

Characterization of potential spoilage wine yeasts and their possible use in winemaking process

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The yeasts belonging to the genera *Pichia*, *Zygosaccharomyces* and *Saccharomycodes* are generally believed spoilage wine yeasts because they are often isolated from stuck or sluggish fermentations, or from wines with anomalous analytical and sensorial profiles.

However, while these yeast genera in pure culture fermentation often lead to the production of wines with principal negative features, their presence in a mixed fermentation with *Saccharomyces* may provide the final product with particular sensorial characteristics. Indeed, in the last few years, other authors have shown that in natural fermentations *Saccharomyces* and non-*Saccharomyces* yeasts do not passively coexist but they seem to interact; in these conditions some oenological traits of the non-*Saccharomyces* yeasts are not expressed, or they can be modulated by the *Saccharomyces* yeast cultures (Bely et al. 2008; Anfang et al. 2009). Other studies have also pointed out the abilities of most of the yeasts belonging to these genera to produce high amounts of different metabolites and enzymes able to release aroma from precursors present in grapes (Fernandez et al. 2000) therefore influencing the perceivable characteristics of the final product (Romano et al. 2003).

Based on these observations we evaluated their possible use in fermentation processes in mixed culture with *S. cerevisiae*, to increase the complexity of the final wine. Preliminarily we evaluated the fermentative performances of pure cultures of yeasts belonging to *Pichia*, *Zygosaccharomyces* and *Saccharomycodes* genera. In a second step we selected two cultures for each genera and utilized them in mixed fermentation with a commercial *Saccharomyces cerevisiae* yeast strain at different inoculum ratio.

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References

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