

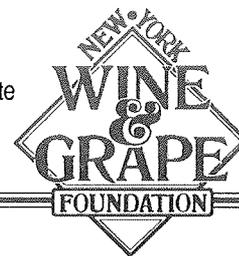
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GRAPE RESEARCH NEWS



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The New York Wine Laboratory and Wine Data Bank

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The New York Wine Analytical Laboratory and Data Bank were implemented to create a structure for technical assistance and quality assurance for New York State wineries. The Wine Analytical Laboratory goals are to provide:

- 1) New York State wineries affordable technical service for juice and wine analysis for quality assurance and problem solving.
- 2) A data bank for New York juice and wine, to serve as an information basis for New York wineries and extension and research programs.

Laboratory equipment has been purchased with support from the New York State Wine and Grape Foundation and the Department of Food Science & Technology, New York State Agricultural Experiment Station. The New York State Wine and Grape Foundation provides matching funds for analyses of New York State wines and juices. New York State wineries expressed the need for these services, which remains the number one priority of the wine industry for stability and growth.

Data on the composition of grapes and wine in New York State are collected in a computerized data bank which is available to New York wineries and researchers. The data base provides better characterization of New York wines, greater uniformity of wine quality, and a means for diagnosing faulty wines. Table 1 is an example of the use of the wine data bank. The variety and different parameters are keyed into the top box. We then key in a search. In 1989, eleven samples were found by searching for Riesling, in the Finger Lakes region. The central section of Table 1 lists the wine data and gives the averages, standard deviation, and minimum and maximum values for each listed trait. At the bottom, the juice composition is surrounded by a solid box.

This database is beginning to give enough information so that trends may be observed. Hopefully, enough information can be obtained to characterize all the major grape varieties for the different viticultural areas of our state. With this knowledge we have the potential to see many things. As the data base grows each year, we will learn more about grape growing regions and the making of quality wines in New York State. Table 2 is an example of data obtained from the wine data bank for the varieties Chardonnay, Riesling and Seyval. As you know,

each year is different. This is evident when looking at the table. We can see trends, and differences from year to year. For example, after reviewing the data for Chardonnay in 1988-1990, we learned that we may have to adjust the acidity either before or after fermentation. Acid adjustment is made more often in a hot dry year. Knowing this information in advance we can better prepare for vintage depending on specific weather conditions in that year. We see a similar scenario with Seyval. Again, dependent on specific weather conditions, we see things we normally do not expect in Seyval. Note, these are not experimental samples but commercial New York State wines.

The additional information of submitted wine samples has been difficult to obtain. This background data is important to us. It gives the viticultural information used to characterize a grape growing region. To facilitate the acquisition of this data, the standard form for submitting juice or wine samples to the wine lab has been shortened and now includes the supplemental information sheet (Table 3). Now the viticultural and juice data are immediately accessible when the wine or juice sample is received for

Table 1. Example of information for Riesling from the wine data bank, New York State Agricultural Experiment Station, Geneva.

Wine Statistics

Variety: Riesling	Region: Finger Lakes
Vineyard Location:	Township:
Type:	Year: 1989
	Color: White

Number of Samples: 11

	<u>Average</u>	<u>Standard Dev.</u>	<u>Minimum</u>	<u>Maximum</u>
pH:	3.15	0.20	2.90	3.70
Titratable Acidity:	0.87	0.10	0.67	0.98
Brix:				
Residual Sugars:				
Alcohol:	10.77	1.83	9.10	15.00
Tartrate:	3.10	0.48	2.30	3.80
Malate:	3.23	1.03	1.60	5.30
Lactate:	1.03	0.55	0.30	2.10
Acetate:	0.36	0.43	0.01	1.20
Sorbate:	233.50	14.50	219.00	248.00
Free SO ₂ :	29.17	9.04	15.00	43.00
Total SO ₂ :	112.76	29.64	72.00	175.00
Potassium:	612.19	317.06	382.00	1376.00
Sodium:				
Iron:				
Copper:				

Juice pH:	3.13	0.16	2.90	3.45
Juice Brix:	20.08	3.78	18.0	28.5
Juice TA:	0.89	0.07	0.77	1.0
Yield:	3.19	1.20	0.5	4.0

analyses. This information is then logged in the data bank when the laboratory analysis is completed.

