

Le Vigneron

A newsletter for the grape growers and wine makers of Oklahoma

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Grape Season in Full Swing

It is March 30th and about to pour some much-needed rain in Stillwater as I finish up this edition of the newsletter. So far the spring weather has been very benevolent and we keep our fingers crossed that it continues. ‘Chardonnay’ broke bud in Perkins around mid-March with many other varieties not far behind. I expect that we will have a good crop that will yield some great experimental results. There is a lot of interest in grapes on campus and we hope to capitalize on that enthusiasm to expand our capabilities. This summer we hope to make wine on campus for the first time in order to identify quality components of different varieties. I am also working with nutritional science researchers to see how grape juice works as an anti-inflammatory agent. There are a lot of irons in the fire right now at OSU! I also just returned from the National Extension Viticulture and Enology Leadership Conference where viticulturist and enologists from all over the country came together to discuss issues of importance. We all recognized the need for quality education in the areas of viticulture and enology and hope to address that need on a nationwide scale in the future. We also will be exploring ways to integrate distance education more into extension programs so that we can make information available without the need to travel. A test of video conferencing capabilities will be conducted in Michigan, Ohio, and Ontario, Canada this summer to see if this delivery method works in a manner that is suitable. Just imagine — someday in the not too distant future you may be able to attend a video conference in Stillwater (or other location in Oklahoma) for a conference being held in California, Oregon, New York, or Missouri. It would allow full interaction with the speakers as well. Extension specialists along with Information Technology professionals, are working to make this a reality. So, good times are ahead for the education of grape growers and wine makers throughout the country.

2007 OSU Grape Management Short Course Update

Eric T. Stafne

The 2007 OSU Grape Management Short Course is up and running. The first class met on March 8th. We covered a variety of topics, but focused primarily on pruning. Attendance is down this year, with 26 students. That is compared to 65 last year. I would attribute the difference to new programs being started at other institutions within the state. However, the smaller numbers allow us to have more interaction with the students and, perhaps, provide a more intimate learning experience. I will keep you updated on the progress of the course, as I hope that those of you reading this that have not yet taken it will consider it in the future.

Apple Twig Borer Problems Continue to Surface in State's Grape Vineyards

Phil Mulder, Extension Entomologist

Although hardly a leaf has yet developed, several Oklahoma vineyards reports have already reported damaging beetle populations, more so than in previous years. The culprit is the apple twig borer, *Amphicerus bicaudatus*. This worrisome little beetle has been damaging grapes and other plants for quite sometime, since it is likely native to this part of the country. Damage consists of perfectly round holes (about 1/8 of an inch in diameter) drilled just below or above the bud or node of young grape plants. Attack is not limited to younger plants, but so far these are the ones that seem to be gaining their attention. In addition, they have produced similar damage on young pecans and various fruit trees.

The apple twig borer has an incredibly wide host range, attacking pecan, peach, plum, apricot, pear, ash, butternut, hickory, maple, apple and grape. Adult activity occurs in early spring and fall, although there is only one generation per year. Eggs are laid in the bark of twigs and small branches. After hatching, the larvae burrow into the twig, generally straight to the pith and tunnel along this path, packing the frass behind them. In the fall larvae mature and pupate within the larval tunnel. They may or may not transform into adults, but usually hibernate inside the larval gallery in winter. Some adults will actually emerge and later enter another cane when winter sets in. All adults will emerge in spring from March through May and repeat the cycle again.

Continued on Page 3

Conclusions from the 2006 Oklahoma Grape Survey

Eric T. Stafne

In total 90 surveys were returned. This number is somewhat disappointing considering the time and effort expended to develop and advertise the survey. Only 16 of the more than 40 wineries participated in the survey. The question of why so few wineries answered the survey questions needs to be addressed. As in any survey, the expectation is less-than-desired participation. There seems to be a general lack of willingness to share information or a lack of understanding as to its importance based on the total number of surveys returned, as well as the number of questions that were not answered by respondents. Another survey may be warranted at a later date.

The acreage reported in the survey is approximately 240 acres. If one were to extrapolate total acreage based on the percentage of wineries that responded (~40%), the total acreage may approach 600 acres statewide; however, that is speculation and in no way constitutes a true estimate. As expected, *Vitis vinifera* varieties are the most widely grown in Oklahoma because of the burgeoning wine industry. Observation and research has shown some vinifera varieties to be highly susceptible to cold damage. More research needs to be conducted to elicit where vinifera varieties do best in Oklahoma. French x American hybrids are good alternatives due to their better cold tolerance, but have not been embraced by Oklahoma grape growers outside of the northeast part of the state. Reasons for this bias likely include hybrid varieties being perceived as lower quality than vinifera varieties, ignorance of available hybrid varieties, personal preference, and misinformation.

