

POLYPHENOLIC COMPOSITION OF DALMATIAN GRAPEVINE VARIETIES GROWN UNDER CONTINENTAL CLIMATE



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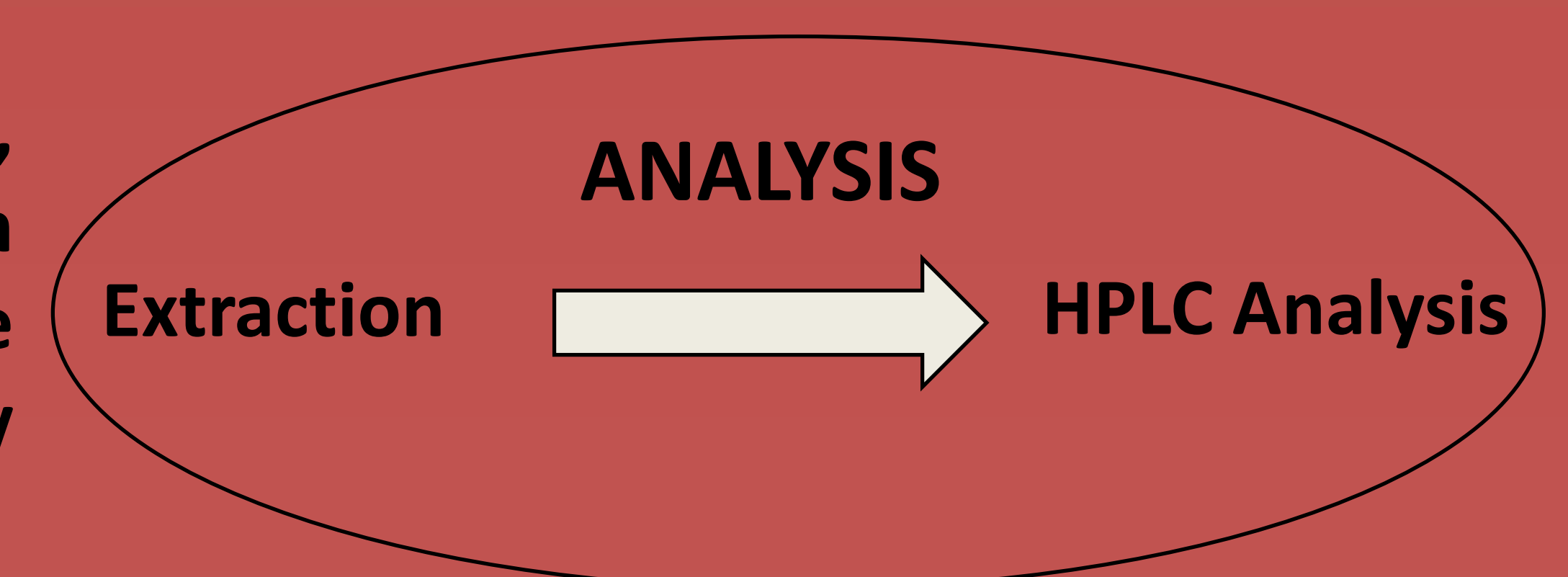
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INTRODUCTION

Much of the data acquired during the last few decades suggests that climate changes are taking place. These climate changes, in particular increasing temperatures, have important consequences on viticulture and different approaches have been proposed for adaptation. Shifting of grape varieties growth from their traditional sites towards a cooler climate is one of them. In Croatia, there are 125 autochthonous grape varieties among them 38 red ones. The great majority of red grape varieties are native to the Coastal Croatia region, belonging to the wine growing zone CII and Mediterranean climate. The aim of this study was to investigate the content and composition of individual polyphenolic compounds of 11 Dalmatian varieties which were growing in Zone B with continental climate.

MATERIALS AND METHODS

The following native grapevine varieties were studied: Teran, Tribidrag, Plavac mali, Dobričić, Lasina, Plavina, Babić, Ninčuš, Vranac, Rudežuša and Ljutun. Since Merlot is used in continental climate for production of high quality red wines, it was used for comparison. The grape berries were sampled in year 2017 at ripening stage (from veraison to full ripeness) from the vineyard located at the Experimental station Jazbina (Zagreb), Faculty of Agriculture, University of Zagreb.



