

F.21. THE PREDISPOSITION OF ORANGE WINES TO THE PINKING TEST

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Abstract. Oxygen, both in the atmosphere and dissolved in wine, has the ability to cause oxidative reactions in the phenolic compounds and proteins present in wine. This oxidation is not a benign process; on the contrary, it can compromise the stability of proteins, leading to their denaturation. As a result of these structural changes, protein breakdown can occur, forming cloudiness and precipitates in the wine. The oxidation of wines can lead to the phenomenon of pinkening, which gives Orange wine a pink hue instead of the amber tones characteristic of this type of wine. This may be due to the characteristics of the grape variety, production conditions such as temperature, contact time with the skins, the presence of oxygen, or other factors that affect oxidation and pigmentation. In his work, we researched Orange wines produced from Viorica and Rkațiteli grape varieties, focusing on the evolution of the long maceration process. To assess their susceptibility to pinkening, Orange wine samples were subjected to the Pinking test every month of maceration. The Pinking test is a complementary method for checking the susceptibility of wine to oxidation.

The spectrophotometric study of Orange wines with H₂O₂ in the Pinking test was performed at wavelengths between 400 and 700 nm. This approach allows for a more detailed highlighting of the chromatic changes that occur as a result of the oxidation process.

In the case of Orange wines made from the Viorica grape variety, the difference in absorption between the control samples and the treated samples gradually decreases as the maceration period is extended. In the first two months of maceration, a slight predisposition to pinking is still observed, but the values are still lower than the established limit. Thus, Orange wines after 1, 2, 3, 4, and 5 months of maceration show minor changes after oxidation, indicating superior chromatic stability and reduced susceptibility to pinkish discoloration. This effect may be due to the higher content of tannins and other antioxidant phenolic compounds extracted from the skin, which can act as inhibitors of the oxidative processes responsible for the appearance of pink hues. The absorption spectra recorded in the 400–700 nm range for the Rkațiteli wine samples, both control (untreated) and treated with H₂O₂, show significant changes in absorption, especially in the 400–500 nm range, indicative of oxidation reactions of phenolic compounds.

The results of the study confirm that prolonged maceration can contribute to increasing the oxidative and chromatic stability of Orange wines, reducing their susceptibility to the Pinking phenomenon. Thus, controlling the maceration duration represents an important technological factor in optimizing the quality and stability of these types of wines.

Keywords: Orange wines, grapes, pinkening phenomenon, oxidation, Pinking.

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