

Wines from Barrel to Bottle

(Eighth in a series of highly opinionated articles about grapes and wine in El Dorado County)

Wines are usually matured in tanks or barrels until they have reached the winemaker's standard of maturity (or until he has run out of wine or money). Besides periodic "rackings," where the wine is siphoned or pumped out of the container to separate it from the sediment that gradually appears, there are a few other things that require the attention of the kindly enologist (winemakers like to apply this term to themselves because it's obscure and makes them feel more "professional").

Danger! More Chemistry!

Some chemical properties of the wine need to be measured occasionally, and are of immense interest to chemists and almost no one else, unless they aren't right and the wine turns out unpleasant. The amount of acid present is important both for taste and for longevity, and because it can change during storage, it needs to be measured periodically. The total amount of acid, called T.A. (pronounced "tee-ay") is determined by a process known as titration, and pH is measured with (surprise) a pH meter. Each of these tells part of the story about the acids in the wine, and both need to be measured, and sometimes adjusted, to be sure the wine will live a long, healthy life. We'd like to think that these measurements are very sophisticated and scientific, but virtually identical tests are done routinely by anyone who has a swimming pool or hot tub.

A preservative called "sulfites" is present in almost every wine (even wines made by strict organic processes contain some natural sulfites from the fermentation process, but are not allowed to have additional sulfite added). The amount required depends on several factors, but too little can allow the wine to spoil while too much will make the wine smell like brimstone and pose a danger to people with sulfite sensitivity. While it's true that sulfites are chemical in nature, the good things they do--keeping bacteria low, preventing oxidation, preventing browning of the wines, etc., outweigh the disadvantages of adding additional amounts of what is truly a naturally-occurring substance. The level of sulfites can be easily monitored using a special testing kit available from winemaking suppliers.

Finally, the alcohol content needs to be measured at least once before bottling, to comply with labeling requirements and to avoid surprising the consumer. The device used for this measurement is called an *ebulliometer*, which somehow always sounds to me like a very happy little gadget, but in actuality only

measures the temperature at which the wine boils (with great accuracy) and relates that to the percentage of alcohol present. Wines with less than 14% alcohol need to have the level stated on the label with an accuracy of only plus or minus 1.5%, so a wine labeled as 12.5% could be anywhere from 11.0% to 14.0% and still comply with the law. Above 14%, where the government collects a much higher tax rate from the winery, the allowable error is only plus or minus 1.0%, so a dessert wine labeled as containing 18.5% could vary from 17.5% to 19.5% without getting the winery owner in trouble.

Many other tests can be performed, usually when something bad has happened, but these are generally beyond the capability of a small winery and are best done by a testing laboratory (such as Vinquiry in Healdsburg at (707) 433-8869).

Blending Wines

Many years, a single grape variety or single batch of wine may have several wonderful traits and perhaps a shortcoming or two. In that case, the winemaker's skill and experience are truly of value, since blending of wines is almost always done by taste rather than by any scientific process. Surprisingly, studies have shown that in most cases both novice and experienced tasters will prefer a blend of two wines to either of the two wines separately. The reasons are principally that blended wines will be more complex, that is, have a greater range of flavors, and that any defects in the individual wines will be diluted by the blending process. Some marriages seem to have been made in Wine Heaven: zinfandel with a little petite sirah for color and spice; the traditional Bordeaux varieties of cabernet sauvignon, cabernet franc and merlot; the Rhône mixtures of syrah, mourvèdre, grenache, and others. Sometimes, though, you just have to throw out tradition and try some unconventional combinations.

Re-finishing

Young red wines are frequently (especially from some of our Foothill vineyards) blessed with an overabundance of tannin, making them astringent, bitter, and harsh. Tannins got their name from the fact that they "tan" leather or convert raw animal hide to a strong and durable structure. They do this by reacting with the proteins in the skin (chemists call it cross-linking) to make the leather stronger. The same process is done in reverse in winemaking by adding egg whites (primarily a protein called albumen) to the red wine. The egg white reacts with the tannin, and drops out of solution to the bottom of the tank or barrel. An additional racking separates the clean and, hopefully, smoother wine from the sediment. To maintain the mystery of winemaking, the term "fining" has been applied to this process. To be effective, it should be done as early in the life of a red wine as possible, but always within the first year.

The Final Clean-up

Generally, the last process to be applied to wines before bottling is filtration. This is nothing more sophisticated than passing the wine through a big coffee filter to take out any small particles that might make the wine hazy or dull in appearance (it is especially important after a wine has been “egg-white fined,” since not all the little particles volunteer to drop to the bottom). The wine is pumped, under pressure, through a series of increasingly fine filters, often ending up with a filter with pores small enough to remove any yeast or bacteria present in the wine (about 0.4 microns if you’re measuring).

This process is not without its hazards. There is always a little color and flavor removed from the wine with the particles, and the wine is exposed to a fair amount of air, sometimes more than it had gotten during its long sleep in the barrel. This exposure to air, combined with the bottling process, leads to a condition known as “bottle shock.” Right after bottling, the wine will lose some of its freshness and much of its aroma, but as the extra oxygen is gradually assimilated, it will be restored to its pre-filtration glory within a few months. Whether that happens at the winery before the wine is sold depends either on the public’s willingness to trade availability (and low price) for ultimate quality, or the winery owner’s need to postpone insolvency.