To help build a data base with information on important wine grape varieties, the laboratory sent out two wine and two juice kits for free analysis for the 1991 vintage. With these samples we can get a much better idea of the juice and wine data for not only the different grape varieties and different styles of a variety, but also the different viticultural areas in New York State (Lake Erie, Finger Lakes, Hudson Valley, and Long Island). Winemakers receive analytical and sensory data that can better assist them in making winemaking decisions based on that specific juice and/or wine. This work is in part being supported by a special grant from the New York Wine and Grape Foundation.

Another function of the Wine Laboratory is to give recommendations based on the data analyses. This has been very beneficial to some winemakers. Wine making is not only an art, but also a science. When you have certain data at your fingertips, decisions can be made to better predict the future of your wine. If "spoilage" has begun, we have an opportunity to halt the process, rather than trying to save the wine once the damage is done. The correct acidity, SO₂ concentration, sugar, alcohol, bottling conditions, and microbial load all play an important part in the longevity of a wine.

Examples of "success stories" dealing with different enological problems.

A Finger Lakes vintner had a Gewurztraminer which he was going to blend at a financial loss into a low-cost generic wine. Instead, he was able to improve it with the analysis and advice from the laboratory and sell it confidently for \$9.00 per bottle.

A large winery had an unusual problem with iron haze. Our assistance in identifying the cause of the haze and in tracking the contaminating iron source solved the haze problem that existed in 5,000 cases of wine.

A New York State winery had two large tanks of Cayuga White wine. Upon examination, the tanks were found to have reduced-sulfur off-odors. The vintner had been told it should be dumped. A copper bench test and copper analysis were completed at the laboratory. Copper was added to the wine in the amounts recommended by the laboratory and the off-odor was removed. The wine was tested again for its residual copper content and was able to be sold as good quality varietal for several thousand dollars.

Another New York State winery had a wonderful Pinot noir that they were having trouble filtering. A sample was sent to the laboratory. After filtering a small amount, we noticed a strong ethyl acetate off-odor. Upon microscopic examination of the filter, spoilage yeast species were found that can produce the glue-like ethyl acetate aroma very rapidly. SO₂ analyses was done. Ultimately, the SO₂ content was adjusted, the wine filtered to remove the spoilage yeast, and New York State has another lovely Pinot Noir available.

We hope we can assist you. Call us if you have any questions.

Thomas Henick-Kling 315-787-2277
 Ben Gavitt 315-787-2263
 Fax 315-787-2397 ■

The New York Wine Laboratory and Wine Data Bank (continued)

Table 2. Example of yearly differences in unfinished wines (tank samples) of Chardonnay, Riesling and Seyval, from data withdrawn from the wine data bank.

Chardonnay

Year:	1988		1989		1990	
Samples Taken:	12		9		11	
	<u>Avg.</u>	<u>Range</u>	<u>Avg.</u>	<u>Range</u>	<u>Avg.</u>	<u>Range</u>
pH:	3.48	3.30-3.70	3.41	3.00-3.90	3.34	2.92-3.70
TA:	0.65	0.53-0.72	0.81	0.56-1.15	0.62	0.58-0.74
Tartrate (g/L):	2.16	1.70-2.90	2.87	1.30-4.70	1.60	1.04-3.40
Malate (g/L):	2.10	0.66-4.90	3.62	1.50-4.40	0.40	0.30-2.70
Lactate (g/L):	2.73	0.20-7.80	1.63	0.15-4.70	1.83	0.80-3.30
Acetate (g/L):	0.42	0.02-0.93	0.40	0.02-0.79	0.23	0.10-0.40

Note the high pH and low TA possible in Chardonnay, especially in a hot, dry year such as 1988 and 1991.

Riesling

Year:	1988		1989		1990	
Samples Taken:	5		4		2	
	<u>Avg.</u>	<u>Range</u>	<u>Avg.</u>	<u>Range</u>	<u>Avg.</u>	<u>Range</u>
pH:	3.18	3.10-3.20	3.33	3.20-3.70	3.10	3.10
TA:	0.79	0.70-0.88	0.91	0.86-0.94		
Tartrate (g/L):	3.22	2.30-3.80	3.08	2.30-3.50		
Malate (g/L):	3.60	2.40-4.70	3.53	2.80-5.30		
Lactate (g/L):	0.44	0.03-0.80	0.92	0.43-1.30		
Acetate (g/L):	0.39	0.20-0.61	0.01	0.01-0.02		

Riesling does not generally lack acidity, yet it might in the 1991 vintage. Remember that a high acid content (>0.75 g/100 mL) is needed for the structure of a good Riesling.

