

## THE EFFECT OF MICRO-OXYGENATION AND CELL IMMOBILIZATION ON THE REDUCTION OF EXCESSIVE VOLATILE ACIDITY FROM WINES

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In our former studies we isolated and characterized wine yeasts with the ability to reduce volatile acidity of wines during a refermentation process, which consists in mixing the acidic wine with freshly crushed grapes or musts or, alternatively, in incubating with the residual marc. Herein, we aimed to evaluate the effect of micro-oxygenation on the ability of previously selected *S. cerevisiae* strains to decrease volatile acidity from spoiled wines, and on possible changes in the wine aroma during such a refermentation processes.

Both refermentation processes were carried out at a pilot scale (30 l), with an acidic wine with 2.80 g l<sup>-1</sup> acetic acid and applying micro-oxygenation (20 mg.l<sup>-1</sup>.h<sup>-1</sup> of O<sub>2</sub>). Our data show that oxygen availability is not a key parameter for glucose and acetic acid consumption, but increased the final biomass for both commercial yeast strains tested. Volatile acidity of the final wines decreased to 0.38 g l<sup>-1</sup> up to 0.68 g l<sup>-1</sup>, depending on the strain used. Combining analytical data (SPME coupled to GC-MS) with the sensorial analysis performed by a trained panel of 5 judges, the wines treated with micro-oxygenation revealed a vegetable character and mouth hardness in comparison to the more floral notes that predominated in wines obtained without micro-oxygenation.

Currently, the efficiency of volatile acidity removal by *S. cerevisiae* S26 entrapped cells in one layer alginate beads or in double layer alginate – chitosan beads is being evaluated. The results indicate that removal is dependent on the initial cell concentration in the beads which showed to be important for bead stability and prevention of cell leakage.