Сојуз на хемичарите и технолозите на Македонија

Society of Chemists and Technologists of Macedonia

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BOOK OF ABSTRACTS

30th September - 2nd October 2021

Faculty of Technology and Metallurgy,

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CONTENTS

IMPACT OF DIFFERENT VINIFICATION METHODS ON THE POLYPHENOLIC CONTENT IN RED WINES

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Polyphenols are large family of naturally occurring, structurally diverse, organic compounds abundant in plants. Phenolic compounds such as anthocyanins, flavonoids and tannins are important constituents of red wine contributing to the taste, color, mouthfeel and quality. They are also associated with the health-promoting properties of red wine. The proportion of the different polyphenols in wine depends on grape variety, maturity, temperature of maceration and fermentation and of the type of vinification. In this study, total phenols (TP), total anthocyanins (TA) and colour parameters of *VitisVinifera*red wines Vranec and Pinot Noir from vintage 2020, produced in the Republic of N. Macedonia, have been evaluated. Wines from both varieties have been produced with two winemaking techniques, including classical fermentation and roto process in order to study and compare the effect of vinification. Total phenols were determined using the Folin-Ciocalteu method at 765nm and expressed as gallic acid equivalent (GAE, mg/l) [1]. Determination of the total anthocyanins was realized by the method proposed by Di Stefano et al. [2]. The samples were diluted with a solution consisting of 70/30/1 (*v/v/v*) ethanol/water/HCl (concentrated) and the absorbance was measured at 540 nm. Colour parameters, including color intensity (CI) and hue (H) were determined by direct measurement of the wine absorbance at 420 nm, 520 nm and 620 nm. It was found that variety has an influence of the phenolic content, observing higher content of TP and TA in Vranec wines (TP: 1690 mg/l, TA: 248 mg/l) in comparison to Pinot Noir (TP: 1120 mg/l, TA: 236 mg/l) regardless the vinification method. Considering the influence of winemaking method, it was observed that the roto process gives better results and higher content of total phenols and anthocyanins, observed in both varieties.

References:

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[2] R. Di Stefano, M. C. Cravero, *L'enotecnicoOttobre*, 25, **1989**, 81-87.

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