Seyval

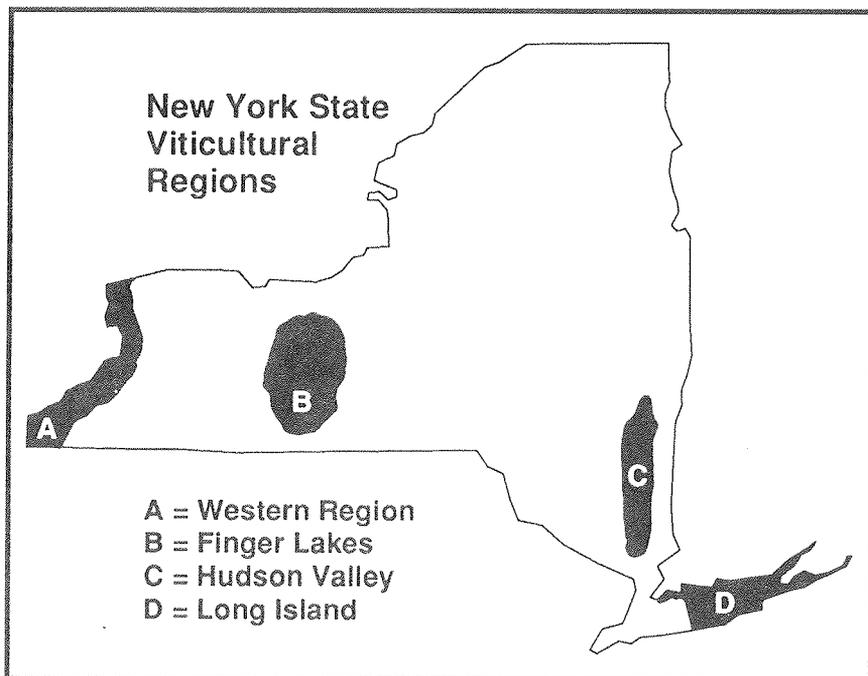
Year:	1988		1989		1990	
Samples Taken:	5		10		1	
	<u>Avg.</u>	<u>Range</u>	<u>Avg.</u>	<u>Range</u>	<u>Avg.</u>	<u>Range</u>
pH:	3.30	3.10-3.50	3.18	3.00-3.40	3.04	
TA:	0.77	0.61-0.86	0.86	0.74-0.97	1.04	
Tartrate (g/L):	1.86	0.80-3.40	2.31	1.70-3.20	2.67	
Malate (g/L):	2.60	0.10-3.90	3.63	2.50-6.90	3.87	
Lactate (g/L):	2.38	0.10-6.80	0.93	0.36-1.90	0.63	
Acetate (g/L):	0.10	0.01-0.30	0.15	0.01-0.36	0.20	

Seyval does not often lack acidity, but it may in a hot year (see 1988).

Each of New York's four major viticultural regions (See accompanying map) share some of the same viticultural problems. There is, however, a unique set of soils, climate, varieties and markets in each region that cause unique difficulties and provide unique opportunities. I have asked the five Cornell field staff who work with grapes in the four regions to provide an overview of their region's situation, viticultural problems, and areas that are, or should be, addressed through research. Research on grapevines, grapes and grape products is not

just academic, but it addresses the needs in each of New York's regions. Each of the extension programs in these regions utilize research expertise from Geneva and Ithaca campuses of Cornell University. Faculty from these campuses do cooperative work with the regional staff to apply research to regional needs of the grape industry.

