



# Proceso de elaboración de vino en Bodegas Jose y Miguel Martin. Fermentación por inversión térmica

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**Keywords:** wine; fermentation; temperature control; wine making process; organoleptic characteristics; thermal inversion

## ABSTRACT

In order to get wines of excellence, rigorous quality control are required during every step of the production. Continuous analysis for parameters such as grape maturation, alcohol content, density, pH, total acidity or volatile acidity are required to ensure wine quality. Moreover, some of these analysis are also required to reach the characteristics requested by the client and to fulfil current legislation (1).

Jose and Miguel Martin S.L. is a wine company located in Bollullos Par Del Condado, Huelva. It is dedicated to the production and aging of wines and their derivatives, as well as to the manufacture of oak barrels. To ensure the quality of their wines, this company have a full equipped laboratory where we have been analysing the evolution of grape, must and wine. Initially, a grape maturation control was carried out to determine the optimum stage for grape harvesting. Once in the wine cellar, sugar must density as well as SO<sub>2</sub> content was measured every day for many samples. Later, during fermentation, sugar density and yeast population (2), was analysed for every fermenter and for finished wines alcohol content, total and volatile acidity and heat and tartaric stability was also controlled. With these data, wine corrections were done to get the final desired characteristics for the wines (1, 3). Furthermore, a study to determine the effect of fermentation temperature on the organoleptic characteristics of wine was performed. A drop in temperature along fermentation, known as thermal inversion, was applied. With this, concentration for varietal thiol compounds (Ac3MH), as well as for other fermentative esters should be modified (4, 5). Thus, temperature-controlled fermenters were used to study the differences in the resulting wines produced with Zalema grape must. To this, one of the fermenter was kept at a constant temperature of 18 degrees during the whole fermentation, while in the other the temperature was lowered to 14 degrees, 4 days after the yeast fermentation started, remaining constant until the end of this process. Full analysis of chemical parameters was performed to the initial must before fermentation, to the wine when fermentation was completed, and later after wine clarification. Stability tests, both for protein and tartaric acid, was also assayed. Once the wine were stabilized and clarified, they have been stored and a final tasting will be carried out, to compare the organoleptic characteristics of both wines. The wine produced by thermal inversion should present an intermediate aromatic profile, with noticeable concentrations of varietal thiols (Ac3MH) and fermentative esters, while the wine produced by fermentation at 18°C should present a predominance of varietal thiols (4, 5)

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