White Wines—"The Delicate Ones"

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

Red wines are robust, tough and macho creatures. They're protected from the cruel world by the tannins extracted from their grapes' skins and seeds during fermentation, and will recover from most episodes of neglect or even outright abuse in the barrel. White wines (and blush wines, which are nothing more than white wines with a little stage makeup), however, are much more easily bruised during storage and handling. Most of what follows is directed to white wines, but the cautions about full containers and bottle storage apply equally to reds.

Thin Air

As paradoxical as it sounds, air is wine's greatest friend and worst enemy. A small amount, added gradually through the pores of an oak barrel, contributes to maturing and development of the wine's complex flavors. A little too much at one time can permanently damage ("oxidize") the wine. What does it mean when a wine is oxidized? While there are a lot of chemical ways of describing an oxidized wine, the real impact is on taste. A wine that's seen too much air will taste "metallic," "tired" or, in the extreme, sour and vinegary. If you're not sure what an oxidized wine tastes like, leave a partial bottle sitting out and taste it each day. You will reach a point where you clearly know the taste of oxidized wine.

It's also true that oxidation is the number one flaw in wine, both made at home and in commercial wineries. It happens most often because people keep wine in partially full containers, or forget to "top-up" their barrels (replace the wine lost to evaporation, or the "angels' share"), or because they use porous corks instead of rubber stoppers for the fermentation locks ("bubblers") in smaller containers. Even if you are diligent about keeping wine in full containers with non-porous stoppers, wine can still oxidize if it doesn't have enough sulfite present. In an earlier article, we talked about the need to maintain a certain level of sulfites (or, in winemakers' parlance, "SO_2"). The actual amount required depends on several factors, but most wines will be "safe" if you maintain a level of 50 parts per million (milligrams per liter for the purists). This means adding ¼ teaspoon of potassium metabisulfite ("meta") per five gallons of wine after fermentation is over, and adding about half that amount every six months as you rack the wine from one container to another.

The Protein Connection

We mentioned earlier that excess tannins can be removed from red wines by adding a source of protein such as egg whites. Since most red wines are loaded with tannin, there's little chance of having leftover protein in a red wine, unless you overdo the egg-white treatment. But white wines have almost no tannin, and many times the yeast leaves

protein in the wine after fermentation is over (for the biochemists in the audience, these proteins are mostly enzymes), and unless something is done to remove it, the protein will turn to a haze or white filmy sediment in the bottle when it gets a little warm or just sits around for a while. Because warm temperatures speed up of the formation of the haze, white wines with leftover protein are termed "heat-unstable," and they need to be "heat stabilized" by removing the protein.

Rather than reversing the process and adding a little tannin to white wines to remove protein, the preferred treatment is to add a specially-prepared clay called bentonite. The bentonite gathers up all the protein, and if things go right, settles to the bottom of the container after a few days so the clear wine can be *carefully* siphoned off. Be sure to buy the new easy-dispersing versions such as "Vitiben" or "Krystal Klear Kwik;" the old stuff involved hot water, a Waring blender, and considerable profanity.

It's even fairly easy to test for protein stability, either before or after treatment. After the wine has cleared following fermentation, fill a clear bottle (no corks or caps!), put it in a pre-heated oven at 200 degrees for one hour, then remove it with a hot pad and cool it by running water over the bottle for about five minutes. If excess protein was present, you will usually see a definite haze when you hold the bottle up to the sky. Preparing a second bottle that wasn't heated and comparing the two will help you see even a slight haze.

The Chilling Experience

Since grapes contain primarily tartaric acid, wine usually contains a small amount of dissolved potassium bitartrate, which is nothing more than the cream of tartar used in cooking. When a (white) wine is chilled, the bitartrate falls out of solution, and crystals can appear inside the bottle ("Waiter—There's broken glass in my wine!"). The appearance of these natural crystals should not be considered a defect, but we have become used to our beverages being free of even small amounts of solid material.

The solution is easy in principle, but sometimes difficult in practice. Since wines can be chilled severely without damage (unlike heating), all you need to do is to cool the wine down to about 25 degrees Fahrenheit for about a week. In cooler parts of the country, home winemakers have been known to place their five-gallon jugs of wine out in the snow (thanks to the alcohol, wine usually won't freeze until the temperature goes below about ten degrees). Here in California, you'll usually need refrigeration to do the same thing. Many wineries have tanks surrounded by jackets through which a cooled glycol solution can be circulated, and the process is fairly easy.

At home, you'll need your own refrigerator (you can do without the beer for a week, especially in winter), and a nice addition is what's called a "beverage chiller thermostat." Not only will this allow you to get the wine very cold, but during the fall you can set it to 50 degrees for cool fermentation of your prized white wines (but that could mean a whole month without cold beer in warmer weather—check your priorities). Just remember to siphon the wine from the crystals as soon as it's removed from the cold, so the crystals don't start to redissolve as it warms up.

Testing for this “cold stabilization” is easy. You can place a corked bottle of wine in the refrigerator for several weeks (slow method) or place a partially full bottle in the freezer until it just starts to develop ice crystals on top. Any haze or crystals from the potassium bitartrate will be clearly visible.

Storage Problems

You’ve been told dozens of times to store your wine bottles lying down to keep the corks wet, but why does that matter? If the cork dries out, every little change in temperature will cause in increase or decrease in volume (in fact, if you think about it, a wine bottle is a lot like a thermometer—a large volume of liquid below, with a narrow neck above). When the wine expands, air is pushed out of the bottle; when it cools and contracts, extra air is pulled in past the dried cork, and the wine soon tastes like the one you left out to learn how oxidized wine tastes. And this is one problem you can’t blame the winemaker for!