

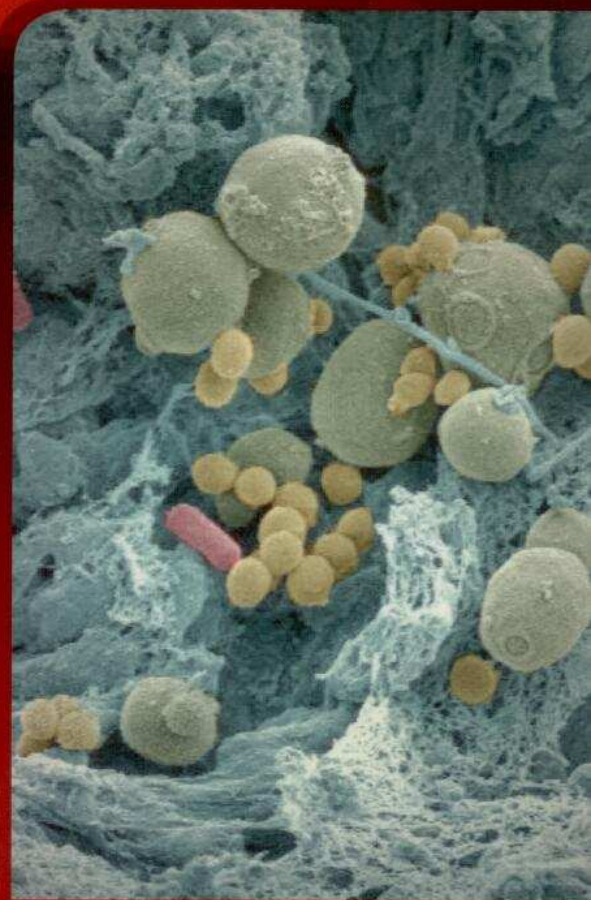
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Application of flow cytometry in the monitoring of yeast in oenological environment

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In this work we describe two application of flow cytometry (FCM) in the monitoring of yeast population during the winemaking process. This technique ensures fast and reliable results resulting an ideal tool in the quality control trough the wine productive process. We show an analytical method able to discriminate live and dead yeast cells, thanks to a double staining of cells obtained by two fluorescent dyes that underline the metabolic activity and the membrane integrity of yeast. This analytical approach was applied in 3 different situations.

Firstly we performed a quality control of Active Dry Yeast, comparing the features of FCM with that of OIV references method based on the plate count. In the second case, we applied the FCM to the monitoring of alcoholic fermentation in grape must. Finally the FCM was involved in the monitoring of production of sparkling wines by «champenois» method. Also in this case results were directly compared with those obtained by the two methods (plate counts and direct microscopic count) listed in the international OIV standards. In both experiments FCM has proved a valuable alternative to the traditional methods due to the easiness of execution of analysis, the large number of information provided, and the high quality of obtained results in terms of reproducibility, repeatability and confidence interval.