



The Grape Communicator

A Newsletter for the Illinois Grape & Wine Industry

Volume 1, Number 3

January/February 2007

ILLINOIS GRAPE GROWERS AND VINTNERS CONVENE

The annual conference of the IGGVA is just around the corner. If past years are any indication, the crowds will be large as growers and winemakers gather. This conference is an annual opportunity for the industry to sharpen its skills, organize and prepare to meet the demand for their product in one of the fastest growing sectors of Illinois agriculture.

The 2007 event will be held at the Hilton Hotel in Springfield, IL on Feb 22-25. This facility is in the center of Springfield and can accommodate a number of simultaneous functions, making it a fine facility for the conference. Accordingly, the event will have educational programming; meetings and a trade show with commercial exhibitors. For more information about registration and accommodations for the conference go to the IGGVA website, www.illinoiswine.com

The conference has three full days of educational programming planned. The first day, Thursday 2/22, will focus on marketing issues. Four special topical areas have been selected as key issues for the industry; direct marketing, customer service, wine & customer reward clubs and special events. Each of these topics can play a role in promoting consumer interest in the industry's products and services.

The second day will be dedicated to issues revolving around winemaking. James Neely of the TTB will discuss new regulatory issues for Illinois' winemakers. Illinois' new state Enologist, Brad Beam of the University of Illinois, will capitalize on his experiences at Minnesota by presenting the grapes and wines from the Minnesota breeding program. Other topics planned for the enology session include filtration, oak in wine and closure systems for wine bottles.

On Saturday the educational programming will center on growing grapes. This will be a great

IGGVA Conference (cont. from page 1)

opportunity for prospective new growers as an afternoon workshop will be dedicated to helping interested people learn about the challenges of setting up a commercial vineyard in Illinois. Earlier in the day speakers from Cornell University and the USDA will discuss breeding programs that are producing new varieties and investigating rootstocks for wine grapes. Experienced growers will have an opportunity in the afternoon to learn about research taking place in Illinois on wine grapes at Southern Illinois University and the University of Illinois.

The conference finishes on a high note as a banquet takes place Saturday evening. A 5-course meal with Illinois wines paired along with each course makes for a gala event. The evening finishes with a fundraising auction that promises to be entertaining.



Many who have attended this event can attest to the value of the experience. Beyond the programming, the trade show and

meetings, the opportunity to network with others engaged in the industry is invaluable.



BREEDING NEW VARIETIES OF WINE GRAPES

Bill Shoemaker, University of Illinois

The emergence of a wine and grape industry in the Midwest in recent years has been a delightful surprise to many in agriculture. It's a surprise because it was unexpected. It's been delightful because, well, try a glass!

It was assumed by many that because the winters were too cold for European wine grapes in the Midwest that an industry of wine grape production could not develop. But it has developed because the classic European wine grapes, *Vitis vinifera*, are not the only grapes that can make quality wines. Most native-American grapes are much hardier and can also be used to make wine. Even better, these species are capable of cross-pollinating and producing viable offspring. This brings the traits of both parents together into a pool. Each offspring from a cross shares an equal

Breeding New Varieties (cont. from page 2)

random mix of genes from each parent, for better or worse. This leads to breeding and selecting grapes for the better qualities of both European and American grapes. These are often called interspecific hybrids.

Grape breeding programs, both public and private, have successfully created new varieties of grapes that are hardy in the Midwest and are capable of producing high quality wines. Many of the varieties favored by growers and winemakers in Illinois are such hybrids, created by French breeders in the first half of the twentieth century. These include Chambourcin, which was bred in France by a private hybridizer to make red wines. Other varieties with a similar background used in Illinois include Chancellor, Marechal Foch, Leon Millot, Rougeon and others. White varieties with a similar background include Vignoles, Villard Blanc, Seyval Blanc and others.

But breeders in the US have also more recently introduced quality hybrids that are hardy in Illinois. Cornell introduced Chardonel and Traminette. The University of Minnesota introduced Frontenac. Elmer Swenson, a private breeder, introduced a number of new varieties, including St Pepin, St Croix, Brianna, Swenson White and others. These breeding programs are still active with new, exciting releases coming along, such as Marquette from Minnesota. Other

breeders are also beginning to reveal new wine grape varieties with similar potential.



Bagged cluster of potential new breed.

