

A rose by any other name: novel wine yeast that impart floral aromas



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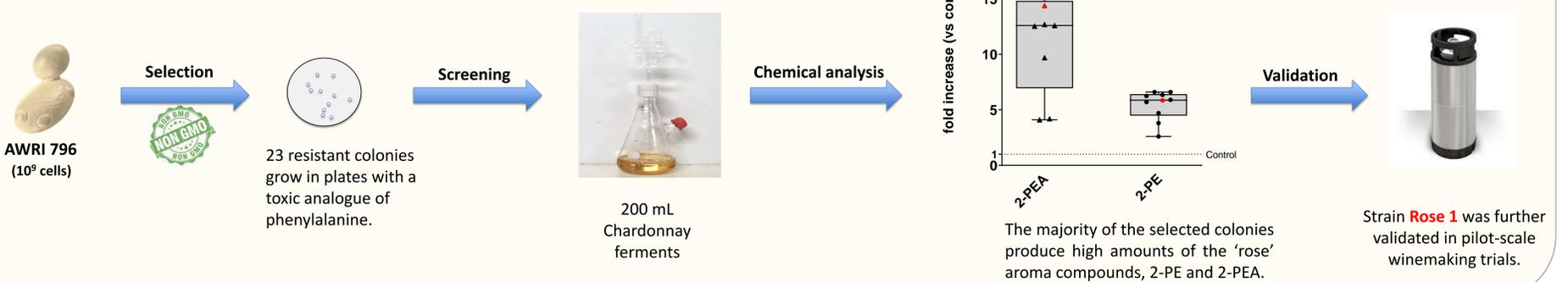
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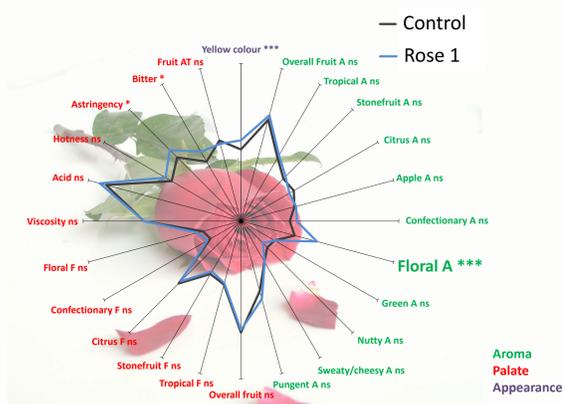
Background

It is well established that the choice of yeast used to perform wine fermentation impacts significantly on sensory attributes of wines; different yeast species and strains impart different profiles of aromatic compounds. The fusel alcohol 2-phenylethanol (2-PE) and its acetate ester, 2-phenylethyl acetate (2-PEA), confer desirable 'rose' and 'floral' aromas in wine. These compounds are usually present in concentrations below their odour thresholds, particularly in white wines, and as a consequence their contribution to wine aroma is likely to be minimal. By harnessing classical yeast strain development techniques, non-genetically modified (non-GM) yeasts that overproduce 2-PE and 2-PEA, and impart 'floral' aroma during wine fermentation, have been isolated and characterised.

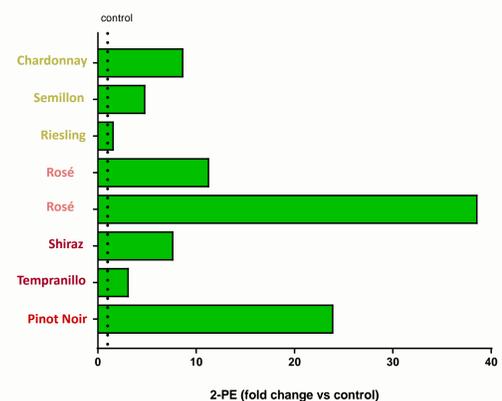
Selection and screening of the 'rose' strains



Pilot-scale winemaking trials

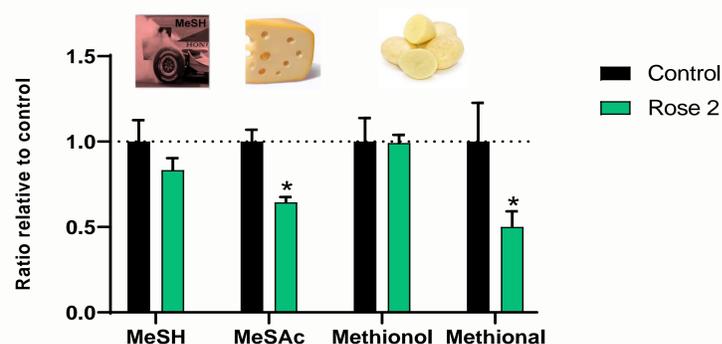


Rose 1 produced high levels of 2-PE in a Chardonnay winemaking trial (20 L), which led to an increase in the floral aroma of the corresponding wines.

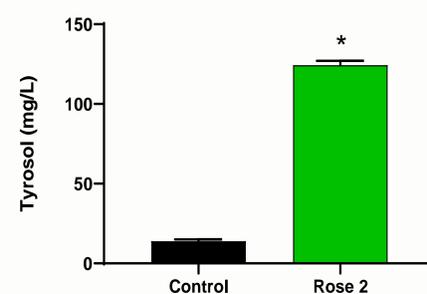


Rose 1 produces high levels of 2-PE in different wine styles. Informal sensory analysis indicates that this 'floral' style is more compatible with white winemaking, rather than reds.

Other interesting characteristics of the 'rose' strains



Another of the selected strains, **Rose 2**, has the ability to reduce the formation of negative sulfur compounds derived from methionine.



Rose 2 also produces high levels of the phenolic compound tyrosol, associated with positive health effects (antioxidant, cardioprotective). Tyrosol is also thought to influence white wine mouth-feel perception.

Summary

The non-GM wine yeast strains isolated and characterised in this study provide a new tool for the production of 'floral' wines, enabling winemakers to tailor products to specific market segments.



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