusca type grapes suffered a disproportionate share of the frost injury, because they are the most common varieties north of Keuka Lake and in higher elevation sites near Hector. Severely affected blocks had 1-2 T/acre, while yields were about 15% below average in areas with more moderate injury. Many other growers, however, were pleasantly surprised at their tonnage. Niagara, in particular, were heavy in many places—in part due to the timely rainfall the week before harvest. It may have added as much as a ton per acre to yields. Despite the warm weather, Brix levels were not extremely high—it’s likely that the drought delayed ripening in some cases.

Hybrids. Aurore, harvested before it rained, apparently filled up a lot of bins, but didn’t weigh much. Many vineyards that had suffered bud injury last year yielded more heavily this year. Cayuga whites yielded heavily. V. vinifera x vinifera crop should be average in size, with yields running in the 3-6 T range. Pinot noir again was very clean, but I expect some botrytis in later varieties, due to the cooler and wetter conditions over the past week. Quality should be good.

Wine quality. Again, the warm, dry season should result in very good wine quality—particularly in blocks that had an adequate water supply (only moderate stress). Flavor development so far has lagged a bit behind accumulation of brix, and acids are relatively high...

Continued on pg. 18

NEWSLETTER NO. 11

17
spite the warm weather. These trends are magnified in severely-stressed vineyards. However, the timely rainfall in mid-September proved to be a godsend to growers. Following a drought-induced lull, vineyards resumed ripening with improved leaf function restored by the rainfall.

Outlook for 2003. With favorable conditions at bloom for bud fruitfulness, I think we have good potential for next year. However, lost photosynthesis from drought stress may result in lower levels of wine reserves, leading to reduced growth and potential bud injury. A lot depends upon how long leaves remain functional this fall before the killing frost.

MEETINGS & TOURS, continued from pg. 15

August 3rd Annual Pinot Noir Conference. This meeting, at Amor Forest, near Ithaca, was devoted to critical tasting of Pinot Noir wines from participants, along with “benchmark” wines from Oregon, California, and Burgundy. It was hosted by the NY Pinot Noir Alliance. Participants: 24 winery owners and winemakers from NY, Ontario, Maryland, Massachusetts, and Pennsylvania.

August 13: Multi-row Sprayer tour to Niagara Peninsula. Andrew Landers organized a day-long visit to Canada to see four different types of multi-row (2-4 row sprayers) at work on four vineyards. We met the owners of these high output sprayers, discussed output/day, spraying regimes, kicked the tires, talked to the operators and saw how well they have performed this season. Participants: Andrew Landers, Kevin Ker (private consultant and Brock University associate) and Wendy McFadden (plant pathologist and private consultant).

August 19: Geneva Grape Breeding Program Tour and Industry Tasting. Bruce Reisch and Thomas Henick-Kling provided a tour of the Geneva Grape Breeding Program vineyards and industry tasting of wines made from varieties soon to be released by the program and advanced selections. Participants: Bruce Reisch and Steve Luce (Dept of Horticultural Sciences), Thomas Henick-Kling and Hans Justrich (Enology Program).

Cornell Enology Lab Hires First Extension Enologist

Peter Seem
Communications Services, NYSAES

Hans Justrich brought his family nearly 4,000 miles from their home in Malans, Switzerland, to Geneva, NY, to become Cornell University's first extension enologist. In his words: “I needed a challenge.” For the second-generation wine maker, who began working in Thomas Henick-Kling’s lab at the New York State Agricultural Experiment Station in Geneva, NY, on July 25, that challenge is embodied in a new country, new people, new grape varieties, and a new climate.

“We’re lucky to find someone with his expertise and experience,” said enologist Henick-Kling, who directs the Cornell Enology Research and Extension program where Justrich will be working. “Hans has a wonderful background in wine making, experience with small and large wineries, and familiarity with the varieties of grapes that are economically important to New York.”

Justrich’s enthusiasm for his work is readily apparent. “Wine making is great—it’s an art and a way of life,” he said. “Every year is a new challenge and a new experience.”