RESULTS

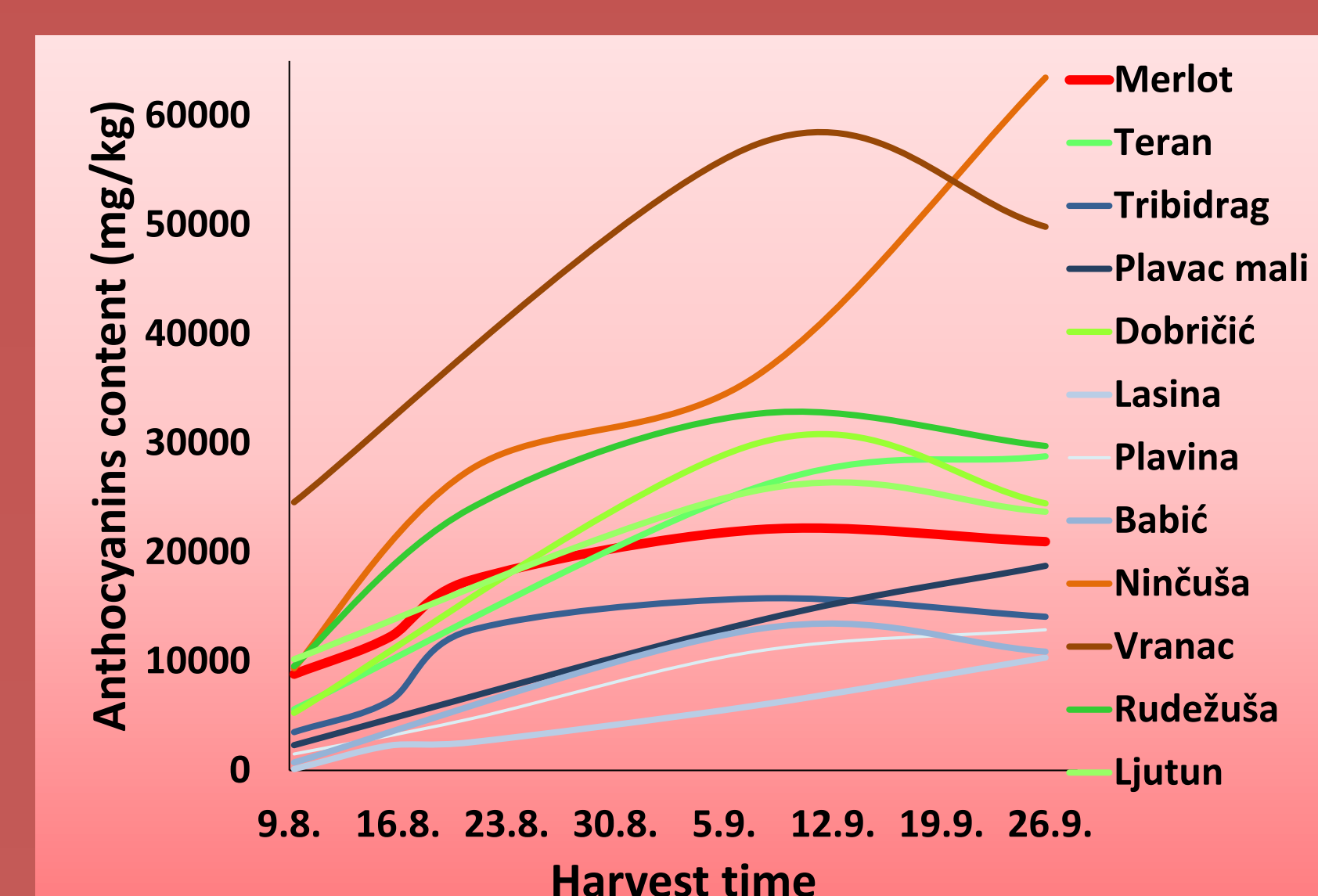


Figure 1. Anthocyanins content of grape berries grown under continental climate