Our major research article this quarter concerns the New York State Wine Analytical Lab and The Wine Data Bank, housed in the Department of Food Science and Technology, at the Experiment Station in Geneva, NY. Backed by dollars from the New York Wine and Grape Foundation, the lab and data bank facilities were started up a couple of years ago to analyze juice/wine and to amass information to serve the industry. By drawing on the data collected over the years, researchers will be able to anticipate and analyze problems in juice and wine quality so that remedies can be offered. Ben Gavitt discusses these issues in his article, explains the operation of the wine data bank, and provides examples of how it can be used to benefit our industry. ■



**Regional Updates of New York's Four Viticultural Regions:
 Long Island, the Hudson Valley, Finger Lakes, and Lake Erie**

Long Island

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The first commercial winegrape vineyard on Long Island was planted in 1973. Today, the Long Island wine industry consists of 15 estate wineries and 35 vineyards (approximately 1,600 acres). There are two wine appellations, the North Fork of Long Island and The Hamptons (or the South Fork). The primary

vinifera varieties grown are Chardonnay, Merlot and Cabernet Sauvignon, with smaller plantings of Riesling, Gewurztraminer, Cabernet Franc, Sauvignon blanc, Pinot noir and a few others. In the last three years, new plantings have been exclusively in the Bordeaux red varieties, Merlot, Cabernet Sauvignon, and Cabernet franc.

The climate and soils of Long Island are features that readily distinguish the region from other fine wine-producing regions. The climate of the East End is strongly influenced by the three surrounding bodies of water, the Atlantic Ocean, Peconic Bay, and Long Island Sound. This maritime effect moderates extreme temperatures in both summer and winter. Budbreak consistently occurs in late April or early May, well after the threat of hard frost. And despite the reputation of vinifera as being sensitive to winter injury, damage typically occurs only on the poorest of sites. The parent material of Long Island soils is granite which was ground into gravel, sand and silt-sized particles by glaciers 11,000 years ago. These soils are ideal for growing grapes, being deep, well drained, friable sandy loams, relatively flat to gently sloping.

The 1991 growing season will be remembered as one of the better years for fruit quality. Beginning in April, the entire 1991 season was significantly warmer than the 20 year average, from 1969 to 1988. April and May received average rainfall (three-four inches each), but June and July were extremely dry. This led to early budbreak, early bloom, and early veraison. In August, nine inches of much-needed rain fell, in part due to Hurricane "Bob", which occurred on August 19. Yields were above average (average usually being threetons/acre), and fruit quality was good. Because of the dry weather in early summer, there was virtually no Botrytis this past season, even on susceptible varieties.

The Long Island grape research program addresses the specific needs of the local industry. The program also serves as a conduit between the Long Island growers and Cornell University, particularly the staff at the New York State Agricul-

tural Experiment Station at Geneva. Many of the research projects are conducted in cooperation with Experiment Station faculty.

Viticultural and enological interests of the Long Island industry often parallel those in other areas of the state. Projects undertaken in 1991 included incidence and severity of bunch-stem necrosis, European red mite scouting and management, the occurrence and severity of Rovral-resistant *Botrytis cinerea*, and the evaluation of hybrid wine and table selections. These projects will continue in 1992, along with work on weed control, vineyard floor management, nutrition, and evaluation of winegrape clones. The results will address the specific concerns of Long Island growers, as well as grape growers in Upstate New York, and in regions with similar varieties and terroir.

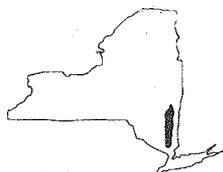
Hudson Valley Region

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Route 66, RR 1, Box 90, Hudson, NY 12534



Grape production has undergone dramatic changes in the last 20 years in the Hudson Valley. Although there are many available and well suited sites for grape production, the economics of establishment and production of a vineyard are perhaps the poorest of any previous time in this area's history. Abandoned vineyards are common sights in the fruit growing districts of the Hudson Valley region. The industry is by no means dead, but it is going through a very severe correction. Vineyards that were displaced by the lack of processing outlets are slowly being replaced by vineyards intended to supply local wineries and fresh market needs. A noted shift to vinifera and hybrid production from almost exclusively Concord production is underway. The rate of this change, however, is very slow.

Grape production in the Hudson Valley is restrained by several major factors. First, the cost of production is at a competitive disadvantage because of high land prices and carrying costs. It is extremely difficult to find suitable sites for production that can be purchased at agricultural land prices. Second, minimum winter temperatures create significant restrictions to the production of varieties other than Concord, even on the best sites and given our recent mild winters. Potential

winter injury losses make non-Concord vineyard speculative ventures. Third, insect, disease and wildlife population pressures necessitate costly control measures which further reduce the profitability of vineyards. In spite of these negative attributes, some growers are willing to accept these risks for the profit potential for locally produced wine and the largely untapped potential for seedless table grape production.

