

- **Study of the influence of maceration time and oenological practices on the aroma profile of Vranec win**

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**Abstract:**

Vranec is one of the most important red grape varieties in Republic of Macedonia, grown in all vineyards, mostly in the Tikveš wine region. In this study, Vranec wines produced with different maceration times (4, 7, 14 and 30 days) in presence of enzyme and oak chips during fermentation were studied in order to determine the influence of vinification conditions on the aroma profile. The volatile compounds were determined using headspace solid phase microextraction (HS-SPME) with a PDMS/Carboxen/DVB fibre, coupled with gas chromatography–mass spectrometry (GC–MS). In total 63 aroma compounds were detected revealing a complex aroma profile of Vranec wines composed of esters, alcohols, fatty acids, aldehydes, ketones and sulphur compounds. The content of aroma compounds was related mostly to maceration time, observing increased relative amount of alcohols, esters and fatty acids from the fourth to seventh day of maceration and the presence of oak chips during the fermentation enhanced their formation. The Student–Newman–Keuls test has been applied to ascertain possible significant differences between the studied wines, and principal component analysis has been employed, showing separation and grouping of the wines according to maceration time and oak chips treatment.

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