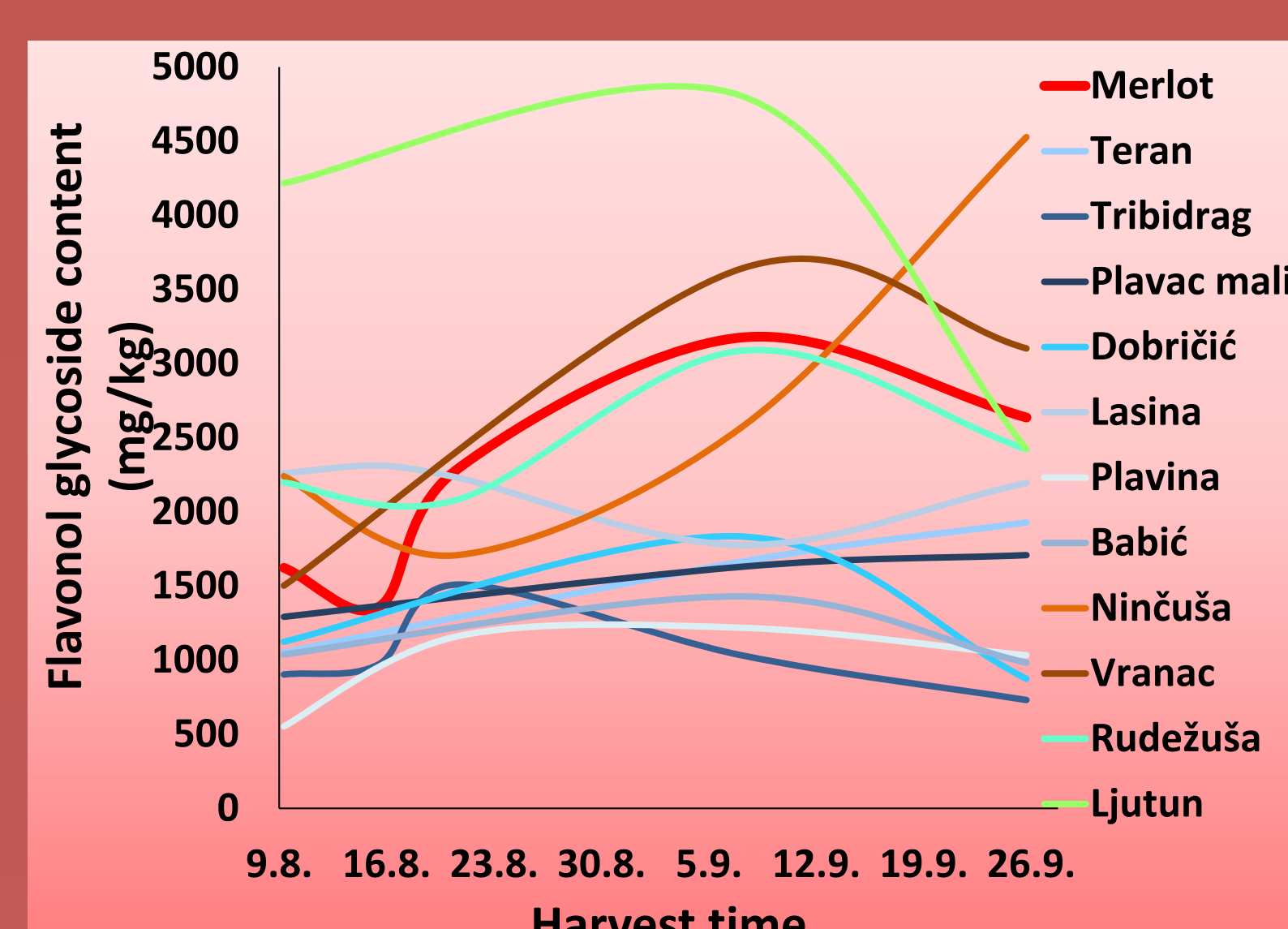


Figure 2. Flavonol glycosides content of grape berries grown under continental climate

