

What Does a Winery do with My Grapes?

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

Winemaking is a fascinating blend of science and art. This article and a few to follow will talk a little about how wine is made and the factors that affect wine quality. There are many ways to classify wine: by color, by country of origin, by sweetness or by grape variety are only a few. For this discussion, let's restrict our choices to white, pink and red, and since El Dorado is primarily red wine country, we'll focus first on the factors that influence red wines.

Red wines are arguably the simplest to make. You crush the grapes (feet are no longer allowed, so today you use a device that separates the berries from the stems while gently breaking the skins), add yeast and allow the fermentation to begin with the pulp, skin, and seeds present. As the fermentation proceeds, the liquid gradually dissolves a number of substances from the solid parts of the grape. The pigments that color red wine come almost exclusively from the skins, while tannins (the things that make young red wine astringent or "puckery") are extracted from the seeds as well as the skins.

Fermentation Short Course

While the chemistry of fermentation is complicated (and fascinating primarily to biochemists), the only important part is that sugar from the grapes is converted to carbon dioxide, which bubbles off into the air, and alcohol, which stays in the liquid to make wine enjoyable. (Normal alcohol yield can be predicted by multiplying the sugar content of the grapes by 55%, so that grapes picked at 24% sugar will generally produce a wine with about 13.5% alcohol.)

After about a week, the fermentation subsides, and the resulting thick soup is "pressed" to separate the liquid wine from the solids. If you were to taste the wine at this point, you would probably be discouraged from ever trying it again. The wine must go through a number of complicated and fairly mysterious changes before it becomes the delightful beverage that lifts our spirits and complements our dinner tables. Fortunately, most of these changes happen without action by the winemaker, who can sit back and gently go broke as the wine matures over the next year or two. All that is really required is to keep the wine in sound barrels, and separate it from the sediment (the "lees") a few times before it's bottled (called "racking"). Many other things *can* be done to the wine, and some can improve a good wine or salvage a marginal one, but winemakers are always looking for too much credit when the wine may have been very good without their intervention.

Vintage Variations

If the process is so simple, then why is there such a variation in wine year to year and winery to winery? Weather is, of course, the biggest single factor--there's no way to make the grapes rich and ripe in a cold year (if you knew it was going to be a bad year,

you could change some practices in the vineyard, but we always hope that each year will warm up before harvest). The list of varying factors is long, though, and includes vine spacing, trellising system, exposure of the land, the “clone” of grapes used (small variations within the same variety that have different growing or bearing tendencies), the soil, the amount and timing of irrigation, and other things we don’t yet understand.

The oldest cliché about winemaking is that great wines are made in the vineyard. We dwelt at length in the previous article on vineyard yield, and with good cause--you get a certain amount of flavor out of a given patch of ground or group of vines, and each year you can decide how many grapes to spread it over. If you limit the number of grapes by restrictive pruning, removing excess grape clusters in early summer, or best of all, by gathering grapes from very old vines whose vigor has declined to the point that few clusters are formed, you will almost always produce a better tasting wine. (How many readers can recall the legendary Zinfandels Granite Springs produced from the 90-year-old vines of the Higgins Ranch?)

Extracting the Essence

Some of the differences are subtle, but some will be very obvious. Wine experts talk about “extract,” which refers to how concentrated the wine is. Even though wine without residual sugar is about 98% water and alcohol, if you were to evaporate all the liquid from both a robust and a wimpy wine, you would find that the full-bodied wine would have significantly more solid material left after evaporation. One way to think of it is that if you were to dilute the robust wine with a mixture of water and alcohol, eventually you would wind up with a wine like the thin one.

Certainly, there are choices the winemaker can make that will influence the degree of concentration of the wine. Picking the grapes later will usually intensify the flavors, but at the risk of higher alcohol. Not only does that cost the winery in higher taxes, but too much of a good thing can make the wine “hot” or overly alcoholic. Most of the time, grapes will have developed their full level of fruit flavors by the time they reach about 24% sugar, but may continue to improve to 25% or even to 26%--it depends on the grape and the year. A few other tricks can be used--”whole berry” fermentation, or fermenting without crushing the skins of the grapes will increase fruit flavors and decrease tannin; and leaving the grapes to ferment “on the skins” for a longer time may first increase tannin and then actually produce a softer wine during aging.

Memo to Self

By the time you get to the subtleties of whether to use French or American oak barrels, the length of time to mature the wine, and how thoroughly to filter the wine before bottling, the main features of the wine are well established. Basically, the winemaker’s charge is: “Start with good grapes and don’t screw it up!”