



Thesis title: Role of gallic and ellagic tannins on composition and O₂ consumption kinetics of wine

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Abstract (max 300 words)

Topic position & objectives:

- a) Monitoring of oxygen consumption in two wines (Merlot and Pinot noir), where different commercial tannins (galla, oak and chestnut) are added
- b) Determination of phenolic composition in two red wines

Methods:

- a) Measurement of oxygen consumption by OxySense instrument
- b) Determination of total phenol index by the Folin-Ciocalteu method
- c) Spectrophotometry analysis of color by a Lambda 25 spectrophotometer (Perkin Elmer, Cetus, Norwalk, CT)
- d) High performance liquid chromatography
- e) Statistical analysis by means of STATISTICA software (Statsoft Inc., Tulsa, OK, US)

Results:

Significant parameters in term of time for Merlot wine, were conversion yield and mPD while in Pinot Noir, color intensity, hue and flavanol concentration. Among the treatments, the major role had galla and oak tannins thus chestnut had an influence on the hue. Oxygen kinetic was different among two red wines, with fast O₂ consumption by powders, providing the protection of wine phenols.

Main conclusions:

The addition of commercial tannins have an influence on phenolic profile during accelerated aging, as well as on oxygen kinetic.

Different results obtained among two red wines can support the fact that different wine composition have a huge influence during barrel aging.

Keywords (5):

Gallic tannins, ellagic tannins, proanthocyanidins, oxygen consumption, aging