Oklahoma State University and Oklahoma Cooperative Extension Service

Le Vigneron

A newsletter for the grape growers and wine makers of Oklahoma

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Co-editors:

- Eric T. Stafne
- William McGlynn

Inside this issue:

I'm Not Liking What I See...

Walking through the Perkins vineyard this late winter and early spring I saw several varieties with a crusted exudate stuck to the vine. When I snapped it off, I was not surprised to see a hole where an insect had bored into the vine. Is this unusual? Unfortunately, no, at least here in Oklahoma. This borer is the grape cane borer (also called the apple twig borer). It is drawn to stressed and damaged vines. I suspect their infestation is primarily due to the Easter 2007 freeze event. Vines are still in various stages of recovery. Even though some varieties such as Cynthiana showed no outward injury or damage effects from that freeze, I have still seen some holes in those vines. Control is not the easiest on these critters because you must get them before they bore into the vine and protect themselves from spray contact. Timing for control is in the fall and the time just prior to budbreak. Probably the best chemical is Imidan, but there may be others as well. Read and follow the label before applying. Another thing I don't like is the weather. Late March and early April into the 20's? Hmm, doesn't sound like good news for Chardonnay, Marechal Foch, Chardonel, or any of the other early budbreak varieties. Depending on just how cold it gets, we may have a flashback to 2007. Although not as developmentally advanced, many vines are still trying to recover. If we receive cold enough temperatures we might expect serious injury to aboveground portions of the vine. Ahh, just another growing season in Oklahoma.

2009 OSU Grape Management Short Course Update

Eric T. Stafne

The 2009 GMSC got off to a rousing start — we have 49 folks signed up to learn about viticulture in Oklahoma. Years ago when this course started it was thought that it would last a couple years at most. Well, 10 years later, here we are. All attendees received the Pocket Guide (see page 3 for more info) and thus I have none left. The first class we did a lot of presentations and demonstrated pruning. Seems like a very curious class as lots of questions were asked and answered. Anyway, the next one is just a couple weeks away now — they seem to just jump up on me these days.

Some Predicted Budbreak Dates at Perkins Vineyard

Eric T. Stafne

Based on the equations I presented last time here are the predicted 50% budbreak (EL 5) dates for some varieties grown at Perkins (these will vary from other locations due to different temperature inputs):

Chardonnay = March 25

Sangiovese = April 2

Vigonier = April 3

Cabernet Franc = April 3

Merlot = April 3

Shiraz = April 4

Malbec = April 4

Pinot Gris = April 4

Petit Verdot = April 6

Ruby Cabernet = April 6

Cynthiana = April 10

Cabernet Sauvignon = April 11

The Technical Tipple

William McGlynn

Welcome one and all to *Le Vigneron's* inaugural edition of The Technical Tipple. The goal of this hopefully ongoing column is to introduce some interesting and potentially useful grapes and wines to our audience, with an eye toward identifying grapes that may grow well and do well for our industry here in Oklahoma. We'll be offering up both objective and subjective analyses of the wines sampled in hopes of helping to illustrate the myriad ways in which subjective impressions are linked to basic wine chemistry. So with no further ado, let us dive into today's wine under the scope: a 2006 Grenache from the Barossa Valley in Australia. Your humble scrivener would give you the brand name, but that would be in violation of our Extension mandate. Thus, in this column as in the future, brand names will be withheld to protect the innocent, or possibly the guilty.