What does it take for these breeders to successfully introduce new grape varieties? A grape breeding program takes a considerable investment of resources. A permanent site is essential. A nursery must be set up to receive seedlings. A vineyard for parent stock must be set up so the breeder can make appropriate crosses. Another vineyard will be needed once individual plants that show promise have been selected by the breeder. This vineyard will be where the breeder grows a set of plants of each experimental breeding line to test their traits and qualities. These breeding lines must prove they are adapted to the climatological conditions of the region, which vary annually. They must show significant resistance to the major diseases. They must prove manageable, yet productive. They must exhibit these qualities over numerous sites and seasons and demonstrate consistent performance. And they must consistently demonstrate that the

Breeding new Varieties (cont. from page 3)

the wine made from their grapes is of high quality. This can only be determined over the time it takes to make several vintages of wine. Then the wines must be aged to evaluate their consistency and durability. Consumers need to be introduced to gauge their response. The evaluation process is complicated and needs time to show what succeeds and what does not.

The breeder must invest a long time, essentially a career, into conducting the breeding program. It takes many crosses and individual seedlings to develop just one new variety. Some estimate that for every 2000 seedlings, one new variety may emerge. The rest of the seedlings fail to meet standards. Others suggest it actually takes many more seedlings to produce just one worthy individual. It takes many years to identify and test a new hybrid and prove its worth. Many of today's varieties were in a breeding program for 20-30 years before the hybrid could be determined to be of sufficient value to release it for commercial production. An example is Valvin Muscat, just released by Cornell University. Its experimental number, NY 62.1221, indicates that the original cross was made in 1962. It was 44 years before it was clearly determined to be of sufficient commercial value and qualified for release.

Even this long period of development, private evaluation and

public evaluation prior to release is not enough to determine the viability of a new variety of wine grape. As the industry begins to plant it, a new, probably longer, period of testing begins. This is the final exam. The grape must prove worthy to the grower, to the winemaker, and finally, to the consumer. Local conditions will vary across the region and local effects will weigh against the grape. The wine must perform in local markets and develop a following. It must be affordable, or at least a good value for the price of a bottle. Yet it must provide a good return to both the vineyard and the winery. This is an enormous process that can only succeed over a long period of time.



Grape cluster during flowering period

It may seem futile to begin a grape breeding program under these circumstances. But it was the vision of former grape breeders that created the hybrids we now enjoy as standards in our industry in the Midwest. The vast gene-pool of grape genetics is largely unexplored and untested. There is a tremendous opportunity for new *Vitis* genes and

Breeding new Varieties (cont. from page 4)

and combinations of genes to be discovered and employed in the development of new grape varieties. This represents potential to improve the most important resource for the grape and wine industry in the Midwest; quality wine grape hybrid varieties with distinction.

A modest effort to build such a program has begun at the St Charles Horticulture Research Center in St Charles, IL. Initial crosses were made in 2003, concentrating on seedless table grapes. Further crosses in subsequent seasons were focused on crosses that would result in new wine grapes. Primary criteria for offspring selection are hardiness, disease resistance, plant vigor and fruit characteristics. Each Spring new crosses are made, like the roll of the dice, looking for new combinations of genes in offspring that could lead to new opportunities for creating a valuable wine grape variety. As seedlings are grown out and tested, failures are discarded and the testing continues. Over time, certain individuals emerge as demonstrating potential. At St Charles, this process has only just begun. It is an investment in the future of our grape and wine future in northern Illinois.

**GRAPE WORKSHOP DRAWS A BIG CROWD**

Bill Shoemaker, University of Illinois

A workshop designed to help people plan a commercial vineyard was a big success in Northern Illinois' DeKalb County. It was hosted by DeKalb County Extension and the DeKalb County Farm Bureau and conducted by Bill Shoemaker, UI viticulturist. The day-long workshop attracted 49 people, who spent their Saturday focusing on the details of developing a grape-growing business plan.



Bill leading Workshop In McHenry

The workshop started with a discussion of the industry and its rapid growth since the 1980's using the report on the industry developed by UI in 2004. It then delved into the process of identifying key ingredients in a vineyard business plan. The Vineyard Business Plan Workbook,

Grape Workshop (cont. from page 5)

developed by SIU with support from CFAR, was provided to each registrant as a pdf file on a cd, giving them the opportunity to take it home and create a personal business plan for a commercial vineyard.

Attendees were then given a PowerPoint presentation on commercial viticulture, from grape genetics to canopy management and grape harvest. They learned how much work and discipline is involved in growing quality grapes. They also learned how few grape-growers take summer vacations! Terry Tuntland of Waterman Winery addressed the crowd after lunch, both educating and entertaining them. He helped them connect with the reality of the challenges growers and winemakers face as they try to make a business out of grape production. Giving several of them a chance to earn a bottle of wine kept everyone awake during the post-lunch lull.

Last, Bill came back to discuss the challenges of pest control. He emphasized that the workshop was only an introduction to the challenges they would face if they invested in a commercial vineyard. They would need to work hard to learn the industry and stay ahead of the challenge of producing quality grapes. To that end, each registrant took home a copy of the Midwest Grape Production Guide from Ohio State University.

