

The use of *Hanseniaspora vineae* on the production of base sparkling wine

Non-Saccharomyces yeasts have been associated, for many years, with challenging alcoholic fermentation processes. However, during the last decade the use of non-Saccharomyces yeasts in wine production has become increasingly widespread due to the advantages they can offer in mixed inoculations with *Saccharomyces cerevisiae* (Sc). In this respect, *Hanseniaspora vineae* (Hv), in synergy with *Saccharomyces* spp, represents an interesting opportunity to impart a positive contribution to the aroma complexity of wines. In fact, it is a well-known producer of pleasant esters, such as 2-phenylethyl acetate. This study compares the performances of Hv (strain Hv-205) in sequential inoculation modality to Sc in three Chardonnay musts for base sparkling wine production. No significant differences were observed in basic chemical parameters between wines except for titratable acidity, with a significantly decrease (up to 1.5 g/L) in Hv processes due to malic acid degradation. The analysis of the aroma compounds revealed remarkable differences in concentration of volatile metabolites, among others up to 37-fold increase of 2-phenylethyl acetate. In contrast, lower concentration of its alcohol were detected, suggesting higher acetylation activity by Hv. Branched-chain fatty acids were found in lower concentration in wines fermented with Hv. Additionally, despite the higher concentration of tryptophol and indolacetic acid in the Hv-fermented wines, no significant differences were displayed in 2-aminoacetophenone content at the end of the alcoholic fermentation. Furthermore, it has not been found a clear trend on the potential development of this marker as a typical aging defect. Results suggest a different nutrient demand between the two yeast species with a strong matrix effect on the performances of Hv. Further research is required to elucidate this aspect. From a flavour enhancement perspective, all together these results highlight the potential of Hv strain as an interesting alternative for sparkling base production with a notable floral aroma.

Authors: Tomas Roman – Fondazione Edmund Mach—Technology Transfer Center, via Edmund Mach 1, 38010 San Michele all'Adige, Italy., Nicola CAPPELLO, Fondazione Edmund Mach—Technology Transfer Center, via Edmund Mach 1, 38010 San Michele all'Adige, Italy. Adelaide GALLO Fondazione Edmund Mach —Technology Transfer Center, via Edmund Mach, 38010 San Michele all'Adige, Italy. Mauro PAOLINI, Fondazione Edmund Mach—Technology Transfer Center, via Edmund Mach, 38010 San Michele all'Adige, Italy. Tiziana NARDIN, Fondazione Edmund Mach—Technology Transfer Center, via Edmund Mach, 38010 San Michele all'Adige, Italy. Sergio MOSER, Fondazione Edmund Mach—Technology Transfer Center, via Edmund Mach 1, 38010 San Michele all'Adige, Italy. Francisco CARRAU, Universidad de la Republica, Area Enologia y Biotecnología de Fermentaciones, Facultad de Química, Montevideo, Uruguay Rémi SCHNEIDER, Oenoborands SAS Parc Agropolis II-Bât 5 2196 Bd de la Lironde-CS 34603, CEDEX 05, 34397 Montpellier, France Roberto LARCHER, Fondazione Edmund Mach—Technology Transfer Center, via Edmund Mach 1, 38010 San Michele all'Adige, Italy.

Email: tomas.roman@fmach.it

Keywords: *hanseniaspora vineae*; sparkling wine; aroma; yeast nutrition; 2-aminoacetophenone

