

## **Estimation of the aroma potential of Grapes**

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### **Abstract**

Wine suffers important chemical transformations since the end of the fermentation process till the moment of consumption, whose object is the stabilization and maturation and fining of wine organoleptic character. Within this context, the goal of the work is to understand the wine ageing process as a result of different enological variables involved in the formation of sensory active molecules in wine. In particular, we aim to study the potential aromatic composition of wine as a function of its aroma precursor content along with the generation and degradation kinetics under the ageing conditions occurring in wine. For this purpose a series of model solutions supplemented with, either flavor precursors extracted from different grape varieties, or with pure aromatic compounds, were submitted to an accelerated ageing (45°C for 60 days) simulating maturation in the bottle. Volatile compounds derived from grape flavor precursors were extracted by SPE and determined by GC-MS after different times of ageing. The model wine spiked with the pure aromatic compounds was employed to monitor the hydrolysis kinetics and compounds stability. On the other hand, in the solution spiked with flavor precursors, major differences in concentration were observed during the first week of accelerated ageing. Most compounds exhibited an initial significant increase and further steady decrease in their concentrations. Results from this experiment were employed to establish a mathematical model to determine the number of aromatic compounds present at different moments of the ageing process.