Grenache is a classic vinifera grape that is thought to be native to Spain, where it is the most popular cultivar grown. But is best known in the U.S. as a foundational blending grape for many of the famous estate wines from the Rhone valley in France. One occasionally sees it marketed as a varietal, but it's more often used in blends. The grape is widely grown in California and Australia for this purpose. The vines are known to tolerate heat and drought well, but do not like cold, damp weather. It typically sets tight clusters that can be prone to bunch rot. Grenache produces grapes that are high in sugar and relatively low in tannins, acid, and pigments. On to the testing.Following are the objective test results we obtained:

<u>2006 Australian Grenache</u>

pH: 3.45; Titratable acidity: 5.6 g/L as tartaric; Free SO_2: 35 ppm; Residual sugar: ~0.1 %; Alcohol: 15.3% (Labeled as 14.5%)

Looking at the above results, we might note that the titratable acidity is in the lower range of what we might expect from a dry red wine and the pH is in the upper range. This fits well with the known characteristics of the Grenache grape. The residual sugar is about at the level one would expect from a dry red wine while the free SO_2 level is 35 PPM. Given the wine's pH, that level of free SO_2 should translate to a molecular SO_2 concentration of about 0.7% -- that's above the standard recommended baseline of 0.6% and should be sufficient to provide adequate protection against bacterial growth and oxidation, particularly given the relatively high alcohol content. Overall the fundamental chemistry looks rather sound to the Technical Tippler. Now for the subjective impressions:

The clarity was good, with just a hint of turbidity. The color was mostly ruby red, medium in intensity, with just a hint of brick red to betray the grape's propensity to oxidation and a short bottle life. The legs were fairly pronounced, as one might expect given the alcohol content. The first impression of the aroma was of intense fruit, with distinct notes of cherry, strawberry, and raspberry. Under that were impressions of herbal aromas; tobacco, olive, and eucalyptus were present. There were also significant spice aromas in the glass, particularly clove and licorice. Taken together, the aromas were fairly complex and pleasant. There was a hint of oak, perhaps, but it was very light. Your Technical Tippler was looking forward to a refreshing taste experience.

The Technical Tipple, cont.

William McGlynn

Unfortunately, the flavors didn't quite match the complexity of the aromas. The body was medium light and the balance between sugar and acid was good. There was more of an impression of sweetness than might be expected from the residual sugar concentration. The fruity notes and the abundance of alcohol probably contributed to that. There was also a hint of sherry, again as one might expect from a relatively unstable grape. The herbal and spice notes were more pronounced on the tongue than in the nose, with definite flavors of bell peppers and black pepper coming forward. But overall the flavors were markedly less intense than the aromas. The final verdict: This Grenache is a pleasant if not especially memorable. Above all, perhaps, it's testimony to what can be accomplished with good fundamental chemistry and an absence of obvious defects. This wine would be well-served with a hearty, but not too spicy meal. After evaluating the wine, this correspondent can see why a Grenache is typically drunk when fairly young and most often used for blending. Being a warmth-loving vinifera, it's clearly not a suitable grape for growing throughout Oklahoma. And it may not always make an especially strong varietal wine. But it might well serve as a good addition to chateau blends, adding a bit of fruit and sweetness and serving to mellow stronger and more temperamental wines. The Technical Tippler can see it blending well with a Chambourcin, for example, or even mixing with a sweeter white to make an interesting rosé.

The Technical Tippler's ranking of a 2006 Australian Grenache: 6 and ½ out of ten flasks.

The Technical Tippler welcomes suggestions for wines to evaluate and evaluations to conduct! Feel free to email suggestions to william.mcglynn@okstate.edu and he will pass them along.

Correction to Article in Last Issue

Eric T. Stafne

I made a mistake in writing the budbreak prediction article in the last newsletter. The mistake has already been corrected online, but I wanted to put it here as well so that any of you who are interested can make the adjustment. In fact, the correction makes the calculation easier. So, here is the necessary correction: Instead of adding all the average temperatures from December and March 1-15 together and dividing by 46, the thing to do is to take the average overall temperature from December plus the average overall temperature from March 1-15 and divide by 2. This weights the March temperatures more, as they have more influence on budbreak than do the December temperatures. I calculated the budbreak for 'Chardonnay' at Perkins and was surprised at what I found — the result indicated that we will have an average budbreak time of around March 25. I sure thought it would be earlier (and we shall still see as the days continue to heat up).