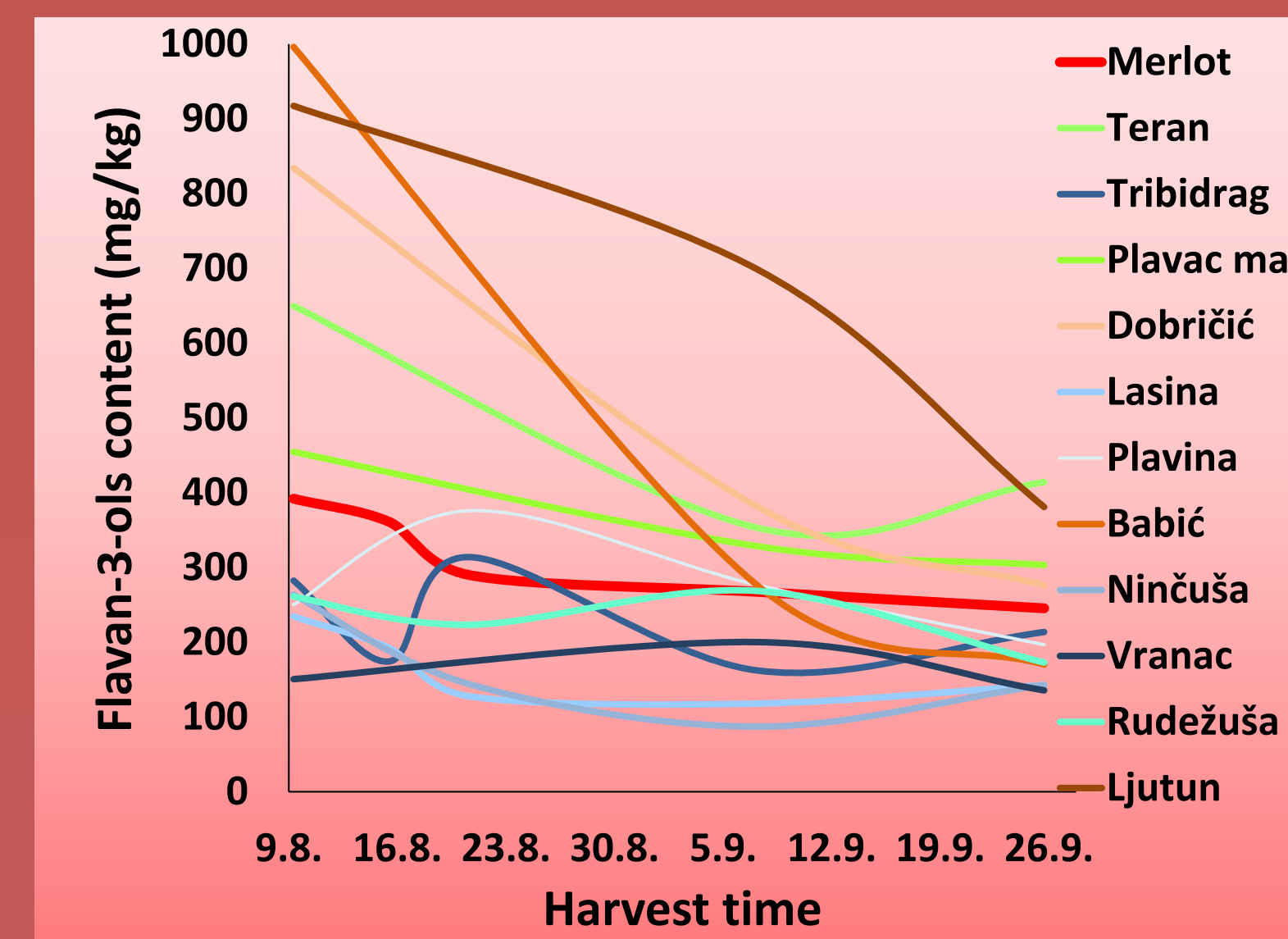


Figure 3. Flavon-3-ols content of grape berries grown under continental climate

