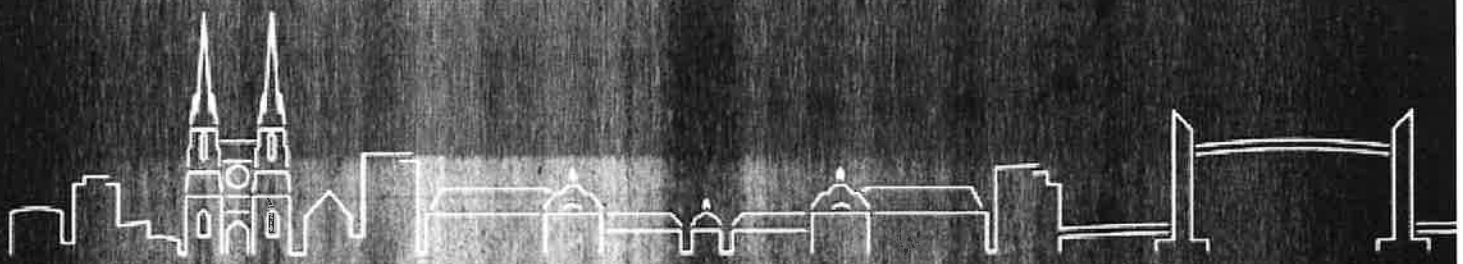

ŒNO Macrowine

BOOK OF ABSTRACTS

10-13 July 2023

Œno Macrowine 2023

Bordeaux KEDGE Businnes School

680 cours de la Libération

33405 Talence

III.P.32

INFLUENCES OF SO_2 ADDITION AND STORAGE CONDITIONS IN THE DETERMINATION OF MEAN DEGREE OF POLYMERIZATION OF PROANTHOCYANIDINS IN AGED RED WINES.

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Keywords: phloroglucinolysis, SO_2, proanthocyanidin mean degree of polymerization (mDP)

The structural diversity is one of the most remarkable characteristics of proanthocyanidins (PA). Indeed, PA in wines may vary in the B-ring and C-ring substitutes, the C-ring stereochemistry, the degree of polymerization (DP) and the linkage between the monomers. Knowing in detail the structural characteristics of the PA of a wine can help us to understand and modulate several sensorial characteristics of the wine, such as color, antioxidant properties, flavor, and mouthfeel properties. In the last years was discovered and confirmed the presence of sulfonated monomeric and oligomeric flavan-3-ols in wine [1], as well as was pointed out their importance in wine quality [1,2]. Aim of this work was to explore if and how the presence of the sulfonated PA can influence the wine PA profile and mDP, at different storage parameters. The sample set used included 5 single cultivar wines, four levels of SO_2 and two storage conditions, while all wines were analyzed by phloroglucinolysis reaction - UPLC-MS/MS recently published [3]. The results showed that after the phloroglucinolysis reaction the epicatechin sulfonate increased more than 30 times. The formation of the phloroglucinol adducts after the reaction is highly influenced for the storage conditions, and therebefore the mDP. The wines stored in cellar temperatures has the double of the concentrations of phloroglucinol adducts in comparison to the wines stored in room temperature. The inclusion of epicatechin sulfonate in the determination of mDP leads to lower values in all studied wines, highlighting the relevance of the sulfonated proanthocyanidins in the determination of this relevant parameter.

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2. *Arapitsas, P. et al.,2018. https://doi.org/10.1038/s41598-018-19185-5*
3. *Arapitsas, P. et al., 2021. https://doi.org/10.3390/molecules26041087*