OGGWMA Grape Blog

Eric T. Stafne

In March I started writing a blog for the Oklahoma Grape Growers and Wine Makers Association. If you are a member of the organization you can receive access to the blog. True to the nature of a blog, I just hit on topics that come to my head in that moment that I am sitting in front of the computer. I try to make it timely and interesting. There is a function for leaving a comment and this could make for some interesting dialogue. I look forward to your feedback if you do happen to read it. So far, I have tried to blog everyday that I can; although some days I am out of the office and can't do it. The topics are viticulture related, no enology here, as there is also an enology blog that should be up and running in the near future.

Viticulture Education Program for Grape Growers Administered by OSU

Eric T. Stafne

Viticulture Education Program

The 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 me, visit the website (http://www.hortla.okstate.edu/grapes/viticulture_education_program.html) or write to:

Viticulture Education Program

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Inside the Life of an OSU Extension Specialist

Eric T. Stafne

This is the third and final installment in the series about universities and how they operate. Hopefully you have gained a little more understanding of how things work with Land-Grant schools and the Cooperative Extension Service. This time around I'd like to make it more personal and shine the light on me. Not because I think I deserve to be spotlighted, but just so I can serve as an example. My job is not only to be a grape specialist, but a pecan specialist, peach specialist, blackberry specialist, kiwifruit specialist, pistachio specialist, and on and on. You get the idea. No matter what common (or sometime very uncommon) fruit or nut crop someone wants to try in Oklahoma, I'm expected to be the expert in that crop. My job description says that I am supposed to focus my research on grapes with pecans and peaches as secondary crops and spread my extension responsibilities around to everything else. In practice I have more flexibility than that. I can direct my program where I perceive the greatest need as long as I can justify it.

Most of the growers I interact with don't have any idea of what I do other than I answer their questions over the phone, email, or in a site visit. I often show up in a late model pickup truck and they probably think right off how wealthy Oklahoma State University must be if it can afford to give all of their employees a vehicle to drive around.

Well, not quite.

When it comes to the vehicle, I am charged per mile driven, upward of 50 cents per mile. I also share that vehicle with about 6 other people. I am also charged the use of the phone in my office and anything else that costs money like computers, books, and even the publications that go out to the public. So, nothing is free and it must be paid for by someone – usually me. Okay, but how do I pay for it because I don't want it coming out of my personal funds? My job is split between research (25%) and extension (75%); therefore I receive some funding from the Oklahoma Agricultural Experiment Station (OAES) and the Oklahoma Cooperative Extension Service (OCES). That sounds pretty good; money from two different sources, right? But, the amount I receive isn't what you might expect. I don't want to give out exact figures, but my yearly phone bill alone would eat up at least half of the research funds I am allotted from OAES. The funds I receive for extension do a passable job for my travel, but to fund a research program is more difficult and research is king at a research-driven university. So, drumming up funds by any (legal) means necessary is a way of life for any professor let alone an assistant professor trying to achieve tenure.

Extension Specialist continued

Oklahoma State University is a tenure-granting university and I have a tenure-track position. Tenure is just a form of granting intellectual freedom to the faculty member. Once a faculty member is granted tenure, he or she can't be dismissed (theoretically) because they have controversial or unconventional views and opinions that perhaps the university administration doesn't agree with. However, it doesn't mean that someone has a "lifetime" job. Periodic reviews are required for all faculty members and some level of expected performance is necessary for continued employment. In the first three years, a faculty member is evaluated for certain traits such as ability to set up a research (or extension or teaching) program, publish papers, and compete for grant funds. If after three years the faculty member displays a propensity to accomplish these tasks he/she will be "re-appointed" and continue on toward the tenure process. After six years the faculty member will then be scrutinized more carefully to ensure that the department and university are comfortable with establishing a long-term relationship with the individual. If the decision is yes, then tenure is granted and the faculty member is promoted from assistant professor to associate professor. If the decision is no, the faculty member has one year to find another position and leave the university.

