

Oak barrel effects on Chardonnay wine composition [†]

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Abstract: The quality of a wine depends mainly on its chemical composition. Chardonnay wine is a flexible variety, which could be adapted to different growth regions, weather or soil characteristics. Oak barrels are used in the winemaking due to the oak size and shape of the annual circles insuring its durability. The purpose was to examine the effects of two types of oak and short ageing periods on Chardonnay white wine composition by using gas chromatography coupled to mass spectrometry (GC–MS), focusing on the identification of the volatile profile. It can be conclude that the time and method of ageing significantly influenced the concentration of alcohols in the samples. During ageing, the esters have interesting trends, most of them increasing in concentration compared with the initial wine, only hexyl acetate and trimethylene acetate decreasing. For white Chardonnay wine, the use of oak could prevent the oxidation of aromatic volatile compounds, in the same inducing oak notes to the wine without decreasing the fresh and fruity characteristics.

Keywords: oak, volatile profile, wine, winemaking