

Snow on Wine

November 2019

VERAISON: Not Your Cell Phone Company

But a wake-up call for every vintner!



Beginning the day vines awaken from winter dormancy, the desire to pick at the exact moment of ripeness is the goal of all vintners. They show casual awareness as “bud break” occurs in March. Interest is perked during flowering and “fruit set” in May. If there is an abundant fruit set they may spring to action and order a “green harvest” where excess clusters are snipped and dropped unceremoniously upon the ground. The vines then puts more “energy” into remaining grape clusters. However, when *Veraison* arrives, the quest for perfect ripeness turns to passion. Veraison is the period of grape maturation. Onset is marked by color change as green chlorophyll is replaced in red grapes by anthocyanins and other phenolics (tannins and flavor compounds) in shades of red, blue, and dark purple, and by carotinoids in white grapes. If we were grapes it would be our puberty.

Before Veraison grapes are firm green and enlarging. Acids accumulate but little or no sugar. With onset of Veraison, grapes swell as sugar content increases rapidly (glucose & fructose) but acids begin to decrease. Onset within clusters is irregular with the outer grapes, more exposed to warmth, undergoing Veraison first. Earlier Veraison produces the best wine grapes so it's onset is often encouraged by: 1) water restriction, and 2) removing part of the leaf canopy. As Veraison progresses, vintners closely monitor maturation by measuring sugar content. Juice of a few typical grapes is squeezed into a refractometer to measure the degrees BRIX ($^{\circ}\text{Br}$). One $^{\circ}\text{Br}$ equaling one gram of sugar in 100 grams of solution. With a $^{\circ}\text{Br}$ of 24, a fully fermented “must” would produce wine with about 13% ethyl alcohol – typical for table wine. This is one of three measures of maturity – “sugar maturity”.

But it's not just about sugar Sweet Pea. As sugar is increasing, that all important acid, which gives crispness, structure and balance to the wine, is decreasing. Too much acid and wine will be harsh and sharp on the palate. Too little acid and a flat flabby wine results. Temperatures control the rate at which acids are converted into sugars. Our cool nights in Washington are

famous for preserving acids and allowing more “hang time.” Getting the acid just right is the second measure of maturity which is all about acid/sugar balance. (Next month we will discuss the changing acid profile of tartaric, malic, citric, acetic and other acids over the grapes life).

The third measure of ripeness is variously called phenolic or physiologic maturity. This occurs during that “hang time”. This is all about skin – not yours Sweet Pea, the grape’s. Early forming sharp harsh tannins (small phenolic molecules) polymerize into more pleasant soft tannins (longer phenolic chains). Most grape flavor is also in the skin. Flavor compounds (flavonoids, monoterpenes and a host of others) are forming now as well. But it takes quite a bit of “hang time.” A heat wave hitting late in Veraison can accelerate the development of sugars and rapidly drop of acids. The crucial balance can be lost before physiologic maturity. This is “vintner crunch time” and difficult decisions and compromises must be made “on the spot.” At each winery the best compromise is chosen. The vintner commits and vintage or picking occurs.

To our delight, wine is an alcoholic beverage, and having enough sugar is crucial to getting the desired alcohol level. So, it follows that enough sugar is the first mark of grape maturity. But proper acid to balance the sugar and alcohol gives the best mouth feel and drinkability and is closely monitored. Finally, the development of tannins and flavor compounds in the skin completes the maturation, ending Veraison and beginning vintage. When it all works smoothly, we are the happy beneficiaries.

VERAISON

THE ONSET OF RIPENING

