

INFLUENCE OF DIFFERENT VINIFICATION TECHNIQUES ON THE PHENOLIC CONTENT OF VRANEC WINES

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INTRODUCTION

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. In this study, total phenols (TP), total anthocyanins (TA) and colour parameters of *Vitis Vinifera* red wines Vranec from vintage 2020 (Fig. 1) produced in the Republic of N. Macedonia, have been evaluated. The wines have been produced with three winemaking techniques, including classical fermentation, roto process and punch down technique, in order to study and compare the effect of vinification on the phenolic compounds.



Figure 1. Vranec grapes

MATERIALS AND METHODS

- Total phenols - determined with Folin-Ciocalteu method at 765 nm and expressed as gallic acid equivalent (GAE, mg/l).
- Total anthocyanins - determined by dilution of wine with a solution 70/30/1 (v/v/v) ethanol/water/HCl (concentrated) at 540 nm.
- Color intensity (CI) and hue (H) were determined by direct measurement of the wine absorbance at 420 nm, 520 nm and 620 nm.

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RESULTS AND DISCUSSION

Table 1. Results for TP, TA, colour and hue in Vranec wines produced by different fermentation

Vranec wine	Punch down	Roto Fermenter	Classical Fermenter
TP (mg/L)	1720	1222	1198
TA (mg/L)	252	242	211
CI	22.1	21.7	20.8
Hue	6.2	6.0	4.0

Abbreviations: TP – total phenols, TA – total anthocyanins, CI – colour intensity

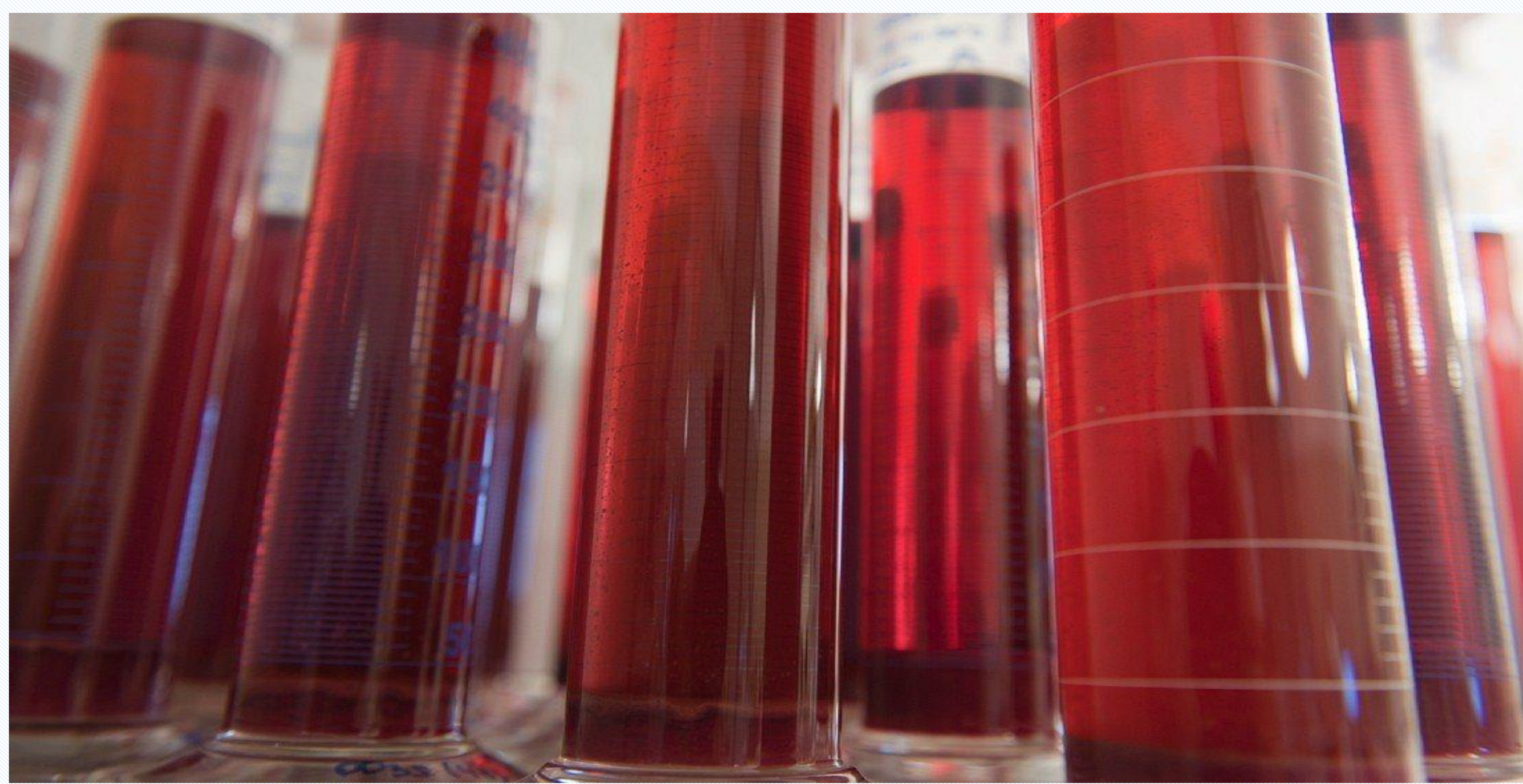


Figure 2. Vranec wines produced with different fermentation method

CONCLUSION

- ✓ Punch down process gave the best results and highest content of total phenols, anthocyanins and colour parameters, in comparison with the other two techniques of vinification.
- ✓ Wines have deep red colour and stability.