Grape acreage has increased most years since 1998. As of now, there appears to be no ceiling for grapes in Oklahoma. The industry is vibrant and public interest is high. The main obstacles for development of a sizable and sustainable industry are unfavorable liquor laws, environment (particularly cold damage), and education. Oklahoma State University is making every effort to work toward solving the cold damage and education limitations.

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Apple Twig Borer Continued

While damaged or dying trees are usually attacked the beetles will bore into living, healthy branches. Plants that were in good shape prior to attack, will begin to wilt, droop and never look as healthy as adjacent uncompromised plants. These infested plants may not die immediately because the entire vascular system of the plant has not been disrupted; however, they will never catch up to the healthy plants. The problem often goes unnoticed because of the timing of their emergence and size and position of their exit holes. The exit hole is generally located near a bud (either just above or below) and they are only about 3-5 millimeters.

The primary means of managing this devastating beetle can take several approaches. First, keep all plant material healthy and well-fertilized. Second, eliminate wild grapes, or other hosts near the vineyard. Third, any infested branches broken limbs and prunings should be routinely collected and burned. If widespread proliferation of beetle populations is evident a well-timed application of insecticide may help in reducing beetle populations, but total control will continue to be a challenge with the prolonged emergence pattern of beetles. Sanitation (burning) and exclusion (eliminating wild hosts) is the best long term solution to this potentially reoccurring problem.

Interesting Reading at Wines & Vines Links

Eric T. Stafne

I often get behind on my reading and can't keep up with all the great articles that come out every month. However, Dwight Miller has been consistently feeding me links of interest and I thought I would share a few with you. For those of you that already receive Wines & Vines, you may have already read these, but for those of you who don't subscribe, certain articles are available online for free. Just go to winesandvines.com and click on the links for the different monthly issues. Recent articles have covered sustainable vineyard culture, crop estimation, vineyard floor management, new trends in nursery sales, and other interesting topics. Even though most of this information is Coast-centric (West and East), some of the techniques used are still relevant for us in the central U.S.

N.Y. dairy develops wine-flavored ice cream

This blurb was sent to me by Dr. Joe Fiola, University of Maryland Extension Fruit Specialist. What will they think of next?

New York restaurants are serving up scoops of wine-flavored ice cream for dessert. The new ice creams, which have an alcohol content of 5 percent, were created by Oneida County Dairy in Booneville, N.Y. The dairy is owned by eight local farm families. Along with its traditional 36 flavors, the company has added three for adults only Ala Port Wine, Peachy White Zinfandel and Red Raspberry Chardonnay.

Viticulture Education Program for Grape Growers Administered by OSU

Eric T. Stafne

Viticulture Education Program

This program is a cooperative effort among Oklahoma State University – Stillwater (OSU-S), Oklahoma State University – Oklahoma City (OSU-OKC), Tulsa Community College (TCC), and the Oklahoma Grape Growers and Winemakers Association (OGGWMA). It is administered by OSU-S.

This is a two-tier professional education program. The Basic level provides college training in the fundamentals of horticultural science, plus applied training in viticulture and related techniques through OSU Cooperative Extension. The Advanced level provides further college training in horticultural science and related disciplines, plus further applied training through OSU Cooperative Extension. There is a five-year total time limit to complete the program. The Basic level would need to be completed in two years, and the Advanced level would need to be completed no more than three years after completing the Basic level.

The list of approved courses and workshops may change over time. Participants should obtain approval from OSU-S prior to enrollment in courses or workshops other than those specifically listed. Knowledge testing will be required at completion of short courses and Extension workshops. A grade of “C” or better will be required in all college-level courses. Participants who anticipate matriculating towards a college degree in horticulture at OSU-S, OSU-OKC, or TCC should contact an academic advisor at the appropriate institution for guidance in college course selection. Those intending to eventually pursue at B.S. in horticulture should contact Dr. Brian Kahn, Department Undergraduate Advising Coordinator at OSU-S.

OSU-S will collect a one-time program registration fee of \$25. Any additional fees for courses, workshops, conferences, pesticide applicator testing, etc. will be paid directly by program participants to the appropriate entities. Participants are responsible for documenting attendance at events, and agree to provide transcripts for purposes of verifying satisfactory completion of required college courses. Participants completing each level of the Viticulture Education Program will be duly recognized with a framed certificate at the annual conference of the OGGWMA.

