



## HONEY MOON VINEYARD

### HOW RED WINES AGE

What happens when a red wine ages in the bottle? Lots!

Three processes cause changes to colour, mouthfeel and flavour.

**1. Colour** from anthocyanin molecules, gradually lightens and changes from ruby-purple red towards more of a brick red, as the anthocyanin molecules polymerize (join up) with tannin molecules. With extended ageing the anthocyanin-tannin molecules can become so large that they no longer remain soluble in the wine and precipitate as a deposit. This natural deposit that forms in red wines often means that an old red is best decanted when serving to avoid having the sediment in the glass.

**2. Mouthfeel** – as the tannin molecules become larger, they take on a silky or velvety quality and mouthfeel becomes softer.

**3. Flavour** is enhanced – as many aroma precursors are released by acid hydrolysis in the wine as it ages, slowly over time.

Wines contain many aroma compounds that are formed in the grape. However a proportion of these are formed in such a way that we cannot smell them.

Remember that wine flavour is mainly due to what we can smell in the wine, either by smelling the wine's bouquet in the glass or as we taste the wine in our mouth.

As grapes ripen, many of the aroma compounds formed in the grapes are chemically bonded to glucose molecules\* and in this form we can't smell them even though they are in the young wine. (\*The reason for this is unknown but could be related to the grape skin cells needing to store these compounds in a form that is less disruptive to cell membranes, or needing to store them in this "preserved" way until the grape seeds have fully formed.) During wine maturation the natural organic acids in the wine eventually break the bond between the aroma compounds and their glucose components, thus transforming the aroma compound into a form that can be smelt.

So, an older red wine will often have a more intense and complex aroma compared to that of a younger wine.

(This is subject to, of course: the grapes being of high quality, with all their potential flavour, tannin and acid captured at harvest; that potential being protected in the course of careful winemaking; and all this hard work on the part of the vines and the vignerons being preserved via appropriate bottling processes and good cellaring conditions.

Sometimes an older red wine may taste less acidic as it ages and this perception may be related to the increased aroma/flavour that the wine has achieved. It is not due to any changes in the acid level, which stay fairly constant over time.

### The role of oxygen in wine maturation in bottle...

Some long-held ideas (even myths!) about red wine ageing suggest that oxygen plays a positive role in the bottle maturation of the wine and that cork closures allow a small amount of oxygen into the wine. Recent research challenges the idea that post-bottling exposure to oxygen is a good thing for wine ageing.

For wines closed with natural cork, oxygen ingress is mainly caused by gas exchange between the sides of the neck of the bottle and the cork cylinder. Natural wine corks are not uniform in their elasticity and the inside of the neck of a wine bottle is not uniform either. In a worst-case scenario e.g. a rigid wine cork inserted into an

oval-shaped bottle neck, subject to 5-10 degrees temperature variation, causing 1 to 3ml of air exchange in and out of the bottle – the wine in that bottle would quickly oxidise and, when finally tasted after several years of cellaring, present as being stale or “over-the-hill”. This is why wines closed with cork often exhibit a high degree of “bottle variation” i.e. some bottles in a case are good/fresh, others not so good/stale, some suffer from cork taint, others not, etc. A wine that has been exposed to excessive oxygen suffers the following symptoms: colour is faded and possibly brown in hue; fruity aromas and flavours are diminished, while savoury notes are dominant (often described as leather, baked fruit, cardboard); and – for the nerds – a grossly oxidized wine will have a high level of aldehyde, which comes from the oxidation of the wine’s alcohol.

In the case of a well-aged old wine, that is still of high quality, there will almost always be an array well-preserved fruit and other aromas and flavours alongside aged and/or savoury notes.

In our view, modern screw cap closures perform much better as wine closures. They have very low gas exchange and there is no risk of cork taint issues. They keep red wines fresh and young for longer compared to cork closures. Wines still mature and evolve when closed with screw caps, they just take longer to do so.

Gaahhd we do go on!

Hylton and Jane

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