This workshop has been another in a series of workshops aimed at preparing people to become new grape growers. The workshop was conducted with support from the Illinois Grape Growers and Vintners Association, the Illinois Department of Agriculture and the University of Illinois.

**SOME THOUGHTS ABOUT CHALLENGES FOR NEW GRAPE GROWERS IN THE UPPER MIDWEST**

Patrick Pierquet

When I first moved to Minnesota in 1975 to do my research on grapevine cold hardiness physiology, there was just one winery in the state (Alexis Bailly Vineyards), plus a few other grape growers. Because there were no fully hardy wine grape varieties at that time, growers had to adopt the laborious practice of burying their vines in the fall, then uncovering them in the spring and tying them back up on the trellis. This put a severe limitation on the size of the winegrowing industry in this state.

Some Thoughts About Challenges (cont. from page 6)

Fortunately, in recent decades a number of cold hardy wine grape varieties have been introduced for the North. As a result, there has been an explosion of interest in viticulture and commercial winemaking in the upper Midwest. Minnesota now has 20 wineries, with several more in the planning stage. As I understand it, Illinois has experienced a similar rapid expansion of its grape and wine industry. Because this industry has such a romantic and aesthetic appeal, grape growing has attracted many people whose enthusiasm substantially exceeds their viticultural skills and knowledge. (Note, this is not necessarily a bad thing!....Enthusiasm is an important element in getting a vineyard started.) I suspect the situation is similar in a number of other northern states, particularly in nontraditional grapegrowing areas such as Illinois, and I thought my observations might be of interest to your growers. Below I've described what I have observed to be the most common challenges to new grape growers in the North.

Vineyard site selection. I think many new growers are under the impression that if other crops (eg., corn and soybeans) are doing well on a particular piece of land, grapes will thrive, as well. In the upper Midwest, this has led a number of growers to plant vineyards in low-lying bottomlands. Such sites are

viticulturally undesirable for a number of reasons: excessive soil fertility, abnormal early-fall and late-spring frosts, dampness and humidity with little air movement, and excessive soil moisture. (One new winery even made jokes on its website about the foot of water that covered their vineyard last year during the spring flood!) For a good discussion on vineyard site selection, check out the "Midwest Grape Production Guide", from OSU¹.

Size of the vineyard. A number of growers have planted vineyards that are much larger than they can properly care for. New growers do not realize how labor-intensive it is to grow grapes. I once visited with a winery owner who had planted 34 acres of grapes in just two years. The vines were in their third and fourth year, the trellis still had not been completed, and a number of the rows were crooked and needed replanting. He was looking to hire a new vineyard manager. This new worker, with only one additional summer helper, was expected to pull the vineyard into shape in one year...A "job from hell", if ever there was one. This was four years ago, and I don't know if they have ever caught-up.

Variety selection. There are now many more than a dozen wine grape varieties that are reasonably cold hardy in the northern tier of states. A number of new growers have taken the "a little of this and a little of that" approach to variety selection, the

Some Thoughts About Challenges (cont. from page 7)

result of which is a vineyard with a confusing array of too many varieties. Planting so many varieties complicates vineyard care, and can make the harvest schedule extremely challenging! Better, in my mind, to carefully choose a few varieties and learn how to grow each variety extremely well.

Granted, in the North we don't yet have a complete knowledge base that would inform us which grape varieties grow best in all areas. However, we do know enough about many of the new varieties to give some guidance to the new grower. For example, we know Frontenac fruit needs to hang on the vine long past the usual 22-23 degrees brix, in order for the acid to come down to workable levels. Thus, this variety is probably not a good choice for short-season areas. Similarly, we know that St. Croix often exhibits excessive vigor, and is probably a good choice only for those growers who are willing to construct a GDC trellis system. By talking to other growers, perusing university viticulture websites and attending viticulture workshops, a new grower can gather a lot of useful information that will help him/her select the best grape varieties to plant.

Trellising and training. This is one of my biggest concerns for new growers in this region of the country. Many new growers have adopted trellising/training techniques that are

highly questionable. For instance, some growers will scrimp on trellis post length, trying to save a few dollars. The result is a trellis system with the top wire at 4-1/2 or 5 feet, which is not really adequate for good sunlight exposure of the leaf canopy. In addition, a number of growers are adopting VSP training for all their grapes, regardless of the grape variety's growth habit and level of vigor. VSP training is really appropriate only for low- to moderate-vigor varieties², and for those varieties with an upright growth habit. In my mind, VSP is not really an appropriate training system for highly vigorous varieties like Frontenac, LaCrescent and St. Croix (particularly on our fertile Midwestern soils), yet growers are trying to train these varieties to the VSP system. As the vines mature, it will be extremely difficult to contain these vigorous varieties on a VSP trellis, and a real struggle to maintain their shoots in an upright growth habit.



