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Overview of Wine Making

Ten processing operations are common to making white and red table wines. However, they are not all performed in the same order:

1. **Stemming and crushing.** Stems are separated from grape berries, the skins of which are broken to free the juice. The mixture of juice, skins, seeds, and pulp is called must.
2. **Determining sugar and acidity of the juice.** Sugar content is approximately equal to percent soluble solids ($^{\circ}$ Brix).
3. **Adding sulfur dioxide (SO₂).** Needed to inhibit growth of spoilage organisms and prevent oxidation.
4. **Adding pure wine yeast starter cultures.** Facilitates a clean, consistent, and complete fermentation.
5. **Pressing.** Skins and seeds are separated from the juice at the beginning in the case of white wine and after some fermentation on the skins in the case of red.
6. **Fermenting.** Yeast converts sugar to alcohol and carbon dioxide.
7. **Racking wine from lees.** The clear wine is separated from spent yeast cells and other solids after fermentation.
8. **Adjusting SO₂ content.** Prevents spoilage and oxidation.
9. **Aging/topping and/or clarification.**
10. **Bottling.**

These 10 wine making steps may appear relatively easy to the experienced winemaker. The inexperienced winemaker, however, must learn to check details, such as topping in a timely manner, using a pure yeast wine starter culture, or properly using SO₂, to avoid wine spoilage. For several reasons, good quality red table wines are easier for the beginner to make than are white wines, mostly because white wines are more subject to oxidation and browning. Therefore, start with red table wines to gain experience.

The major difference between red and white wines is that, after stemming and crushing, the juice of the must for red wines is fermented on the skins for several days to extract their red pigments. In white wines, only the clear juice is fermented to minimize extraction of tannins from skins and seeds. Other significant differences:

1. White wines should be fermented at cooler temperatures than are reds to achieve the best quality.
2. Red wines gain in quality and complexity by aging in oak barrels.
3. White wines generally are made without wood aging and are consumed when they are relatively young; thus, they retain fresh and fruity aromas and flavors.

For both red and white wines the volume of wine made must be larger than the total storage capacity of the aging or storage containers—glass carboys, gallon jugs, or barrels—because additional wine will be needed to replace the volume lost to lees after fermentation, and for topping during aging to replace wine lost to ullage or evaporation. (See sections on racking and aging of red wines.)