Research needs in the Hudson Valley that will need continued support will be the identification of hardy varieties and rootstocks for this region. As the Hudson Valley becomes even more tourist oriented, the potential for new vineyard and winery growth will increase, as will the market for table grapes. Research in these areas will benefit these ventures.

Finger Lakes

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Area Extension Specialist

Finger Lakes Grape Program

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vinifera varieties with few going less than four tons per acre. In spite of the summer drought and the large crop, vine growth was quite good in most vineyards, and periderm formation this fall was exceptionally good.

Not surprisingly, the large crop resulted in somewhat lower prices in 1991 than in 1990. This was evident in nearly all varieties, whether for juice, bulk wine or premium wine. In spite of this, most growers likely showed greater profits in 1991 than in 1990. Few if any grapes of any type were left on the vine, although a significant tonnage was sold as uncontracted at reduced prices. Growers generally underestimated crop size, which led to some marketing problems once they started picking and realized how big the crop was. A number of growers have successfully pursued out of state markets, which has helped avoid a serious local oversupply.

Extension programs in 1992 will continue to offer opportunities for pesticide applicator recertification. In addition, budgets for growing Native American, hybrid and vinifera varieties will be developed in cooperation with Gerry White, Department of Agricultural Economics at Cornell University. This project will also examine the impact of using grafted versus own rooted vines, and pruning by hand versus mechanically. Research will be continuing on organic grape production in cooperation with a number of faculty at both Geneva and Ithaca.

The Finger Lakes is probably the most diverse of the grape growing regions in New York. With approximately 12,000 acres concentrated primarily in five counties, significant quantities of Native American, hybrid and vinifera varieties are produced for juice, wine and fresh use. Grapes are sold to local processors and shippers within the region, as well as to markets in the other three grape regions in New York and out of state.

Acreage seems to be stabilizing in the Finger Lakes. Modest plantings of Concord and Niagara for juice and several vinifera varieties (primarily Merlot, Cabernet franc, Cabernet Sauvignon and Chardonnay) have been offset by removal of traditional Native American (especially Delaware and Dutchess) and less desirable Hybrid wine varieties (primarily Aurore). Newer vinifera plantings have been primarily on sites on Seneca and Cayuga Lakes, which generally have more favorable winter minimum temperatures and a somewhat longer growing season than most sites further west in the Finger Lakes. Proper site selection is and will continue to be critical to the economic success of new plantings of juice and wine grapes.

The 1991 Finger Lakes grape harvest will be memorable for many reasons. An unusual combination of high yields and superb quality has both growers and vintners claiming that it may be the best vintage in decades. A nearly ideal season for vine growth in 1990 and a somewhat light crop load in most vineyards resulted in high cluster counts in 1991. The early warm spring and continued warm and dry summer ripened the grapes early with little disease pressure at any point in the season. Insect pressure seemed to be somewhat greater than in recent years. Most varieties were harvested two-three weeks earlier than normal with the highest sugars and lowest acids that many processors had ever seen. In some cases, acids were actually lower than optimum, especially in juice varieties. With few exceptions, high pH was not a problem even when the acids were low. Winemakers were generally able to get any sugar level they desired, with most hybrid and vinifera varieties reaching 21-23 degrees Brix even with large crop loads. Yields were exceptional in most vineyards with 10 plus tons per acre not being unusual in juice and bulk wine varieties. There were even a few reports of more than 15 tons per acre. Yields of five-seven tons per acre were common in

Western New York

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this part of the state has been focused on improving production efficiency by increasing yields and reducing labor inputs. Dr. Robert Pool's (Horticultural Sciences, NYSAES, Geneva) minimal pruning and narrow row spacing work has shown promise in allowing growers

The western New York commercial grape industry is comprised of over 20,000 acres of vineyards, of which 85% is planted in Concord, 5% Niagara, and 10% hybrid, vinifera, and other American cultivars. Viticultural research efforts in

to totally mechanize operations while increasing productivity. Ongoing research by the Entomology Department and Plant Pathology Department centers around pesticide reduction strategies which enable growers to reduce chemical inputs and increase overall profitability.

