

BIODIVERSITY OF INDIGENOUS *SACCHAROMYCES CEREVISIAE*: A DISTINCTIVE RESOURCE FOR WINERIES?

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INTRODUCTION

Indigenous *Saccharomyces cerevisiae* strains, occurring in spontaneous wine fermentations, usually display a high genotypic and phenotypic diversity which can significantly affect chemical composition and sensory qualities of resulting wines [1; 2; 3].

Moreover, some indigenous *S. cerevisiae* strains can be found during alcoholic fermentations in consecutive years as predominant strains, so they seem to be representative of a specific oenological ecosystem.

Material and Methods



Grape must sampling. Samples of grape must from the vine varieties Sangiovese, Cabernet, Merlot, and Pinot Noir were taken daily from fermentation tanks in some cellars located in different oenological areas in Tuscany (Italy).

AIM

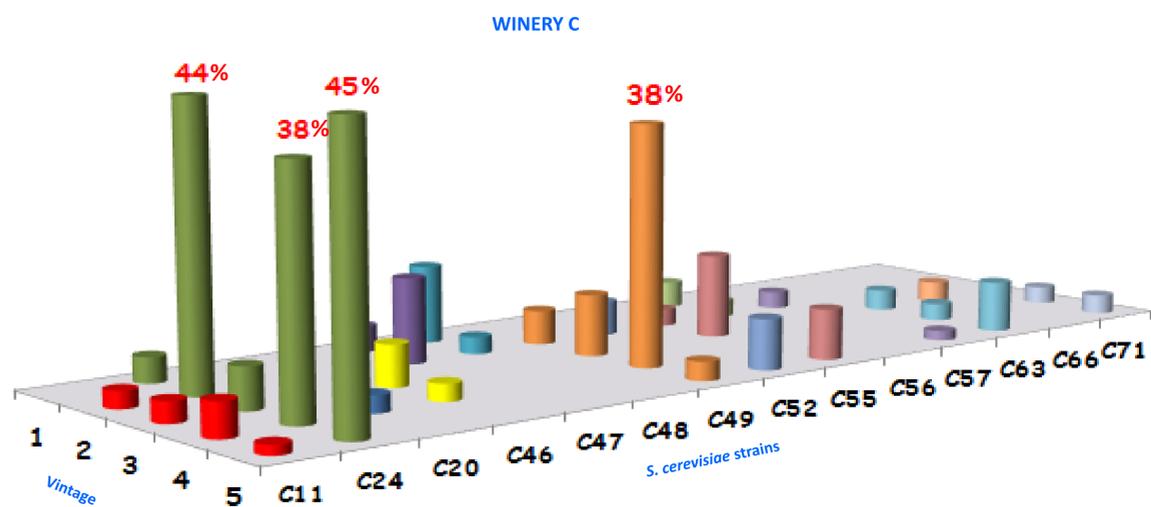
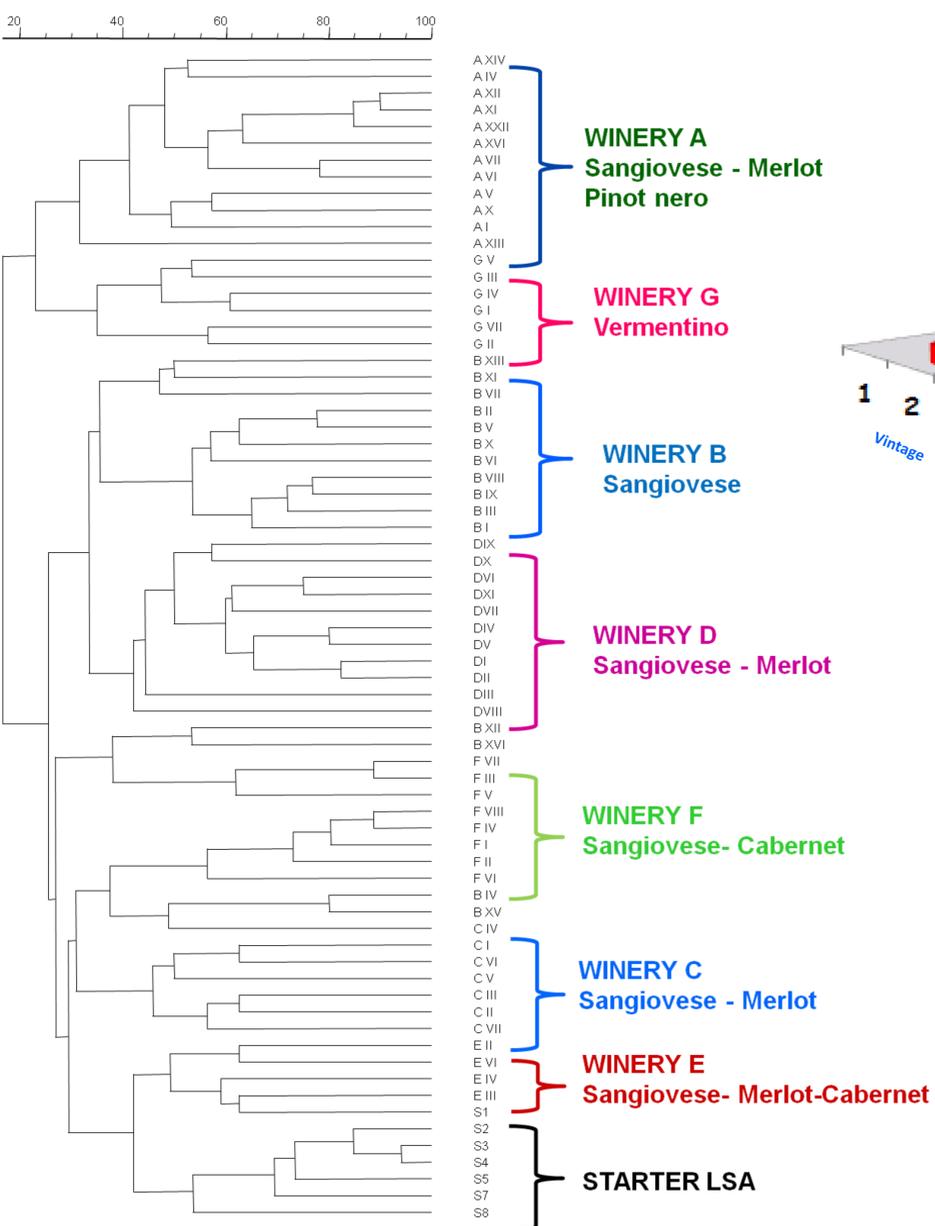
To assess the genotypic diversity within natural *Saccharomyces cerevisiae* populations in numerous wineries in the course of alcoholic fermentations of musts from different grape varieties during various vintages

Molecular analysis. For each winery, several *S. cerevisiae* isolates were characterized by mitochondrial DNA restriction analysis with *RsaI* endonuclease and interdelta analysis with primer $\delta 12$ - $\delta 21$.

Some commercial yeast starter cultures were also included in the study.

Molecular patterns were submitted to the UPGMA analysis by Dice coefficient.

RESULTS



Independently of the grape variety, a few dominant and recurrent *S. cerevisiae* strains became the resident microbiota of a winery

When all the obtained different molecular profiles, corresponding to the different *S. cerevisiae* strains, were subjected to cluster analysis with the Dice coefficient and the UPGMA method, they grouped in clusters according to the winery where they come from

Some yeast commercial strains, generally used as starter cultures, grouped into a distinct cluster indicating that they were significantly different from the indigenous strains

CONCLUSIONS

The occurrence of specific *S. cerevisiae* strains in each winery supports the potential role of these microorganisms in determining *terroir*-associated wine characteristics and their selection could represent a resource to contribute in preserving the typicality of wines

References