This attitude, according to Ben Gavitt, a research support specialist in Henick-Kling’s lab who manages the New York State Wine Analytical Lab, makes Justrich well suited to the position. “He has the perfect personality for this job,” said Gavitt, who will be working closely with Justrich to test samples brought in from New York wineries. Justrich’s role is to bring more of the benefits of the world-class research that goes on at the Experiment Station to the New York wine industry. Dedicated to extension, he will be able to visit some of the many wineries in New York.

Justrich said he looks forward to working with New York’s wine makers and vintners. “It’s a beautiful facility with good equipment and nice people. I met some of the winemakers and they were very interested and open minded,” he added. “We don’t grow Cabernet in Malans, so I’m looking forward to working with that variety in New York.”

Before coming to Cornell, Justrich consulted with grape growers and wine makers in Graubunden for 18 years, disseminating information and organizing wine tastings and workshops. Previous to that, he worked for a research station in plant pathology in Zurich, Switzerland, and at a winery in California. He earned his advanced degree from the Swiss Federal Institute of Technology-Zurich in 1979.
We are pleased to announce Viticulture 2003, the premier educational program and trade show specifically designed for grape growers in Eastern North America. Whether you grow Concord or Niagara along Lake Erie or Merlot for a North fork winery, you are sure to find this convention jam-packed with useful information about growing grapes more profitably, improving quality, managing your business better, and learning about short and long-term market trends that affect your business. An unprecedented number of vendors of equipment, supplies, and services specifically targeted for grape and wine production will pack the Buffalo Convention Center.

• A massive trade show, with ample time set aside in the program for exclusively visiting with vendors and a chance to win a John Deere Gator!
• Two days of in-depth sessions on vineyard management, with breakout sessions on pest management, soild management, vineyard establishment, sprayer technology, and more.
• A special focus on grape market trends, developing leadership, and governmental policy issues affecting the grape and wine industry in NY.
• Programs aimed at youths and career development.
• A day-long New Growers Workshop for those considering entering the industry in the next few years.
• The Wine Marketing and Business Management Workshop, of special interest to anyone marketing wine in the Northeast.
• Spouses’ program.
• The NY Wine & Grape Foundation Unity Banquet and Awards session.

Look for more information in upcoming issues of Finger Lakes Vineyard Notes and at www.viticulture2003.org

Cornell Enology and Grape Breeding Programs Receive National Awards

AHEV Award to Enology Program. The American Society for Enology and Viticulture (ASEV) recognizes the outstanding research published annually in their journal—selecting two of the best papers submitted within the fields of winemaking and grape growing. Dr. Thomas Henick-Kling and Dr. Christoph Egli of Cornell University won the “2001 Best Paper Award in Enology” for their “Identification of Brettanomyces/Dekkera Species Based on Polymorphism in the rRNA Internal Transcribed Spacer Region.”

Henick-Kling was also awarded an honorary membership in the International Association for Enology. Management and Wine Marketing for his work in the Association promoting education and international collaboration. Their goal is to present to the wine industry the newest scientific findings in enology. He received the award at the Association’s 13th triennial International Enology Symposium, held this June in Montpellier, France.

ASHS Award to Bruce Reisch program. The American Society for Horticultural Sciences selected “Marker-assisted Selection for Powdery Mildew Resistance in Grapes,” for the Society’s “Outstanding Fruit Publication” for the year. The research was conducted by Marco Dalbo with Guang-Ning Ye, Norman Weeden, Wayne Wilcox and Bruce Reisch. The paper was the result of Dalbo’s graduate research. Reisch and Wilcox are professors in horticultural sciences and plant pathology, respectively. Weeden is a former professor in horticultural sciences. Dalbo was a graduate student under Reisch, and now works at the experiment station in Videira, SC, Brazil. Ye was a postdoctoral research fellow in Reisch’s lab and now works for Monsanto in St. Louis.

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