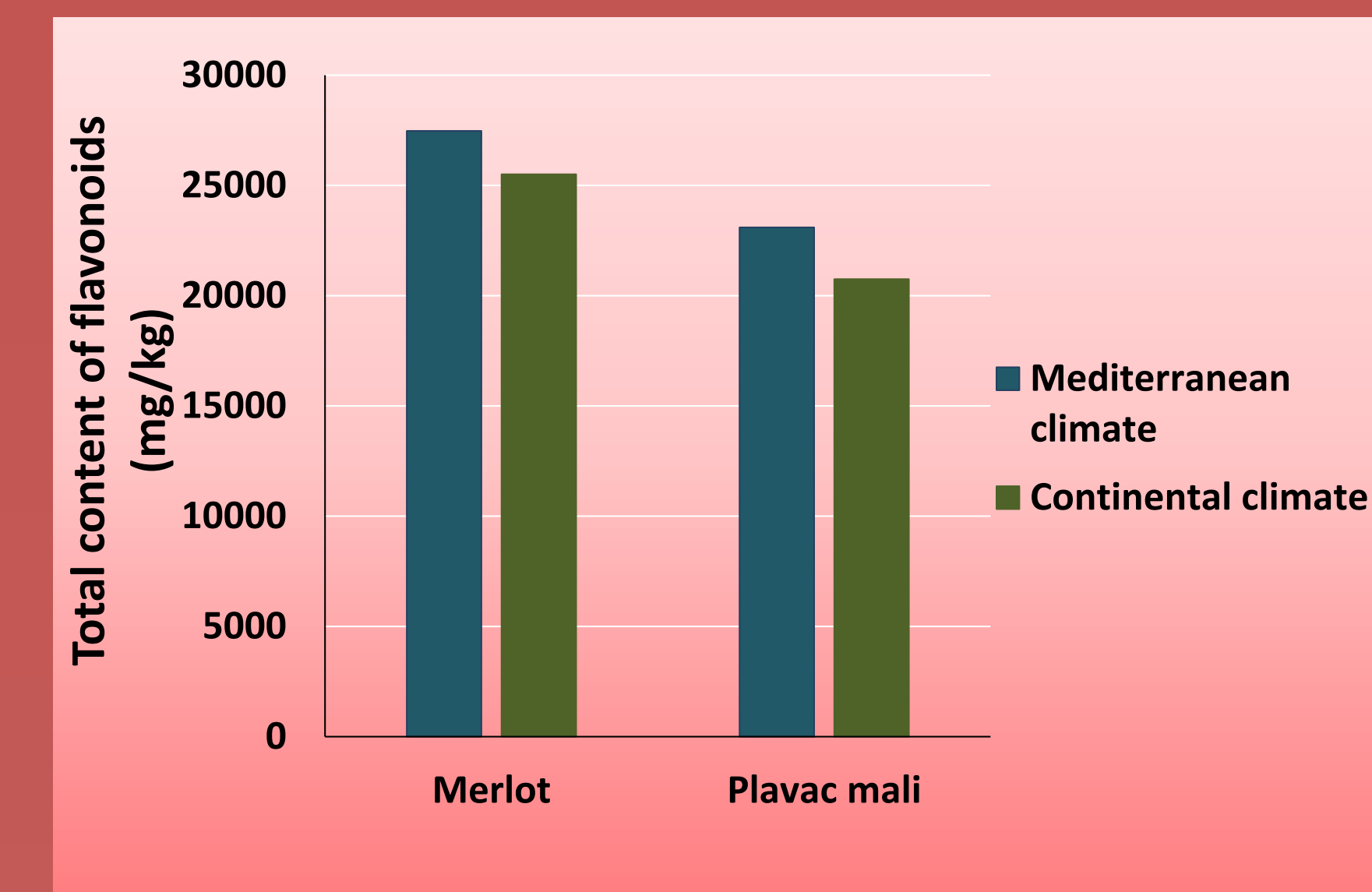


Figure 4. Total content of flavonoids of grape berries