

Le Vigneron

A newsletter for the grape growers and wine makers of Oklahoma

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Great Things Ahead

As far as 2006 goes, it was a difficult year for plants and humans. Not only was the summer weather hot and dry, but the late winter/early spring temperatures were unpredictable. Hopefully, 2007 will bring relief in the form of rain (at the right times, of course) and let us all benefit from a bountiful harvest. This year will also bring about exciting new opportunities for the grape growers of Oklahoma. Oklahoma State University - Stillwater, in conjunction with other institutions such as OSU-OKC and TCC, will launch a Viticulture Certificate Program (see page 4 for more details). What we hope to accomplish with this program is a broad knowledge of horticulture coupled with in-depth courses, programs, and workshops in viticulture and enology. We believe that understanding the fundamentals of the sciences that relate to horticulture as a whole will make better, more efficient growers in the future. This is an exciting program for us and we believe that you will find it beneficial as well. We have plans to develop more workshops and educational opportunities to take advantage of this year, so keep an eye out for those later on. We will also present results of the grower survey that was conducted. As always we will keep you abreast of the research we are conducting and the pertinent outcomes that result. Please let us know if there are areas that need more attention, because we are here to work with you. At OSU we see great things ahead for the grape industry in Oklahoma and enjoy the opportunity to interact with so many enthusiastic individuals. So, without further ado, we present the first issue of Le Vigneron for 2007.

Time to Register for the 2007 OSU Grape Management Short Course

Eric T. Stafne

The 2007 OSU Grape Management Short Course is currently accepting registrations. Space is limited to 70 individuals, so the earlier you register the better. The course is taught March through September, meeting one Thursday afternoon per month for 4 hours. Many different topics are covered, including: planting, pruning, fertilization, entomology, plant pathology, cultivar selection, and post-harvest issues. If you are interested and want more information, please contact me (my email and phone number are on the back page) or visit our webpage at www.okstate.edu/ag/asnr/hortla/ftpncs/grapes.htm. If you wish to sign up for the 2007 course, please contact Stephanie Larimer at 405-744-5404 or stephanie.larimer@okstate.edu.

Grape Pruning Workshop to be Held in February

Eric T. Stafne

A grape pruning workshop will be held February 9, 2007 from 4pm to 6pm at the OSU Perkins Experiment Station. There will be a short classroom session covering some of the basics of grape pruning, then practical, hands-on training will be done in the vineyard. We will cover pruning for VSP and High Cordon training systems. Bring your own pruners, safety glasses, and warm clothing so that you can practice, too. Pruning correctly is an integral part of vineyard management, so we believe this is an important workshop to attend. As an added bonus, if you wish to pursue the new Viticulture Certificate Program (more information on page 4 of this newsletter), this workshop will count toward the certificate. You must notify me in advance if this is the case so that I can make sure proper credit is given. A fee of \$10 to attend the workshop will cover reproduction costs and other necessities. This can either be paid in advance or "at the door". Please contact me to sign up for this workshop.

Stages of Dormancy in Grapes

Eric T. Stafne

Three main physiological stages exist related to dormancy and cold hardiness in grapes. The first stage in the dormancy process is acclimation, which is the ability to adjust to climate change. This begins after the vine has ripened its crop and shoot growth has ceased (Rombough, 2002), which is usually late summer into early fall. In order to reach full acclimation a period of cool weather is required before the first freeze. Acclimation occurs mainly during the fall months of October and November, although it begins in August. The weather during October and November can be difficult in some areas of Oklahoma because damaging temperatures may occur prior to full acclimation. Areas in the northern regions of Oklahoma (Table 1, page 3) are much more likely to experience harmful temperatures than those in southern Oklahoma.

The second stage, mid-winter hardiness, is the ability to survive particular climatic adversities, especially freezing temperatures during dormancy. This occurs in Oklahoma from December through February. There is a limit as to how cold hardy a particular cultivar can be based on its genetic background. Exposure to temperatures below 20 °F over a period of several days ensure maximum hardiness (Rombough, 2002). Mid-winter temperatures below 0 °F are considered to be potentially damaging to *V. vinifera* grapes (Fennell, 2004). These temperatures are prevalent only in northern areas of Oklahoma where the average occurrence is more than once per year (Table 2, page 8). However, damaging freeze events are common enough throughout the state to warrant caution when growing *V. vinifera* grapes.

