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CONGRESS ABSTRACTS

Mixed cultures of *Hanseniaspora vineae* and *Saccharomyces cerevisiae*: The compromise between completing fermentation and increasing wine flavor complexity.

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Session 7A - Food, Wine and Beer: Short Presentations, CTICC 1 - Meeting Room 2.40, October 1, 2024, 11:20 AM - 12:10 PM

Introduction. In winemaking is traditional that some technical interventions implicate losing or gaining some quality characteristics of the final wine in terms of color or flavor. Among non-*Saccharomyces* species, *Hanseniaspora vineae* has been successfully used at winery scale and is now available to winemakers as an active dry yeast. This species only tolerates moderate levels of ethanol (around 10% v/v). The implementation of a mixed culture with *S. cerevisiae* is a useful strategy to obtain complete fermentations, increasing flavour complexity.

Methods. *H. vineae* HV205 and four conventional *Saccharomyces* strains were utilized for the mixed cultures and as pure control cultures. Fermentation rate and yeast growth were measured in different experiments using a synthetic grape must or natural grape musts of Chardonnay, Petit Manseng, Glera, Tannat and Termantis. Flavor compounds were studied by GCMS analysis, and other non-volatile compounds by HPLC or NIR.

Results. The co-fermentations inoculated with a combination of 80% *H. vineae* and 20% of different *Saccharomyces* strains, resulted in intense flavor compounds over their threshold values. Olfactory aroma values obtained in these conditions even below those corresponding to pure fermentations of HV205, were still significantly higher than conventional fermentations. Fermentation rates in these conditions were like pure *Saccharomyces* performance in real wine pilot scale with Glera and Termantis grapes. Co-inoculation 80%-20% produced significant higher concentrations of 2-phenylethanol, tyrosol and tryptophol acetates compared to 50%-50% proportions and other tested combinations. Similar results were also obtained in high alcohol content wines such as Tannat and Petit Manseng of about 15% of alcohol.

Conclusions. Co-inoculation of HV205 80% and *Saccharomyces* 20% showed to be the ideal strategy to solve the compromise between completing fermentations and increasing flavor complexity within a reasonable process time. These results will facilitate the more effective application of HV205, simplifying its use in large-scale fermentation facilities.