

COMMON WINEMAKING FAULTS AND THEIR CAUSES

Incomplete Primary Fermentation

An enzymatic test for glucose and fructose is the only way to be completely sure that primary fermentation is complete. Incomplete primary fermentation is often noticed as cloudiness in wine, potentially with loss of colour, stale or oxidised characters can be apparent as well as the presence of CO₂ in the wine. When oxidation is more advanced, acetaldehyde may be evident. These problems often manifest themselves shortly after the wine is racked, presumably because the aeration caused by racking stimulates yeast activity.

Insufficient SO₂

Insufficient SO₂ manifests itself as either microbiological instability or oxidation of the wine. When adding SO₂ it is important to understand that the effectiveness of any addition will be determined by the pH of the wine. In addition, it is the 'free' rather than the 'bound' SO₂ that infers anti-microbial and anti-oxidative protection, and only part of any addition will yield free SO₂. The level of free SO₂ in the wine will fall significantly during racking and gradually over time in storage and in the bottle due to oxidation.

High pH

The pH of picked grapes can vary considerably. It is important that the winemaker makes adjustment as soon as possible to ensure the pH of the must and wine remains within the target levels recommended below. Note that with higher pH, SO₂ becomes less effective, and the growth of potential spoilage microorganisms is favoured.

Red Wine: Must (pH3.30-3.45), Finished Wine (pH3.55-3.60)

White Wine: Juice (pH3.15-3.30), Finished Wine (pH3.30-3.45)

Incomplete Malolactic Fermentation

As with incomplete primary fermentation, completion of malolactic fermentation should always be confirmed with an enzymatic test. The consequences of the growth of bacteria in wine are similar to those caused by yeast growth, described above for incomplete primary fermentation.

Inadequate Clarification

Many wines are now bottled without filtration because of the perceived negative effect on wine quality. Some of these wines may form a haze which may be due to suspended yeast or bacteria, both of which are capable of forming hazes that do not readily settle or form a deposit in the bottle. If a slight negative effect on wine quality does occur due to filtration, it is greatly outweighed by the possible negative effect of wine spoilage that may occur if the wine is not filtered.

Wine Additives

Wine instability and problems can be caused by wine additives. Use products that are specifically recommended for use in wine, perform bench trials on a sample of the wine and check and re-check calculations before any additions are made.

COMMON WINE FAULT TERMS

“V.A. (Volatile Acidity or Volatility)”: The smell of vinegar (Acetic Acid and /or nail polish remover (ethyl acetate). Can arise from poor storage practices that exposed wine to air.

“Aldehyde”: Similar smell to Fino Sherry and is the result of either oxidation or microbial spoilage and if left untreated will normally result in V.A.

“Oxidised”: When wine is exposed to the air the fruit aromas and flavour become muted, not as apparent; the wine might also be described as tasting “flat” or “flabby “. The wine might also have a brownish colour and show similar characters to “Volatile” and/or “Oxidised” wines.

“H₂S (Hydrogen Sulphide)”: The smell of rotten eggs produced by yeast during fermentation generally caused by a lack of nitrogen in the ferment or excessive use of sulphur in the treatment of the grapes prior to ferment (e.g. sulphur based sprays in the vineyard). Use sufficient nutrient at the correct times during primary fermentation. If not treated properly (with Copper Sulphate) H₂S can lead to the more serious problem of Mercaptans (rotten vegetable aromas).

“Bret character” (Brettanomyces): An unpleasant “barnyard” smell (may also be described as a “horsey” smell). Generally, the result of storing wines in contaminated barrels. Clean and sanitise storage vessels carefully.

“Corked”: Refers to a mouldy, musty, wet newspaper, dank characters. Results from the mould in corks in conjunction with chlorine forming a compound called Trichloroanisole (TCA), which remains in the cork and taints the wine. Avoid using chlorinated water and chlorine based cleaners. A wine sealed with a screw cap cannot be tainted with TCA, by the selected closure itself.

“Green”: Young wines, which are unbalanced because of excess acid (generally Malic Acid), made from grapes which have not fully ripened. Only use high quality, properly ripened grapes. If you can, ask the grower to advise sugar and acidity levels of the fruit before you commit to using it for your vintage.

“Astringency”: Gives an unpleasant puckering, drying, tactile sensation in the mouth due to high tannin content absorbed from skins and seeds. May be caused by excessive contact with skins and/or seeds during primary ferment. Rough tannins may be due to the use of poor quality oak. Manage skin contact appropriately and use only high quality oak.

“Unbalanced”: A balanced wine has alcoholic strength, acidity, residual sugar, tannins and fruit characters which complement each other so that no single one of them is obtrusive on the palate.