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## Malolactic fermentation in barrel or in steel tanks

**Kleopatra Chira**<sup>1,2,3</sup><sup>1</sup>University of Bordeaux, France<sup>2</sup>ISVV - Enologie, France<sup>3</sup>Tonnellerie Nadalié, France

Winemaking process must involve alcoholic fermentation, often followed by malolactic fermentation (MLF). Once MLF is completed, wine is subjected to clarification and stabilization treatments and is stored for aging in oak barrels. MLF and oak aging are two oenological processes which modify wine composition and sensory characteristics. MLF results in better balanced wines due to an acidity decrease and moreover, prevents microbial spoilage and improves wine's organoleptic profile by odor-active compounds production and the transformation of both grape and yeast derived volatile compounds and flavor precursors. Concerning oak wood aging, physicochemical reactions occur such as wood components extraction and interactions between wood components and wine. Wine composition is modified due to the wood extracted compounds and due to chemical reactions that take place when oxygen passes through wood pores or staves. Up to now, these processes are more familiar to red wine whereas scarce scientific research has been performed for the white. Using specific sample preparations, spectrophotometric methods, HPLC, GCMS and LCMS detection parameters and sensory analysis, red wines having realized MLF in barrel presented a greater amount of the principal oak wood aromatic compounds. Concerning sensory results, when MLF took place in barrels strengthened wine organoleptic preference and overall woody aroma was more integrated within the whole aromatic bouquet. As far as white wines are concerned, MLF realization in barrels did not change the perception of main aromas neither aromatic intensity and persistence nor mouthfeel volume or bitterness and did not confer higher overall woody aroma which may mask wine fruity character.

## Biography

Kleopatra Chira has completed her PhD from the Faculty of Oenology in Bordeaux University. She worked as Postdoctoral researcher for CIVB (Conseil Interprofessionnel du Vin de Bordeaux) and after for Nadalié cooperage. Since 2011, she is responsible for Research and Development of Nadalié cooperage and works like an Associate Researcher at Institut des Sciences de la Vigne et du Vin in Bordeaux University. She has published more than 25 papers in reputed scientific and technical journals and 46 papers/abstracts in international and national conferences.

kleopatra.chira@u-bordeaux.fr

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