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Alcohol management of fine wines

By

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ABSTRACT

Increasing alcohol content in wines and growing public concern over alcohol induced health problems have made alcohol management* a concept of growing importance in the wine industry. In the current study, alternative and novel approaches have been suggested and studied for their possible use in alcohol management:

1. The role of grape rachis in alcohol reduction was studied by the introduction of different concentrations of sterilized rachis to fermentation vials and vials containing finished wines of different types. Ethanol content determined by HPLC showed a decrease of up to 1% by vol. and high correlation with rachis concentration, though quality assessment by HPLC, GC, Spectrophotometer and sensory analysis revealed some negative effects on wine quality. 2. Sets of fermentations for the selection of glycolytically inefficient *S. Cerevisiae* yeast were monitored for their kinetics and analyzed by HPLC for their ethanol, glycerol and residual sugar content. A reduction in final ethanol content of 0.58% by vol. was measured. The same yeast increased glycerol content by 1.6g/l (17.9%). 3. The use of 10 different *non-Saccharomyces* yeast strains in a sequential fermentation, followed by *S. Cerevisiae* inoculation, was examined. Fermentations were monitored for their kinetics and analyzed by HPLC for their ethanol and residual sugar content. Final ethanol content was decreased by up to 2.1% by vol. in comparison with a control fermentation of *S. Cerevisiae*. These results highlight the importance of further study on *non-Saccharomyces* yeasts and the adaptation of a winery-scale sequential fermentation process for alcohol management.

* Alcohol management – A global term for the set of techniques aimed for achieving a balanced wine by maintaining a moderate alcohol content.