For more information, or to register for the program, participants may contact:

Viticulture Education Program

c/o Ms. Stephanie Larimer

Dept. of Horticulture and Landscape Architecture

360 Agricultural Hall

Oklahoma State University

Stillwater, OK 74078-6027

405-744-5404

Economic Considerations for Potential Grape Producers

Roger Sahs, Extension Specialist, OSU Dept. of Agricultural Economics

Industry Overview

Over the past several years, Oklahoma's wine industry has experienced a tremendous growth in both grape and wine production. Oklahoma's grape and wine industry is based on the production from a number of grape cultivars from the American, Hybrid, and Vinifera groups. According to the Oklahoma Grape Growers and Wine Makers Association (OGGWMA), there are 48 licensed wineries. With more acres coming into production each year, the percentage of Oklahoma-grown grapes crushed at these wineries is expected to grow, resulting in more wine that is truly "Oklahoman" by nature.

Although established vineyards may generate per acre net returns substantially higher than conventional crops grown in Oklahoma, there are numerous challenges to be considered. Viticulture should be approached with a full understanding of what it takes to be successful, as it requires a significant investment of time, money, and knowledge. Oklahoma's range of geographies, soil types, precipitation patterns, and overall climate presents many challenges to supplying the necessary quantity and quality of grapes demanded by local wineries.

While Oklahoma wines are beginning to distinguish themselves in regional competitions, they face ever present competition from home and abroad. California produces a majority of all wine consumed in the United States; Chilean, Australian, and European imports are increasingly popular as well. And an Oklahoma Cabernet Sauvignon may not taste like its California counterpart or like a French Bordeaux, which can create negative perceptions among local consumers.

By the same token, there is a great potential for continued growth in Oklahoma's wine industry. As more research-based information is available and more producers are trained in the art of viticulture, producer profits will be enhanced. Agri-tourism and hospitality events are expected to increase demand and expand winery capacity. Wineries and grape growers will need to continue producing the best Oklahoma wine product possible with unique character and quality. If such challenges are met, the Oklahoma grape and wine industry will continue to prosper in the years to come.

Grower Considerations and Keys to Success

Markets. Be sure that the grape cultivars that you decide to invest in will be marketable when they bear fruit.

Check with wineries and see what types of grapes they are interested in buying. Determine what cultivars will be in short supply or popular in the next five to ten years. It would be advisable to obtain a contract or firm commitment from wineries before you plant. Generally speaking, it takes 2.7 pounds of grapes to make a 750-ml bottle of wine. Therefore, one ton of grapes produces about 150 gallons, 62.5 cases or 750 bottles (750-ml) of wine.

Education. Better know what you are doing or growing grapes will be a painful lesson in the pocketbook. You will need to have an eye for detail, be able to follow set procedures, and understand the risks involved. Talk to local growers and Extension personnel. Other sources of information are: books/periodicals on grape production and industry, commodity organizations, and grape production websites on the Internet. Focus on financial management as much as production performance. Realize that alternatives that appear profitable for one producer may not work for another. Everyone's experience levels, managerial abilities, and willingness to assume risk is different. Knowledge of budgeting tools and the ability to use them will help make the right decision.

Investment. Investing in a vineyard is often an expensive undertaking and can be financially stressful. You will need sufficient capital and time to live for three years without any return from your vineyard while you still devote time to the enterprise. Preproductive expenditures can vary greatly, but expect over the first three years to exceed \$8000 per acre exclusive of land costs with annual expenses over \$1500 per acre.

Start slow with a few acres at a time. Proceed with caution when trying new things. This is especially the case if you have limited knowledge of viticulture and/or farm machinery. It will help you learn about growing grapes without taking any unnecessary risks along the way.

Continued on Pages 6 and 7

Lacking the information needed to make perfect decisions, specialty crop producers are forced to use the best information available and take calculated risks. Enterprise budgets are the foundation for risk-management decisions. An enterprise budget estimates the full economic costs and returns projected to accrue to an activity - raising livestock, producing grain, growing fruit - for some period, generally one year. They facilitate comparisons of profitability while documenting resources, management practices and technology used in production.

OSU software is available to develop a customized budget for an individual operation (<http://www.agecon.okstate.edu/budgets>). The Microsoft Excel-based software provides users access to important agricultural references during an "interactive" budget building process. Through a series of links and pop-up menus, users may override defaults with their own values to customize the budget if their experience and farm records indicate different values and production practices. Where possible, web-links are built into the spreadsheets to provide users important economic and agricultural science information on the Internet. In addition, information on break-even prices and yields plus sensitivity tables is presented.

