

CA41: Changes in polyphenols with harvesting time and berry position in three native red grapes grown in Galicia (N.W. Spain)

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Red cultivars of *Vitis vinifera* L. are rich in flavonoid compounds, a group of polyphenolic compounds including anthocyanins, flavonols and flavan-3-ols. They are of great interest due to their important role in the quality of wines as well as their potentially beneficial effects on human health. Anthocyanins located in the berry skins are responsible for the red colour of berries and wines [1]. Flavonols contribute to the bitter taste as well as to the stabilization of wine colour through co-pigmentation with anthocyanins. Many factors may influence the phenolic composition such as cultivar, edaphoclimatic conditions, cultural and technological practices, ripening stage or the position of the berries into the bunch.

Anthocyanins are accumulated gradually in the skins during ripening but their concentration may decrease slightly during over-maturing [2]. Then, ripeness is the main factor affecting anthocyanin accumulation on berry skin. Flavonol concentrations in grapes were found to be highest at flowering followed by a decrease between flowering and berry set, and then they remained constant through berry development [3].

It is also well known that even within the same vine not all bunches have the same characteristics and it could observe differences in some parameters. For instance, the level of solar radiation is different depending on the position of the berries into the bunch, being an important parameter in the red coloration of berries. Significant differences in anthocyanin concentration between sun-exposed and shaded clusters of Cabernet Sauvignon were also [4]. More recently, some authors [5] reported that wines made from Pinot Noir clusters highly exposed to the sun had 60% higher anthocyanin concentration than wines from shaded clusters and 14% more than wines from moderately exposed clusters.

The main purpose of this work is to know the evolution of anthocyanins and flavonols during ripening, both in berry skin and flesh of three different red cultivars grown in Galicia (N.W. Spain), separating berries from apical parts of the bunches of those from basal parts. All this with the ultimate aim of contributing to select the optimum procedure for harvesting red grapevines (cultivar, harvesting time, and berry position) to produce quality red wines.

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