The third stage is called deacclimation. It is the process of breaking dormancy and readjusting to warmer temperature conditions. This process is caused by periods with temperatures above 32 °F and it occurs fairly quickly (Rombough, 2002). It usually occurs in the spring, but warm temperatures in winter can cause deacclimation leading to severe damage when cold weather returns. Timing of deacclimation is likely the most worrisome for Oklahoma grape growers. This is particularly true for cultivars with early budbreak, such as 'Chardonnay'. Northern regions of Oklahoma average many potentially damaging weather events during the normal deacclimation period of March through May (Table 3, page 8). Even areas in the southern part of the state will experience a handful of freeze events during spring. At best, minimal bud and/or green shoot damage is experienced. At worst, trunk splitting and permanent trunk and cordon damage can occur.

Stages of Dormancy continued

Table 1. Number of freeze events below 28 °F at nine locations within Oklahoma for the months October and November from 1950-2005 when fall acclimation occurs.

Location	Total Freeze Events	Average/Year
Boise City	875	16
Buffalo	558	10
Pawhuska	470	9
Webbers Falls	346	6
Hobart	274	5
Enid	268	5
Chandler	254	5
Durant	197	4
Ardmore	112	2

Lincoln County Grape Growers Association Symposium

Raquel Tilghman

The Lincoln County Grape Growers Association is hosting the 1st Annual Oklahoma Grape Grower Symposium to be held in Chandler, Oklahoma on March 16th & 17th of 2007. The purpose of the symposium is to educate new growers on sources of suppliers, education, financial planning and assistance, vine stock, marketing ideas, and grower/winery relations. It will also feature well-known speakers as well as networking amongst grape growers and grape growers' groups. This year is the 1st year of a statewide educational event focused solely on growing grapes held annually, sure to gain momentum with each passing year. If you need more information, please contact Exhibit Chairpersons: Raquel Tilghman, rtilghman@americanplant.com or Robin Rowden, denrowLLC@aol.com.

OGGWMA 2007 annual meeting set for OKC Crowne Plaza

OGGWMA

Recently remodeled Crowne Plaza (formerly the Hilton Inn Northwest) of Oklahoma City will host the 2007 Oklahoma Grape Growers and Winemakers Association members Friday, January 19 through Sunday, January 21.

Already several speakers have been confirmed. Jennifer Montgomery, director of government affairs and grassroots organization for WineAmerica, will make her second trip to Oklahoma within the last eight months.

Other speakers confirmed include Dr. Eric Stafne, Dr. Dean McCraw (retired), both of Oklahoma State University; and Tressa Madden of the Oklahoma State Department of Health. Other speakers and panels will be announced as confirmed.

Viticulture Certificate Program to Provide Educational Opportunity for Grape Growers

Trisha Gedon

Oklahoma grape growers will soon have a new educational opportunity thanks to Oklahoma State University-Stillwater, OSU-OKC, Tulsa Community College and the Oklahoma Grape Growers and Wine Makers Association.

Eric Stafne, OSU Cooperative Extension fruit and nut crops specialist, said the idea behind the Viticulture Certificate Program is to provide participants with a solid background in grape growing along with more comprehensive horticulture knowledge.

“The program is a two-tier professional certification in which the basic level provides college training in the fundamentals of horticultural science, plus applied training in viticulture and related techniques through OSU Cooperative Extension,” Stafne said.

Participants will be given two years to complete the basic level of the program, which includes 12 total knowledge units. These units can be completed with a combination of a horticulture science class and required viticulture emphasis courses offered through the OSU Cooperative Extension Service. Participants also must attend the Oklahoma Grape Growers and Wine Makers Association Annual Conference or the Oklahoma-Arkansas Horticulture Industries Show.