Preliminary budget estimates for vinifera grapes in Oklahoma suggest the following figures exclusive of land costs (Table 1). Years 0-2 is the preproductive period (year zero is a "green crop" year prior to planting vines in year 1) for the grape enterprise. By the 3rd leaf year, some marketable production is being harvested.

Having a positive return above operating costs indicates the operation is able to contribute to fixed costs associated with owning capital assets. By the time grapes are assumed to reach their mature yield in year 5, positive returns above all specified costs indicate that the operation is self-supporting and shows an amount available for reinvestment in the business or family living. In cases where operating costs are covered, but the return above all costs is negative, insufficient income is generated to cover all fixed costs. Losses may be a short-run problem depending on production or cost problems within any given year.

Table 1. Preliminary budget estimate summary for producing Cabernet Sauvignon grapes in Oklahoma.

| Year | Operating Cost (\$/a) | Fixed Cost (\$/a) | Total Cost (\$/a) | Production (tons/a) | Price (\$/ton) | Total Receipts (\$/a) | Net All Specified Cost (\$/a) | Accumulated Net Investment (\$/a) |
|------|-----------------------|-------------------|-------------------|---------------------|----------------|-----------------------|-------------------------------|-----------------------------------|
| 0 | \$ 140 | \$ 7 | \$ 146 | 0.00 | \$ - | \$ - | \$ (146) | \$ (146) |
| 1 | \$ 4,158 | \$ 1,422 | \$ 5,580 | 0.00 | \$ - | \$ - | \$ (5,580) | \$ (5,726) |
| 2 | \$ 1,689 | \$ 1,388 | \$ 3,077 | 0.00 | \$ - | \$ - | \$ (3,077) | \$ (8,803) |
| 3 | \$ 1,275 | \$ 2,085 | \$ 3,360 | 1.30 | \$ 1,200 | \$ 1,560 | \$ (1,800) | \$ (10,603) |
| 4 | \$ 1,438 | \$ 2,085 | \$ 3,523 | 2.40 | \$ 1,200 | \$ 2,880 | \$ (643) | \$ (11,246) |
| 5 | \$ 1,608 | \$ 2,085 | \$ 3,693 | 3.50 | \$ 1,200 | \$ 4,200 | \$ 507 | \$ (10,739) |

Building on budgets to view sensitivity analysis is helpful in evaluating the financial risk associated with an enterprise. With sensitivity analysis, income variability due to price and production risk is demonstrated (Tables 2 and 3). Once again, the figures are exclusive of land costs. This information helps managers assess their willingness to assume risk under these variations.

Table 2. Sensitivity of yield versus price on per acre net returns above total operating costs, Cabernet Sauvignon grapes in Oklahoma.

| Yield (ton/ac) | Price (\$/ton) | | | | |
|----------------|----------------|----------|----------|----------|----------|
| | \$ 1,000 | \$ 1,100 | \$ 1,200 | \$ 1,300 | \$ 1,400 |
| 2.00 | \$ 622 | \$ 823 | \$ 1,023 | \$ 1,223 | \$ 1,423 |
| 2.75 | \$ 1,257 | \$ 1,532 | \$ 1,807 | \$ 2,082 | \$ 2,357 |
| 3.50 | \$ 1,892 | \$ 2,242 | \$ 2,592 | \$ 2,942 | \$ 3,292 |
| 4.25 | \$ 2,526 | \$ 2,951 | \$ 3,376 | \$ 3,801 | \$ 4,226 |
| 5.00 | \$ 3,161 | \$ 3,660 | \$ 4,160 | \$ 4,660 | \$ 5,160 |

Table 3. Sensitivity of yield versus price on per acre net returns above total costs, Cabernet Sauvignon grapes in Oklahoma.

| Yield (ton/ac) | Price (\$/ton) | | | | |
|-------------------|----------------|------------|------------|----------|----------|
| | \$ 1,000 | \$ 1,100 | \$ 1,200 | \$ 1,300 | \$ 1,400 |
| 2.00 | \$ (1,462) | \$ (1,262) | \$ (1,062) | \$ (862) | \$ (662) |
| 2.75 | \$ (828) | \$ (553) | \$ (278) | \$ (3) | \$ 272 |
| 3.50 | \$ (193) | \$ 157 | \$ 507 | \$ 857 | \$ 1,207 |
| 4.25 | \$ 441 | \$ 866 | \$ 1,291 | \$ 1,716 | \$ 2,141 |
| 5.00 | \$ 1,076 | \$ 1,576 | \$ 2,075 | \$ 2,575 | \$ 3,075 |