Once promoted to associate professor, the faculty member will likely be given more responsibilities within the university (serve on committees and such) and also outside the university in professional societies (serve on more committees). These committees take up a good deal of time and effort, but when it comes to being promoted all of that is just one part of the package. Often the most important factors are being able to publish work in refereed, scientific journals and the ability to write successful grants to outside funding agencies. The journal articles establish your credibility in being able to create an experiment, carry through on the work, and then publish it for the entire scientific community to evaluate. These articles go through a rigorous process of review before they are accepted to be published. Journal articles take up a lot of time and energy to produce. The whole process can takes many years from designing the experiment to publishing the work.

Grant proposals are something different; they are a necessary evil in today's academic climate. Either one brings in money to fund a program or one must rely on the dwindling funds that come from the experiment station or extension service, and as I mentioned earlier, those don't add up to much. The cold, hard fact is if you can't attract money with your program, what benefit are you providing the university and the people of the state? At least some individuals hold that viewpoint, anyway.

Integrated Disease Management for the Pruning Season

Damon L. Smith

In the first issue of 2008 (Vol. 3 Issue 1), you might remember that I wrote about general grape disease management and I spent a lot of time on the plant disease triangle concept. During that discussion I talked about the components of the triangle (pathogen, host, and environment) and how these components can be manipulated to break the triangle and disrupt the plant disease process. So why am I reminding you of this now? The pruning season is a great time to focus on the pathogen component of the plant disease triangle. Many of the pertinent pathogens (especially the black rot fungus) that infect grape produce structures that allow the organism to "overwinter". Many of those structures are harbored on the grape vine in the growth that was produced in the previous year. By removing those fungal structures, you can reduce the amount of available propagules that can produce new infections in the subsequent season. The act of pruning the grape plant not only balances fruit load and quality, but is also a great way to reduce available pathogen propagules.

Remember, that coupled with the pruning process is sanitation. Pruning material must be removed from the vineyard and destroyed, if possible. If the material pruned from the vines is left in the vineyard, then you haven't really removed the pathogen that is dormant in that material, you just relocated it from the vineyard canopy to the vineyard floor. Burning is the best way to destroy this material, but with the recent drought conditions and subsequent burn bans in Oklahoma, this can be a problem. Burying the material also works for reducing pathogen propagule numbers. However, insect pests that may be in the material could emerge even if buried, and move to the vineyard.

While pruning, don't forget to remove "mummies" from the plant canopy. Mummies are the old, shrunken, raisin-like remnants of fruit that are often left hanging in the trellis. Mummies are also a great source of fungal propagules for the next season. Care should be taken to remove mummies from the trellis, and if possible from the vineyard. Studies in New York have shown that leaving mummies to hang in the trellis increased risk of black rot by 20 to 100%. While removing and destroying or burying mummies was found to be the best method of control, the New York researchers found that simply dropping mummies from the trellis to the vineyard floor was sufficient enough to significantly reduce the levels of black rot.

While many don't think about it at this point, now is the time to start planning your fungicide program. Waiting until there is a problem is the wrong strategy when managing plant diseases. Having some knowledge of the common disease that occur in your vineyard and when they occur is important. Keep good records as these will be invaluable for future decision-making, such as fungicide purchases and timing of preventative applications of fungicide. Remember that the most critical time to control many diseases (including black rot) of grape is during the pre-bloom to bloom period. Once the fruit are infected by a pathogen it is too late to manage the disease for that cropping season. Related to this, I hear many folks talk about fungicides being classified as systemic and having "curative" effects while contact fungicide are protectant only. This is partially true, however, understanding fungicide mobility and how various fungicides are classified based on mobility is important when making decisions pertaining to fungicide application timing and making the proper choice of compound for the problem of concern.

