



Pre-Vintage Discussion Paper

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- 1) Clean fruit ex vineyard.
- 2) Use active fresh yeast cultures - do not cross-seed more than once.
- 3) Aim for steady controlled fermentations. Stuck ferments have a very high probability of becoming volatile due bacterial activity on residual sugar, producing volatile acid very quickly and in large amounts (up to 2.0g/L).
- 4) Ensure that new wines are racked/SO² added, filtered, and topped as soon as possible after fermentation. Ensure that free and total SO₂ are maintained at acceptable levels while in storage.
- 5) If using oak that has had wine stored in it previously, try to sterilize the barrels with either steam or hot water (high pressure steam is best).
- 6) Do basic analytical checks on a monthly basis and keep records and a history of each batch of wine.
- 7) Wine should be stored in a cool situation at a constant temperature. This cannot always be achieved but the circumstances should influence your surveillance regime.
- 8) No wine should be left ullaged for more than two days, even with an inert gas cover.
- 9) Bottling young wine with high dissolved oxygen levels, (above 0.6g/l) should never be allowed to occur.

Useful Technical Information

1) 4-Ethyl phenol (commonly known as Brett)

- Formed by Brettanomyces yeast. Can come from the vineyard as part of the natural micro flora.
- Not active during primary fermentation but rather during barrel maturation, especially if barrels are not stored in a temperature controlled environment.
- Low SO², warm temperatures and barrels that have been used before are all conditions that promote Brett populations.
- Sensory detectable levels of 4-EP/4EG are around 400-600ppm.
- Brett is usually not a problem in white wines because of their active levels of free SO₂ during bulk storage, although Brettanomyces can grow in barrel fermented whites that are left with out free SO²

2) Acetaldehyde

- Formation is closely linked to oxidation; however the direct production of acetaldehyde is from the physical oxidation of ethanol. Also used in the production of flor sherry by flor yeast (aerobic film yeasts) where aldehyde is a part of the character of sherry.

Acetaldehyde is not a desirable attribute of dry table wines.

- Formation can occur in both reds and whites that are left on ullage for extended periods.
- Will disappear rapidly when SO² is added in most cases, depending upon how much aldehyde has been produced.
- Does play a role in colour changes in both red and white wines during ageing by facilitating the co-polymerization of phenols.
- Can be removed with the addition of hydrogen peroxide (H₂O₂), although this procedure needs to be carried out with great care.

3) Acetic Acid

- Can be formed by various species of acetobacter which convert ethanol to acetic acid.
- or by the oxidation of ethanol to acetic acid in the presence of air.
- Formation of acetic acid is related to storage conditions. Ullaged wine, wine oxidized during handling, high temperatures, low sulphur dioxide levels and high pH levels all promote the formation of acetic acid.

4) TCA (AKA 2, 4, 6 trichloroanisole)

- Caused by fungi within the cork itself.
- Very difficult for small producers in particular to avoid.
- Can destroy your business if you are unlucky enough to get a bad batch of corks.
- The solution is to use screw caps instead of cork
- Perceptible cork taint threshold can be as low as 4mg/l (4ppm)

6) H₂S (Hydrogen Sulphide)

- Directly produced during yeast metabolism
- Formed during alcoholic fermentation in musts with low nitrogen content
- Yeast can break down amino acids containing sulphur such as cystine.
- SO₂ can also come from the vineyard if a sulphur spray is applied very close to harvest.
- Addition of DAP (diammonium phosphate) with regular aeration is the best method of removal. Copper can be used with caution, but only as a last resort.

FERMENTATION