Financial Measures and Where to Get Help

Occasionally I get questions about evaluating investments in terms of how long will it take for a vineyard to pay for itself or in other words, the results of the payback method. The principal advantage is its simplicity, but that's also the main downfall. It does not consider the time value of money and often fails to consider earnings over the entire vineyard's useful life. Finally, there is no logical basis for establishing a meaningful payback period. Should the maximum be 5 years, 10 years, or whatever is really a matter of guesswork.

The overall financial performance of a vineyard as a business or within a larger diversified farm operation should be evaluated through measures of liquidity, solvency, repayment capacity as well as the rate of return on assets (or equity). No single measure is sufficient for evaluating financial position as several measures must be tracked over time to provide a true perspective.

Oklahoma farmers and ranchers can call on the Intensive Financial and Management Planning Support (IFMAPS) program to receive free, confidential assistance in farm business planning, including analyzing the potential for a new or expanded vineyard. Trained financial specialists work with families one-on-one to develop financial statements and evaluate alternative plans. The plans typically include budgets for the farm enterprise(s), a cash flow plan, income statement, balance sheet, debt worksheet, and financial measures. Contact your local agricultural Oklahoma Cooperative Extension Educator or call the IFMAPS Center at 1-800-522-3755.

Summary

Note that the budget illustrations are for vinifera cultivars and are supplied for planning purposes only. Hybrid and American varieties may have lower price per ton, but also experience lower disease pressures and are more dependable producers. Since every producer's experience levels and managerial abilities vary, as do vineyard site locations, budgets need to be tailored to fit individual situations.

The bottom line is – make sure your operation is as cost effective as possible. Identify new technologies/cultural practices that help lower costs. Find the leverage points that can generate the most bang for the buck. Benchmark the competition and become a trusted partner with your wineries. When it comes to moving the wine bottle off the shelf, grape growers and wineries are passengers in the boat driven by the consumer in the captain's chair.

**OKLAHOMA STATE UNIVERSITY AND
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We welcome feedback and suggestions. Any responses can be mailed or emailed to the addresses on the left. We will strive to provide useful, pertinent, and timely information.

Initially this newsletter will be published 4 times per year in January, April, July, and October. If warranted the timing can be amended to better serve the grape growers and wine makers of Oklahoma.



'Vigneron' is the French word for someone who grows grapes for use in wine making.

Survey conclusions

Pest problems that grape growers face are numerous. Insect pests are usually troublesome rather than catastrophic in most cases. Green June beetle is perennially the most damaging. Diseases are more important as related to harvest potential. Black rot is widespread throughout Oklahoma and prevention with fungicides and/or genetic resistance are the only methods to control it. Other diseases like crown gall, downy and powdery mildew, and bunch rot are also serious for grape growers. Growers should look for assurance of crown gall-free plant material before receiving shipments from nurseries. Abiotic problems like environment and herbicide drift vary in their importance depending on location. Harsh environmental factors were often mentioned in the survey, including frosts, freezes, and drought. The sensitive crop viewer that vineyard owners can register for with the Oklahoma Department of Agriculture, Food, and Forestry is a good initial step to curb potential herbicide drift; however, grape growers must also be vigilant in educating neighbors of the potential ramifications of phenoxy (and other) herbicide drift on grapes. Also, as more grapes are grown in Oklahoma depredation will likely increase, especially from birds. In the future, some growers may need to net their vineyards to ensure harvestable fruit.

Twelve OSU county educators responded to calls for distribution of surveys. In total the survey revealed 33 counties in Oklahoma where grapes are grown; therefore, a disconnect is apparent between grape growers and county educators. Many county educators have no background in viticulture and grape growers may dismiss them due to this lack of knowledge. Grape growers and county educators need to work together to bridge the gap and forge ahead as partners for the good of the industry. Dr. Stafne will provide all interested county educators with in-service training on grapes, as well as other educational materials to foster improvement in this area.

Overall, the survey was successful in identifying what varieties are being grown, what problems growers are encountering, and the future direction for educational programs. The survey fell short in gaining a comprehensive report of the industry in terms of acreage and value. More education needs to be done to inform potential survey takers that information collected will be important to the future of the industry and that all information collected is anonymous and confidential. To get a copy of the complete report contact Dr. Stafne.