Dr. Dale Maronek, Department Head of Horticulture and Landscape Architecture, indicated, “We are excited about this program and the opportunity it provides for those interested in learning more about horticulture and elements of viticulture. This program has been the result of a lot of people willing to participate and support this certificate program. Faculty from various department at OSU- Stillwater and Oklahoma City have worked hard to develop this program. Dr. Stafne and Dr. Brian Kahn, our department’s Undergraduate Coordinator, have worked closely with their colleagues to develop this program. A special thanks goes out to Dr. Doug Needham for his willingness to offer our Introductory Horticulture course via distance education. People can get horticulture information and college credit without leaving their work place.”

Class and workshop topics include vine training and pruning, basic wine analysis, non-meat HACCP training, small fruit management, vineyard weed control, winery sanitation, and introduction to interspecific hybrid grapes. In addition, the basic level also includes Certified Pesticide Applicator training.

Stafne said the second tier of the program involves 16 total knowledge units of advanced level core courses which must be completed in three years.

“The second tier, or the advanced level, provides additional college training in horticulture science and related disciplines, along with further applied training through the Cooperative Extension Service. Some of the courses in the second level provide more in-depth coverage of areas important for understanding horticultural as a discipline,” he said. “The second tier has OSU horticulture courses as well as Cooperative Extension workshops and meetings that cover grape growing and wine making topics.”

The second tier also includes some Certified Pest Applicator training. There is a one-time \$25 registration fee that OSU will collect at the time of enrollment in the program. Any additional fees for courses, workshops, conferences, pesticide applicator testing, or other related expenses will be paid directly by the participants to the appropriate entities.

“Enrollment in this program will give Oklahoma grape growers more of a well-rounded education,” Stafne said. “Also, this is a way to infuse people into the grape growing industry. Some of the courses that participants take as part of this program will be counted toward a degree should they want to enroll at OSU and major in horticulture.”

For more information or to enroll in the Viticulture Certification Program, contact Stephanie Larimer at 405-744-5404.

Temperature Data from Oklahoma Counties and the *Vinifera* Conundrum

Eric T. Stafne

In trying to understand the ability (or inability) of *V. vinifera* to withstand our winters here in Oklahoma, I requested some Mesonet data for all 77 Oklahoma counties. My request was to find any recorded event of -8 F or lower. This temperature, -8 F, was deemed by Dr. Tony Wolf at Virginia Tech to be the point at which significant injury was sustained by vinifera grapes. A site is generally determined to be profitable for *V. vinifera* grapes if -8 F is reached in one year out of 10. It is a break even situation if -8 F happens twice in 10 years. If -8 F is reached three times in 10 years, then the result is an economic loss. So, one would generally prefer to have a site where -8 F is a rare occurrence. And the rarer, the better! Hence, I wanted to see if I could separate out areas of the state that were more prone to these temperatures. It is a work in progress at this point, but I did come upon some very interesting data .

With the data I received, I made three tables. The first table consists of counties that have had a decade that would be considered an economic loss if vinifera grapes are being grown. The second table has counties that have had a breakeven decade, but none with economic loss status. The third table are those counties that have never had a breakeven or economic loss decade since recordings were taken. Washington county is not represented due to missing data, and Major county has little data to assess. The temperature data for some counties reaches back to the 1890s, but others only the mid-1900s. These temperatures may be from a single site or several sites, depending on the county; therefore, are only useful in a broad, macroclimatic sense. These temperatures cannot take into account elevation, slope, aspect, or any other meso- or micro-climatic specifics.

The counties in Table 1 have a greater likelihood of having three in 10 years be wiped out than the other counties since it has already happened. Some, like Pottawatomie County have only had one decade in 12, so that is fairly rare. Other counties have had only one economic loss decade, but when coupled with the breakeven decades the chances of success go down. An example is Adair County that has had only one decade of economic loss in nine, but also has had three decades of breakeven. So, four decades out of nine have been breakeven or economic loss for vinifera grapes — not what I would call a great location to make a consistent, long-term profit. And, of course, there are the pan-handle counties, Cimarron, Texas, and Beaver, that are all at the bottom or near the bottom of this list. I can't imagine a worse county than Cimarron to plant vinifera grapes based on these data!

The second table has the counties that are likely fairly safe for vinifera against mid-winter killing temperatures, even though certainly an entire vineyard could be frozen back to the ground. Canadian County has had three decades in 12 with that possibility. Remember, breakeven is two lost crops in 10 years and this data is only for mid-winter kill, not other factors that could also create crop loss (frost, disease, rain, herbicide drift, etc.).

