

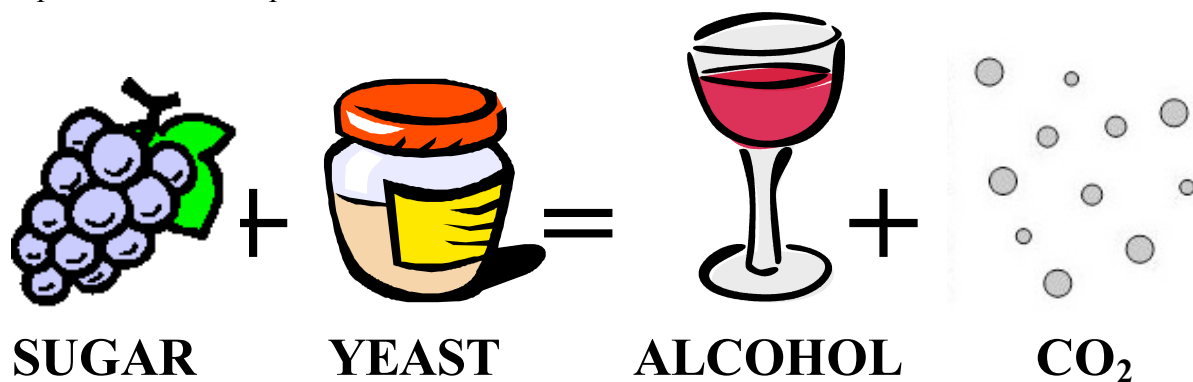
HOW IS WINE MADE?

Wine is **fermented fruit juice**, almost always the juice of grapes. Many kinds of fermentation occur; like those producing cheese from milk or helping bread dough to rise. Alcohol fermentation is the formal designation of the process central to winemaking, simply referred to as fermentation below for simplicity.

FERMENTATION

All beverage alcohol is produced through fermentation, the process by which yeasts convert sugar into alcohol. This natural occurrence is generally considered a form of spoilage, but winemakers can take control of the process to achieve desirable results.

Yeasts are microscopic organisms, members of the fungus kingdom, and occur naturally in the environment. Yeasts consume sugar as fuel and break it down into alcohol and carbon dioxide. Much energy is released in the process, generating heat and allowing the yeasts to grow and reproduce. The recipe for fermentation is:



The complex reactions of fermentation and the heat it produces both change the way the grape juice tastes. Flavors and aromas not found in fresh grapes frequently occur in wine, released through fermentation. The heat generated may also alter flavor, much like simmering a soup or a stew deepens and softens the flavor of its raw ingredients.

HOW IS WINE MADE?

Grapes are used almost exclusively in making wine because their sugar content is so high. European grapes, in particular, have an excellent track record of making flavorful wine. The winemaking process is outlined below.

- **Grapes are crushed.** This gives yeasts clinging to the skins of the grapes access to sugars in the fruit.
- **Yeasts feed on the sugar and reproduce.** This starts a continuous cycle that generates **alcohol, CO₂ and heat.**
- **Heat and complex chemical reactions release flavors** that may or may not have been present in the fresh grapes. If the grape skins are discarded, only juice is fermented and the wine will be white. If the skins are dark and are included in the fermentation, their color will be extracted along with their flavor, making a red wine.



- **Fermentation usually ends when the yeasts run out of sugar to consume.** Most wines taste dry, because they have no residual sugar left.
- **Wine is matured before bottling.** Wine needs to rest after fermentation. This can range from months in steel tanks to years in oak barrels or casks.