Some Thoughts About Challenges (cont. from page 8)

Grow tubes. Many new growers seem to be convinced that grow tubes are the greatest invention since sliced bread. But I'll go out on a limb with this one....I'm not a big fan of grow tubes. Granted, they help protect a young vine from herbicide spray and depredation by deer and rabbits. But in my mind, the job of the vine during its first year is to establish a big, vigorous root system....the second year is for training the trunk and/or cordons. A number of research studies have shown that vines grown without grow tubes, and with multiple first year shoots, show significantly more root growth than those grown in grow tubes³. The use of grow tubes can also negatively impact the early winter cold hardiness of grapevines⁴. However, I'll keep an open mind on this topic, and will follow Bill Shoemaker's vine establishment research project very closely!

Foliar fertilization, and other unproven nutrition practices. A number of new growers have been convinced by fertilizer companies that they need to apply regular maintenance "programs" of foliar fertilizers to their vineyards. Research does not support such routine use of foliar fertilizers⁵. With the exception of a few micronutrient deficiencies (boron, for example), foliar fertilization has been notoriously ineffective in improving

the growth and/or productivity of grapevines. At least one of the companies that is pushing foliar fertilizers for grapes is also advocating other borderline-quack practices....one grower I know applied molasses to his vineyard soil, on recommendation of the fertilizer company! Since grapevine nutrition can have an important impact on vine productivity, fruit ripening, and cold hardiness, it would be a good idea for the new grower to become very familiar with the principles and practices of vineyard fertilization. There are a number of sources for good information on grapevine nutrition practices; the "Midwest Grape Production Guide"¹ is one good source.

Since I first became involved with the viticulture industry, the number of vineyards and wineries in the upper Midwest has expanded dramatically. It has been very exciting to watch this growth, and to meet many of the enthusiastic newcomers who are behind this expansion. Hardy new grape varieties, improvements in our viticulture knowledge base, and an increase in outreach efforts at Universities have all helped foster this expansion, as well. I hope some of the observations I've listed here will be useful to new growers in your state.

(editor's note; As a grad student, Patrick was involved in making the grape-breeding pollination that resulted in Frontenac grape)

Some Thoughts About Challenges (cont. from page 9)

¹ Url is at:
<http://ohioline.osu.edu/b919/0004.html>

²“Sunlight Into Wine”, by Dr. Richard Smart, 2001. Publ. by WineTitles.

³ See, for example, “Grow Tubes – The Drawbacks”:
<http://www.westernmaryland.umd.edu/Grow%20Tubes%20Drawbacks.pdf>

Also, slides 36 and 37 of Bruce Bordelon’s excellent presentation “Vineyard Establishment”:
<http://viticulture.hort.iastate.edu/info/pdf/bordelonvineest.pdf>

⁴“The Influence of Grow Tubes and Vine Spacing on the Establishment of ‘White Riesling’ Grapevines Under Michigan Growing Conditions”:
http://www.michiganwines.com/Research/research_articles/archive/0003project.html

⁵“Foliar Fertilization of Grapevines”:
<http://cetulare.ucdavis.edu/pubgrape/ng694.htm>



PRUNING SEASON BEGINS

Denise Cimmarrusti, Viticulture Technician, St Charles Horticulture Research Center

It’s almost hard to believe that spring will soon be here, especially in northern Illinois, where temperatures

have been in the single digits and below, for the past week or so. Although the cold makes us all want to hibernate, this is prime time to start thinking about pruning of those dormant grape vines. With temperatures being less than ideal for being outdoors, growers in the northern part of the state won’t begin the actual pruning chore just yet, but some growers in the southern part of the state have already begun this seasonal task.

In preparation for this springtime task, it may be necessary to review some of the basic principals and practices of pruning and therefore you may want to visit the following link:

<http://breeze.ag.vt.edu/westover1/>

By clicking on the link above, you can view “Dormant Grapevine Pruning”. It is a nice presentation by Fritz Westover, Viticulture Research Extension Associate at Virginia Tech. Hope you find it helpful if you need a pruning refresher.

This newsletter welcomes new contributors. If you would like to make a newsletter contribution, please contact Denise Cimmarrusti at cimmarru@uiuc.edu or Bill Shoemaker at wshoemak@inil.com .

If you do not have access to an electronic copy of this newsletter and would like to receive one, please send your name and address to the address below.



The Grape Communicator is an electronic newsletter, free of charge, for those interested in the Illinois Grape and Wine Industry.

For further information contact:

*Bill Shoemaker, Publisher
Denise Cimmarrusti, Newsletter Editor
University of Illinois
St Charles Horticulture Research Center
535 Randall Road,
St. Charles, Il. 60554
(630) 584-7254
Newsletter web site link: www.illinoiswine.com*

We hope you have enjoyed reading this edition
As always, we welcome your feedback