The 1991 growing season produced record crops across the vineyards of western New York. High vine reserves from the 1990 season, coupled with an exceptionally warm, dry and early 1991 season, created the unique conditions needed for full fruit maturity. A large crop is difficult to ripen in most years, but in 1991, a May 31 bloom date (17 days earlier than average) provided an extended growing season that resulted in high soluble solids. Yields for Concord and Niagara vineyards averaged 6.5 tons/acre, two tons higher than long-term averages. Wine grape growers in this region report high yields of vinifera and hybrid varieties with outstanding fruit quality.

While warm and dry conditions curtailed serious crop losses from disease pressure, Grape Berry Moth and Eastern Grape Leafhopper populations were

higher than normal. The dry weather that continued through November facilitated harvest operations, but tank space limitations slowed deliveries because processors were forced to concentrate juice as grapes were received. Some high cropping vineyards with restricted rooting zones or soils with low water holding capacity had difficulty with cane maturation and may suffer yield reductions in 1992, but many vineyards appear to have the potential for excellent yields again next season.

Western New York and Finger Lakes Grape

IPM Programs

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Grape IPM Specialist

Vineyard Laboratory

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The Grape IPM program was established in the fall of 1989 to provide grape growers in western New York and the Finger Lakes region with current pest management information. Grower training has been the main focus of the Grape IPM program. Growers are being trained to use the current pest management practices available to develop an overall vineyard pest management strategy. Through the implementation of a vineyard pest management strategy, growers can use the IPM practices available to them to reduce pesticide use while maintaining, or increasing profitability.

Disease management receives the primary consideration in the Finger Lakes region, while in western New York both disease and insect management are considered important. This is due to western New York vineyards being planted primarily to Concord, which is relatively disease tolerant, while vinifera and hybrid plantings dominate in the Finger Lakes region. Vinifera and hybrid growers must manage a complex of diseases which include: black rot, powdery mildew, downy mildew, Phomopsis Cane and Leaf Spot, botrytis bunch rot, angular leaf scorch, and crown gall. Concord growers deal primarily with four diseases: black rot, powdery mildew, Phomopsis Cane and Leaf Spot and downy mildew.

Insect pests were the primary concern during the 1991 growing season in both regions. An early, warm, and dry growing season provided conditions for significant population increases by grape berry moth (the primary insect pest in grapes),

and Eastern grape leafhopper. While the weather patterns of the 1991 growing season reduced pressure from diseases, an increase in the amount of time used for scouting and managing insect pests was seen in both regions. A Grape IPM implementation project involving alternative management strategies for grape berry moth was undertaken during the 1991 growing season. Growers from both regions applied Isomate-GBM (a grape berry moth pheromone product) in vineyards and compared the results to other vineyards where conventional insect management programs were used. Due to the warm, dry weather of the 1991 growing season, damage from grape berry moth exceeded damage thresholds in many of the Isomate-GBM and conventionally managed vineyards. The second year of the Isomate-GBM implementation project will be conducted during the 1992 growing season. ■

ANNOUNCEMENTS AND UPCOMING EVENTS

Proceedings of the First Nelson J. Shaulis Viticulture Symposium Now Available

On March 5 & 6, 1991, the First Nelson J. Shaulis Viticulture Symposium was held at Jordan Hall, New York State Agricultural Experiment Station, Geneva. The topic of the symposium was *Integrated Pest Management of Grape Diseases: Present and Future Strategies*. Contributions included reviews of disease life cycles in the vineyard, disease forecasting, cultural control methods, fungicide modes of action, integrated control programs, fungicide resistance, breeding vines for disease resistance, and biological control strategies. The published proceedings are now available for \$7.50 per copy (includes postage and handling). Make a check out to: New York State Agricultural Experiment Station. Send check with your request to Beverly Dunham, Bulletin Room, NYSAES, Geneva, NY 14456. Supplies are limited.

The Hudson Valley Grape School is tentatively scheduled for the region's grape growers on Thursday, April 16. The morning indoor sessions will take place at the Dutchess County Farm and Home Center in Millbrook, NY, with the afternoon session taking place in Millbrook Vineyard. For further program information contact Craig Telgheder, Columbia County Cooperative Extension, 518-828-3346.