Fungicides can be classified into two basic mobility groups: contact or penetrant. No matter what type of mobility a fungicide has, no fungicide will be effective after the development of visible disease symptoms and spores are produced. Fungicides can slow or stop the formation of new symptoms if applied in a timely fashion, but fungicides will not 'heal' existing disease symptoms. Therefore, understanding fungicide mobility, fungicide mode of action, and the biology of the target pathogen are important so that timely fungicide applications can be performed before the disease is established.

Contact fungicides are applied to the surface of a plant and will remain where they are applied. There is no movement of the fungicide into, or across the plant surface. These fungicides are prone to being washed off the plant and must be re-applied to parts of the plant that grow after the fungicide application. Contact fungicide typically prevent fungal propagules (e.g. spore) germination, therefore they must be applied prior to infection and have no effect once the infection takes place.

Disease Management Continued

Penetrant fungicides are absorbed into the plant tissue. Because these fungicides are absorbed into plant tissue to some degree, then all penetrant fungicides are considered systemic fungicides. Penetrant fungicides have different degrees of systemic capability. Some fungicides are only *locally systemic*, and after initial contact with the plant material, move very little into the plant tissue. Second, *tranlaminar fungicides* are absorbed into the leaf and move through the leaf to the opposite surface. Tranlaminar fungicides are not transported throughout the plant. Other fungicides can be *xylem-mobile* in which they will be absorbed into the plant and moved upward from the point of entry via the plant's xylem. Finally, *true systemic* fungicides move throughout the plant through the xylem and phloem elements (very few fungicides have this capability). Regardless of the type of systemic fungicide, these compounds have limited "curative" capability. They can only stop or slow infections within the first 48-72 hours of fungal exposure. Therefore, penetrant (systemic) fungicides must be applied shortly after infection and are ineffective once the fungus begins producing spores.

As a vineyard manager, you should also consider fungicide resistance when developing a fungicide program. Resistance is a genetic adjustment by a fungus that results in reduced sensitivity to a fungicide. Reduced sensitivity is thought to be a result of genetic mutations which occur at low frequencies (one in a million or less) or of naturally occurring sub-populations of resistant individuals. The resistance trait may result from single gene or multiple gene mutations. Single-gene mutations that confer resistance to site-specific fungicides are more likely to develop than the simultaneous occurrence of mutations in multiple genes needed to confer resistance to multi-site inhibiting fungicides.

Resistance in a population becomes important when the frequency of resistant strains builds up to dominate the population. The build-up of resistant strains is caused by repeated use of the fungicide which exerts selection pressure on the population. The fungicide selectively inhibits sensitive strains, but allows the increase of resistant strains. This shift toward resistance occurs at different rates depending on the number of genes conferring resistance. When single gene mutations confer resistance, a rapid shift toward resistance may occur, leading to a population that is predominantly resistant and where control is abruptly lost. When multiple genes are involved, the shift toward resistance progresses slowly, leading to a reduced sensitivity of the entire population.

Fungicides are grouped by similarities in chemical structure and mode of action. Site-specific fungicides disrupt single metabolic processes or structural sites of the target fungus. These include cell division, sterol synthesis, or nucleic acid (DNA and or RNA) synthesis. The activity of site-specific fungicides may be reduced by single or multiple-gene mutations in the fungus. The benzimidazole and strobilurin groups are subject to single-gene resistance and carry a high risk of resistance problems. Other fungicide groups with site-specific modes of action include dicarboximides and sterol demethylation inhibitors (DMIs), but resistance to these fungicides appears to involve slower shifts toward insensitivity because of multiple-gene involvement. Many of the site-specific fungicides also have systemic mobility. However, systemic mobility is not a prerequisite for resistance problems. Resistance problems have developed in the dicarboximide group which have, primarily, contact mobility.

Multi-site fungicides interfere with many metabolic processes of the fungus. Once taken up by fungal cells, multisite inhibitors act on processes such as general enzyme activity that disrupt numerous cell functions. Numerous mutations affecting many sites in the fungus would be necessary for resistance to develop. Typically these fungicides inhibit spore germination and must be applied before infection occurs. Multi-site fungicides form a chemical barrier between the plant and fungus. The risk of resistance to these fungicides is low.