If we were to conclude that counties that only rarely get below -8 F are most suitable for *V. vinifera* grapes, then the counties in Table 3 would be the best candidates. A caveat is that this list also doesn't cover temperatures just above -8 F that can also be damaging. But, mid-winter killing temperatures are not the biggest problem for us; it is the widely fluctuating temperatures that occur in fall, winter, and spring. As you well know, it can be 75 F one day and 25 F the next without any acclimation period. So, even though this present data doesn't give us the full story, it gives a starting point on how risky it is to grow vinifera grapes in many areas of Oklahoma.

See Table 1 on page 6 and Tables 2 and 3 on page 7.

Table 1. Counties with breakeven and economic loss decades from least likely to most likely for economic loss.

County	Breakeven decades	Economic loss decades	Total decades
Pottawatomie	0	1	12
Sequoyah	1	1	12
Muskogee	1	1	11
Garfield	2	1	12
Noble	2	1	12
Rogers	2	1	11
Mayes	2	1	9
Tulsa	2	1	7
Beckham	3	1	12
Caddo	3	1	12
Kingfisher	3	1	12
Adair	3	1	9
Creek	0	2	12
Nowata	0	2	8
Lincoln	1	2	12
Cherokee	1	2	11
Alfalfa	1	2	10
Payne	2	2	12
Logan	3	2	12
Roger Mills	4	2	11
Delaware	0	3	7
Grant	1	3	12
Blaine	2	3	12
Dewey	2	3	12
Custer	3	3	12
Ellis	3	3	11
Ottawa	3	3	11
Osage	6	3	12
Pawnee	2	4	11
Kay	3	4	12
Craig	2	5	12
Beaver	3	5	12
Woodward	4	5	12
Harper	2	6	10
Woods	3	6	12
Texas	2	7	12
Cimarron	1	10	11

Table 2. Counties with breakeven economic potential and no recorded decades of potential economic loss from least likely to most likely.

County	Breakeven decades	Total decades	Country	Breakeven decades	Total decades
Garvin	1	12	Harmon	1	9
McClain	1	12	Major	1	2
Hughes	1	11	Comanche	2	12
Jackson	1	11	Wagoner	2	12
Jefferson	1	11	Grady	2	11
McIntosh	1	10	Kiowa	2	11
Okmulgee	1	10	LeFlore	2	10
Greer	1	9	Canadian	3	12

Table 3. Counties with no reported decades that have reached the breakeven or economic loss threshold of 2 or more incidences of -8F by number of single reports of -8 F from least likely to most likely.

County	Number of decades with -8 F reports	Total decades
Bryan	1	12
Coal	1	12
Choctaw	1	9
Atoka	1	8
Love	1	7
Marshall	1	7
McCurtain	2	12
Johnston	2	11
Pontotoc	2	11
Pittsburg	3	12
Cotton	3	11
Stephens	3	11
Haskell	3	5
Okfuskee	4	10
Murray	4	9
Pushmataha	4	9
Seminole	4	8
Carter	5	12
Cleveland	5	12
Oklahoma	5	12
Washita	5	12
Latimer	5	11
Tillman	5	11

**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.

Stages of Dormancy concluded

Table 2. Number of freeze events below 0 °F at nine locations within Oklahoma for the months December-February from 1950-2005 when mid-winter hardiness occurs.

Location	Total Freeze events	Average/Year
Boise City	157	3
Buffalo	115	2
Pawhuska	89	2
Chandler	38	<1
Webbers Falls	35	<1
Enid	34	<1
Hobart	23	<1
Durant	13	<1
Ardmore	5	<1

Table 3. Number of freeze events below 28 °F at nine locations within Oklahoma for the months March-May from 1950-2005 when deacclimation occurs.

Location	Total Freeze Events	Average Year
Boise City	969	18
Buffalo	597	11
Pawhuska	483	9
Enid	375	7
Hobart	323	6
Webbers Falls	308	6
Chandler	269	5
Durant	162	3
Ardmore	125	2