

CHANGES IN COMPOSITION AND CONTENT OF ANTHOCYANIN DURING THE RIPENING PHASE OF GRAPES



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INTRODUCTION

During the development and growth, grape berry undergoes through different phases. During the ripening chemical changes are significant among them anthocyanin biosynthesis is quite important. The period of a particular phase is significantly affected by genotype and environmental conditions. This study was conducted on autochthonous red grape varieties and on 'Merlot'. Grape samples were collected at distinct stages starting from veraison up to technological maturity. The goal of this research was to determine variations in anthocyanins content among grape varieties and during the ripening, as well.

MATERIALS AND METHODS

SAMPLING

11 autochthonous Croatian varieties and 'Merlot'

Veraison

Approximately every 10 days

Technological maturity

ANALYSIS

Extraction

HPLC Analysis of individual anthocyanins

Anthocyanins content (mg/kg dry weight)

RESULTS

- The lowest content of all the analyzed compounds was determined in samples collected in the veraison, indicating that at this point the biosynthesis of these compounds is occurred. In later periods, significant increases of all individual compounds were observed.
- The highest increase of content was observed in the case of malvidin-3-O-glucoside while the lowest was for cyanidine-3-O-glucoside.
- In some varieties the highest value of all analyzed anthocyanins was determined at the time of technological maturity and in the other 2 weeks earlier

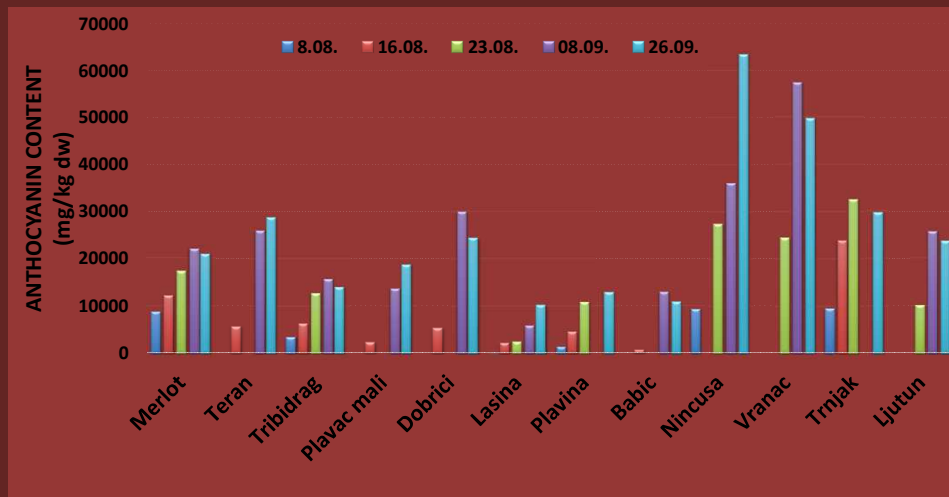


Figure: Changes in content of anthocyanins during ripening of 11 autochthonous varieties and 'Merlot'. Results are expressed as a sum of individual anthocyanins determined by HPLC.

CONCLUSION

- The dynamics of anthocyanins content increase significantly depends upon the compound, the developmental stage and the genotype.
- The highest determined content of individual anthocyanins was significantly dependent on the stage and the genotype