There are two codes currently used to classify fungicides by mode of action (see table below). The mode of action group (A, B, etc.) refers to the general target site such as nucleic acid synthesis, cell wall synthesis, respiration, etc. Sub-groups (A1, A2, etc.) within a mode of action group refer to specific biochemical target sites of fungicide activity. The FRAC (Fungicide Resistance Action Committee) code is used on fungicide label registrations. The FRAC code refers to fungicides that have same site-specific mode of action and share the same resistance problems across members of the group (cross-resistance). FRAC groups are currently numbered from 1 to 43 in order of their introduction to the marketplace. In the table below, are presented many of the common fungicides used on grapes in the United States, and their properties.

Some fungicides registered for use on grapes in the United States grouped by mode of action and relative risk for developing resistance problems.

Mode of action	Group [1]	Group name	Common name	Trade names for Grapes	Mobility [2]	Risk [3]	Target Disease [4]
Nucleic acid synthesis	A1 (4)	Phenylamide	mefenoxam	Ridomil Gold Copper	S	H	Downy Mildew
Mitosis and cell division	B1 (1)	Benzimidazole	thiophanate-methyl	Topsin M	S	H	Botrytis bunch rot
Respiration	C2 (7)	Carboxamide	boscalid	Endura, Pristine[5] (+ pyraclostrobin)	S	M	Black rot, Phomopsis cane and leaf spot, Powdery mildew, Downy mildew
	C3 (11)	Strobilurin (Quinone outside Inhibitor (QoI))	azoxystrobin	Abound	S	H	Black rot, Phomopsis cane and leaf spot, Powdery mildew, Downy mildew
			kresoxim-methyl	Sovran	S	H	Black rot, Phomopsis cane and leaf spot, Powdery mildew, Downy mildew
			pyraclostrobin	Pristine (+ boscalid)	S	H	Black rot, Phomopsis cane and leaf spot, Powdery mildew, Downy mildew
			trifloxystrobin	Flint[5]	S	H	Black rot, Phomopsis cane and leaf spot, Powdery mildew, Downy mildew
Amino acids and proteins	D1 (9)	Anilino-Pyrimidine	cyprodinil	Vanguard	S	M	Botrytis bunch rot
			pyrimethanil	Scala	S	M	Botrytis bunch rot
Signaling	E1 (13)	Quinoline	quinoxyfen	Quintec	C	M	Powdery mildew
Lipids and membranes	F1 (2)	Dicarboximide	iprodione	Rovral, Iprodione	C	M-H	Botrytis bunch rot
Sterol synthesis	G1 (3)	Demethylation Inhibitor (DMI)	fenarimol	Vintage	S	M	Powdery mildew
			myclobutanil	Nova, Rally, Eagle	S	M	Black rot, Phomopsis cane and leaf spot, Powdery mildew, Downy mildew
			tebuconazole	Elite	S	M	Black rot, Phomopsis cane and leaf spot, Powdery mildew, Downy mildew
			fenhexamid	Elevate	C	L-M	Botrytis bunch rot, Powdery mildew

			cymoxanil	Tanos (+ famoxadone)	S	M	Downy mildew
Cell wall synthesis	H4 (19)	Polyoxins	phosphorous acid	Fungi-Phite	S	L	Downy mildew, Powdery mildew
Unknown	U1 (27)	Cyanoacetamide-oxime	copper salts	Kocide, Cuprofix	C	L	Black rot, Downy mildew, Phomopsis cane and leaf spot, Powdery mildew
	U2 (33)	Phosphonate	Sulfur[6]	Sulfur, Kumulus	C	L	Powdery mildew, Phomopsis can and leaf spot
			mancozeb	Dithane	C	L	Black rot, Downy mildew, Phomopsis cane and leaf spot
Multi-site activity			ziram	Ziram	C	L	Black rot, Downy mildew, Phomopsis cane and leaf spot
			captan	Captan	C	L	Black rot, Downy mildew, Phomopsis cane and leaf spot

[1] Subgroups represent specific target sites within a mode of action, cross-resistance may occur within subgroups, Fungicide Resistance Action Committee (FRAC) group is in parenthesis. FRAC code is based on time of product registration and potential for cross-resistance within subgroups.

