

Big Bad Reds

by John Tummon / June 8, 2012

For most wineries, it is more common and more profitable to produce early drinking, approachable wines that can be bottled and brought to market as soon as possible, so over extraction is a concern and tannin management is important. In contrast, at Kacaba, we have developed a niche market with a style of wine that is big and intense and benefits from spending considerable time aging, not only in the barrel, but also in the bottle.

1) THE VINEYARD:

You have all heard the phrase, "You can't make a silk purse from a pig's ear". Big intense wines begin in the vineyard.

TERROIR: Soil, weather, geographic, geological conditions interact with the specific vines that we grow. Our vineyard is one of the most protected resulting in a longer growing season with less winter damage.

CLONES AND ROOT STOCK: We have chosen specific clones and rootstock to control vigour and control yield for more intense and concentrated fruit.

VITICULTURE: We never irrigate and we rarely fertilize. In the vineyard we have adopted various practices to minimize vigour and maintain very low crop yield in a moderately stressful environment. Crop thinning minimizes yield and producing a more consistent level of ripeness with few if any unripe berries.

2) HARVEST:

Tannins are found in the seeds and in the skins of grapes and anthocyanins are produced in the grape skins as the grape ripens over the long season. As the grapes ripen, the acid levels decrease, the sugar levels increase and tannins mature or ripen by becoming less astringent. At the same time the anthocyanins (colour) and flavours develop in the grape. This is what is referred to as phenolic or physiological ripeness.

Phenolics in wine are composed of anthocyanins, or the colour components of wine.

Tannins, on the other hand, are responsible for astringency, stability, preservation and structure of a wine.

Determining when to pick for optimum quality is a challenge. Numbers such as sugar, acid levels and appearance are important but taste is the best way to determine optimal phenolic and physiological ripeness. Grapes are hand picked and sorted.

3) CRUSHING and/or DESTEMMING:

Crushing allows maceration or tearing of the skins, which will further enhance the extraction of skin components during the alcoholic fermentation. Crushing also provides the opportunity to better separate the stems from the must. This may be desirable if the stems will impart unwanted characters to the must or wine. The type of crushing operation can directly influence wine composition. In some cases it may be desirable to skip the crushing operation and proceed directly to fermentation. Depending on the amount of extraction desired we may choose to do whole berry or partial whole berry fermentation. There appears to be a clear correlation between presence of whole berries and retention of berry fruit character.

Controlling the temperature of the fruit at harvest controls the temperature of processing. If cooling is available, the fruit can be chilled prior to crushing which will also serve to minimize skin extraction.

I choose to completely remove stems, but, in other cases, it is more desirable to leave the stems in the must so that they will be present during fermentation to allow extraction of stem components or when the presence of stems will facilitate downstream processing.

4) MACERATION:

Winemakers are aware that they have to optimize not only the quantity of tannin extracted, but also the desired level of tannin in the wine. Tannin from seeds can make wine excessively astringent while high skin tannin levels may cause herbaceous characters and bitterness in the final wines. For this reason, winemakers like to use skin contact, or maceration to extract a higher proportion of skin-derived tannins to seed tannins. The overall result is a taste of “riper” tannins, particularly when compared to tannins found in the seed alone. By extending the maceration, winemakers also get to extract the colour from the skins.

COLD SOAK: In the practice of cold soak or cold maceration, the must is cooled to about 15 to 20 °C (41 to 68 °F) to slow down the onset of fermentation by indigenous yeast, and contact between skins and juice is promoted. The purpose of cold soaking is to encourage extraction of pigments and other phenolic compounds from skins in the absence of ethanol. The skins are soaked for one to two days and the must is pumped over or mixed to facilitate the phenolic extraction. The cold maceration is thought to improve color, body, and mouthfeel of the resulting wine. The effectiveness of this approach will depend on variety, fruit composition and the condition of the fruit.

EXTENDED OR POST FERMENTATION MACERATION: After fermentation is completed and the carbon dioxide dissipates from the fermentation, the cap is no longer buoyant and will sink to the bottom of the tank. In some varieties, those with particularly hearty cell walls, this extended contact allows further extraction of cellular components due to the presence of ethanol and various enzymes. In other cases, it serves to allow greater extraction of nutrients important for stimulation of the malolactic fermentation.

5) FERMENTATION TANNINS:

Ecological tannins, oak chips and oak powders can be used to protect against oxidation, stabilize the colour and enhance the structure or the mouthfeel of the wine. They should be used with a good knowledge of the product to select the appropriate tannins and the appropriate dose.

6) ENZYME ADDITIONS:

Enzymes help to break down the cell walls and improve colour stability and enhance mouthfeel. They help to liberate polyphenols and tannin bound polysaccharides. They can also increase juice extraction and filterability.

7) TEMPERATURE:

Red wines should be fermented between 70° and 90°F (21-34°C). They should be fermented at higher temperatures to allow for better color extraction, tannin extraction, and to limit fruitiness which is undesirable in most red wines. Fermentation temperatures need to be controlled. Start off slowly and eventually let it rise to a max of about 32 or 34 which favours maceration extraction. Lower fermentation temperatures tend to retain fruit aromas and other volatile aromatics while maintaining a fuller mouth feel.

8) CAP MANAGEMENT:

Extraction is facilitated principally by two factors: temperature and ethanol. However, the carbon dioxide produced by the yeast during fermentation tends to make the skins buoyant and the skin and seeds will float to the top of the tank away from the ethanol and active site of fermentation, the major source of heat. Better extraction is accomplished by mixing the skins back into the fermenting juice. It also keeps the cap from drying out and minimizes the formation of volatile acidity. There are

several techniques used to accomplish this. Frequent pump-overs or punch downs are what we do at Kacaba. You may choose to somehow submerge the cap as an alternative

9) PRESSING:

Pressing conditions can be severe enough to generate shearing of plant cell walls and greater extraction. The shear forces may also be great enough to damage seeds resulting in the release of seed phenolic compounds which in most cases is undesirable. This is varietal and style-specific, but we choose to gently press over an extended period of time.

10) BARREL AGING:

All of our wines at Kacaba are barrel aged from 18 to 24 months. There are two important ways in which barrel maturation affects wine quality.

(1) Many volatile and nonvolatile compounds are extracted from oak wood and these constituents influence flavor and quality of wine. It is important to note that in barrel making the oak wood is seasoned and toasted to various levels. These treatments modify the oak constituents which contribute to oak derived flavors in barrel aging wines.

(2) Controlled oxidation of wine during storage enhances and stabilizes red wine color and produces wine with decreased astringency and suppleness. It's difficult to replicate these with oak chips.