Report of The First International Grapevine Downy Mildew Modeling Workshop in Geneva, New York, USA – Dr. Robert Seem, Associate Director, Geneva Experiment Station



Participants in the First International Downy Mildew Modeling Workshop.
 KNEELING (L to R) M. Clerjeau, C. Holmaier, T. Green, P. Cortesi, D. Gadoury, R. Pearson, M. Ellis, H. Oberholer
 STANDING: G. Pessi, F. Jimenez Diaz, R. Laporta Pomi, W. McFadden, C. Gessler, D. Truxall, S. Orlandini, F. Santner, P. Blaise, P. Kable, D. Hoppmann, J. Russo, L. Madden, A. Muza, P. Magarey, E. Park, C. Becker, D. Gubler, J. Travis, R. Seem, R. Emmett, W. Siegfried

Thirty scientists from eleven countries met at Cornell University's New York State Agricultural Experiment Station during 26-30 August 1991. Sponsored by the Experiment Station, the United States Department of Agriculture's Office of International Cooperation and Development, the New York State Wine and Grape Foundation, and the New York State Grape Production Research Fund, the workshop provided an opportunity for research and extension scientists interested in the biology, epidemiology, control, and modeling of downy mildew fungus, *Plasmopara viticola*, to share ideas,

results of experiments, and efforts to forecast the disease. The two conveners, Robert Seem (NYSAES, Geneva) and Peter Magarey (South Australia Dept. of Agric., Loxton) recognized the need for such a workshop because of the wide interest in downy mildew on grapes and the many different models being developed around the world. Prediction and forecast models presented at the workshop included ones from Australia, Austria, France, Germany, Italy, Korea, Switzerland, and USA. The other countries represented were Canada, Mexico and Uruguay. Other diseases, such as powdery mildew, and black rot, were discussed in relation to combining control tactics with downy mildew management. This was the first time a large group of scientists were able meet and work in one place on grapevine downy mildew, and the success of the workshop was validated by a unanimous decision to meet again in 1993. The group was also able to tour a portion of the Finger Lakes region and visit several vineyards and wineries. A proceedings of the workshop will be published by the Experiment Station and will be available by the summer of 1992. Inquiries should be directed to Robert Seem, Associate Director, New York State Agricultural Experiment Station, Geneva, NY 14456. Phone: (315)-787-2213 ■

Help Keep



This newsletter and the extensive grape research it is based on are made possible by funding from the New York Wine & Grape Foundation. The Foundation's budget depends totally on private sector contributions which are matched by the State of New York. And now extensive cuts in State funding have made these private sector contributions more vital than ever.

If the Foundation's research and promotional programs are to continue, we need your support through modest dues—a rate schedule and membership application are below. (Wineries and juice manufacturers have already made financial contributions of up to \$15,000 each to support the effort.) Please join your neighbors and industry associates in forging a more productive and profitable future. (Join using this form and we'll send you a "Best of the Bunch!" T-shirt.)

APPLICATION FOR GRAPE GROWER MEMBERSHIP
New York Wine & Grape Foundation

Please print all information legibly

NAME _____

NAME OF VINEYARD (If applicable) _____

STREET, P.O. OR R.D. ADDRESS _____

COUNTY _____

CITY (Town) _____ ZIP _____

TELEPHONE (_____) _____

TOTAL GRAPE ACREAGE (Optional) _____ ACRES

ANNUAL DUES (Circle Appropriate Amount)

Dues (circle)

- \$25
\$50
\$100

Acres (circle)

- 0-30
31-60
Over 60



After completing this form, please send it and a check for the appropriate amount payable to the New York Wine & Grape Foundation, 350 Elm St., Penn Yan, NY 14527. THANK YOU!

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Question:

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Gratitude is expressed to those organizations whose support makes possible ongoing and valuable research activities for the benefit of the State's grape industry. Major funding is provided by the **New York State Wine & Grape Foundation; the Grape Production Research Fund, Inc.; and, the J.M. Kaplan Vineyard Research Program.**

New York Wine & Grape Foundation
350 Elm Street
Penn Yan, NY 14527

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Got A Question? We are trying to address the many questions from grape growers and processors that come to Cornell's grape research community. We invite you to write to us at *Grape Research News* to bring to our attention any questions you have about grapes. We will see to it that those questions are answered by someone knowledgeable in the area of your concern.
Save yourself a long distance phone call. Put it in writing on the back of form below, cut it out, and send it to us.

----- CUT HERE -----

Name

Address

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Mail to:

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