The chemistry of **Pinot Noir**

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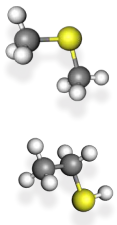
Pinot Noir is the top red wine variety in New Zealand by hectares, with each region reflecting its own terroir and style. As Pinot Noir ages, it develops distinct aromas and flavours that contribute to its complexity. So far, more than 40,000 distinct compounds have been detected to comprise Pinot Noir's chemical matrix, and it is believed there are still more to be found. While our knowledge of chemistry may never explain the full complexity of Pinot Noir, there are a few important classes of compounds that we do know about.

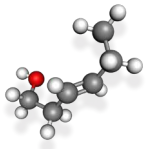
VOLATILE SULFUR COMPOUNDS

Volatile sulphur compounds (VSCs) possess a very low sensory threshold and are associated with strong unpleasant sensory descriptors such as rubber, cooked onions, garlic and cabbage. Together with other wine aroma compounds, however, they are known to add to the overall bouquet.



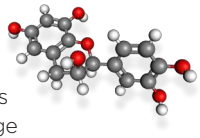
C6-ALCOHOLS

C6-alcohols, like hexan-1-ol can be found in green plant tissue that make it into the fermentation tank, such as bunch stems. The aroma they impart is described as grassy, or herbaceous.



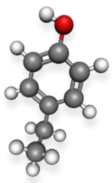
TANNINS

Tannins are larger polyphenol structures that are contributors to wine astringency. Smaller polyphenols can also contribute bitter tastes to wine. Tannins change considerably during wine aging.



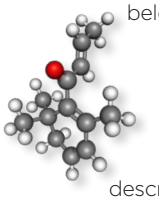
VOLATILE PHENOLS

Volatile phenols are aromatic-oil like compounds found in very small traces. Some like eugenol can be pleasant, imparting a spicy clove-like odour, while others like 4-ethylphenol can give barnyard, or mousy aromas, indicative of faults in wine, but interestingly, desired in some Belgian beers.



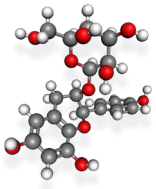
NORISOPRENOIDS

Norisoprenoids like damascenone belong to a family of chemicals known as rose ketones. Despite their very low concentration, they are important contributors to fruity, rose and berry aroma descriptors found in some wines.



ANTHOCYANINS

Anthocyanins are the major contributors to the colour of red wine. They belong to a class of polyphenols that are largely water soluble and provide shades of red and purple that vary with wine pH. Foods rich in anthocyanins include blueberries and raspberries.



LEGEND
Compounds are expressed in different stages of the winemaking process:

PREPARATION · COLD MACERATION · FERMENTATION · MALOLACTIC FERMENTATION AND AGING

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