

YEASTS AND WINE TECHNIQUE FOR SENSORY ENHANCEMENT OF WINE

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As far as it concerns white wine, the first reason of the widespread commercial availability of selected *Saccharomyces cerevisiae* strains in the last few decades was the need to make fermentation completion easier. Other reasons were the limitation of macroscopic wine troubles like volatile acidity, ethyl acetate and S compounds related odours. Today, probably, the possibility to lead the fermentation towards the production of peculiar aroma compounds characterised by specific sensory notes is prevailing. Examples are the fruity fermentative component given by fatty acid ethyl esters and acetates of higher alcohols, the floral contribute of 2-phenylethanol, passion fruit and grapefruit-like aromas provided by so-called varietal thiols, floral or spicy flavours of some aglycons made free via a yeast glycosidase ... Compared to white vinification, the use of selected yeasts for red wine production became established at a later time. Yeast strains able to enhance polyphenol extraction from skins or giving adequate amounts of acetaldehyde, piruvic acid and cinnamic derivatives captured specific attention for their ability to stabilise colour. Also the recent custom or need of producing wines with higher alcohol strength, sometime applying or standing extreme temperatures, favoured commercial yeast strains diffusion. Nevertheless, several winemakers working in non-industrial wineries let musts ferment spontaneously to avoid aroma flattening attributed to the worldwide use of few *Saccharomyces cerevisiae* strains. Some organic or biodynamic wineries returned to the ancient protocols, conserving and growing their own best microbiota to ferment musts year by year. In parallel, an increasing attention can be observed about the use of non-conventional yeasts, as well as of yeast and lactic bacteria co-inoculation.

Of course, winemakers also have to optimise the yeast related aroma variability together with that due to winemaking technical options and relative constraints.

This lecture makes an excursus on the technological transfer activities carried out in the last years at the Mach Foundation, San Michele all'Adige (Italy), in order to supply winemakers with technical knowledge - carried out by our public Institute with no commercial conflict of interest - about the aroma performances of several yeasts collected from the market and specific winemaking options.