[2] C=Contact, S=systemic or penetrant.

[3] The resistance risk is assigned based on the worst case-scenario. For example, dicarboximide resistance is serious for some Botrytis diseases, but resistance problems have not developed with other uses.

[4] Be sure to read the label for each fungicide you use. Be sure the target disease is listed, as diseases are added and removed from labels frequently. Not all fungicides can be applied throughout the season, be sure you are applying them at the correct time according to the label.

[5] Do not apply Flint or Pristine to American-type grapes (ex. Concord) as injury may occur.

[6] Some American-type grape varieties are sensitive to sulfur. Avoid applying sulfur when temperatures exceed 85°F as damage to the plant may occur. Sulfur looses efficacy for powdery mildew control when temperatures are below 65°F.

Cultivar Spotlight: 'Traminette'

Eric T. Stafne

'Traminette', in my opinion, is a cultivar to get excited about. Of course, I am a big fan of 'Gewurztraminer' wine and this grape makes a wine very similar. In fact, some of the 'Traminette' wines I have tasted are better than 'Gewurztraminer' (heresy, I know). The grape was bred at Cornell University and released in the 1990s. It is derived from a J.S. 23-416 x 'Gewurztraminer' cross. This cultivar has good disease resistance and good cold hardiness, which makes it much more attractive for Oklahoma growing conditions. It is starting to catch on in Missouri and other states (even Nebraska) and I think can make a big impact here in Oklahoma. Clusters are often quite large with really good yields as well. Often made in a semi-sweet style it appeals to many types of wine drinkers. I know that some folks don't necessarily care for the "spiciness" of 'Gewurztraminer', but most will love it. 'Traminette' is currently being grow in the northeast part of Oklahoma and slowly expanding out through the remainder of the state. If you are considering an interspecific hybrid winegrape then look no further — start with 'Traminette'.

Viticulture & Enology
OKLAHOMA STATE UNIVERSITY

OKLAHOMA STATE UNIVERSITY AND OKLAHOMA COOPERATIVE EXTENSION SERVICE

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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.

Extension Specialist continued

In 2008, I was involved in seven grant proposals of which I wrote (or co-wrote) four. I also wrote five abstracts and one refereed paper that were published in refereed journals. On top of that I wrote 36 newsletter articles and 14 more papers for extension and public audiences. I served as a reviewer for journal articles, served my home professional society (The American Society for Horticultural Science, www.ashs.org) on committees, also served on state organization committees (Oklahoma Pecan Growers Association and the Oklahoma-Arkansas Horticulture Industries Show), among other activities. Frankly, I can't recall how many calls and emails I fielded or how many site visits I made. It all becomes a blur after awhile. But these are the expectations of the university administration. In fact, they will probably say I need to do more – write more grants, write more papers, do more presentations, and overall just do more of everything. I'm sure if I received a grant for one million dollars they would say to bring in two million next year. I understand how the game is played and I'm a willing participant. I hope that I have outlined a few things in the last couple of articles that maybe has opened your eyes to what goes on at a university. The more you understand about what we do, the better we can work together. And remember that nothing is forever. Just because Oklahoma has a fruit crop specialist today doesn't mean that position will always be there. The voice of your industry plays an especially important role in the fate of our jobs, so let it be heard. Serve as a cooperating site for an experiment; provide funding for research, extension, and teaching programs that pertain to your crop; contact the Department Head and Dean of the college in which your specialist works. Let them know that you appreciate the work they are doing and what impact it has had on your operation. As always, I look forward to any feedback you might have on these three articles I wrote and I hope they were beneficial to you.