harvest at full ripeness

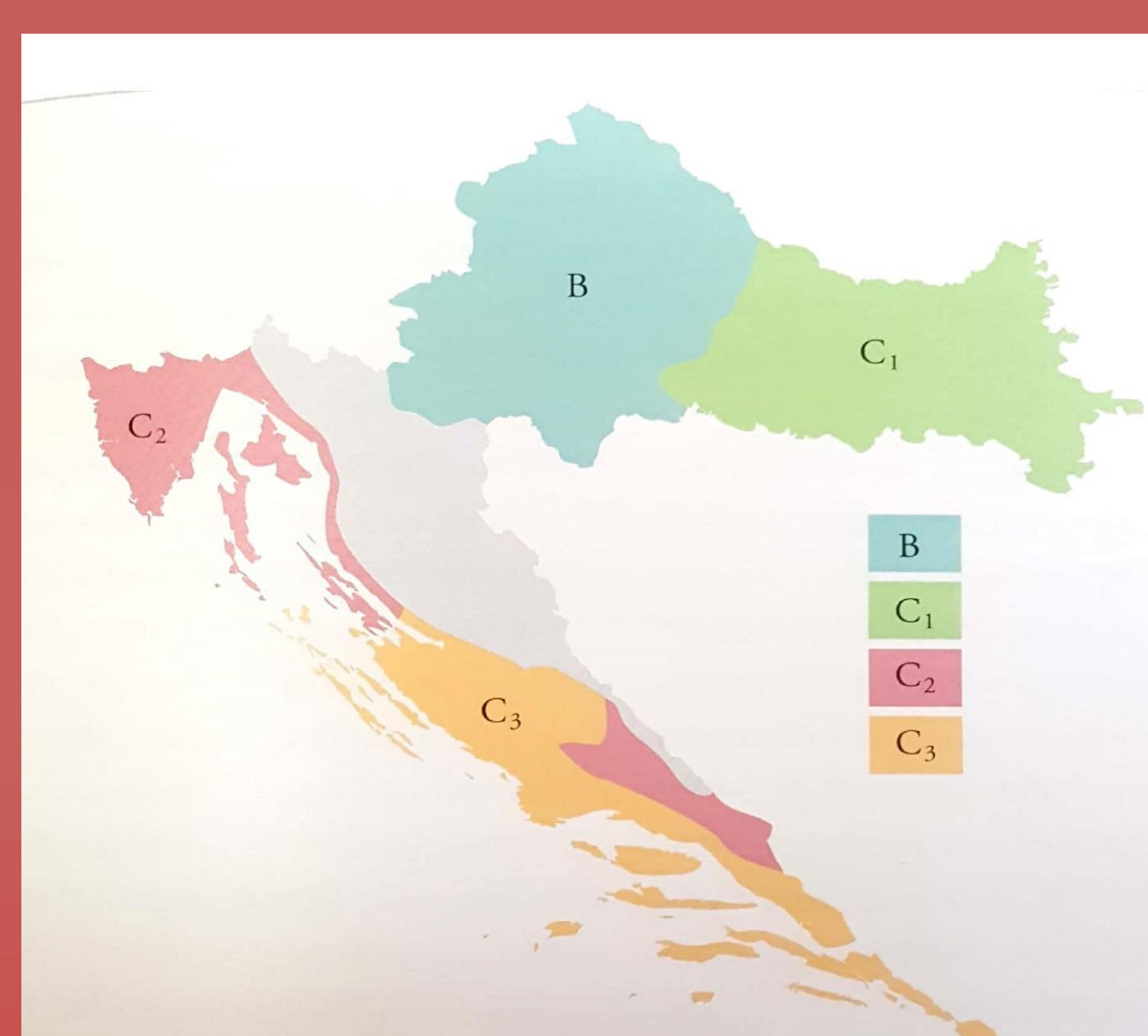


Figure 5. Viticulture climate zones in Croatia

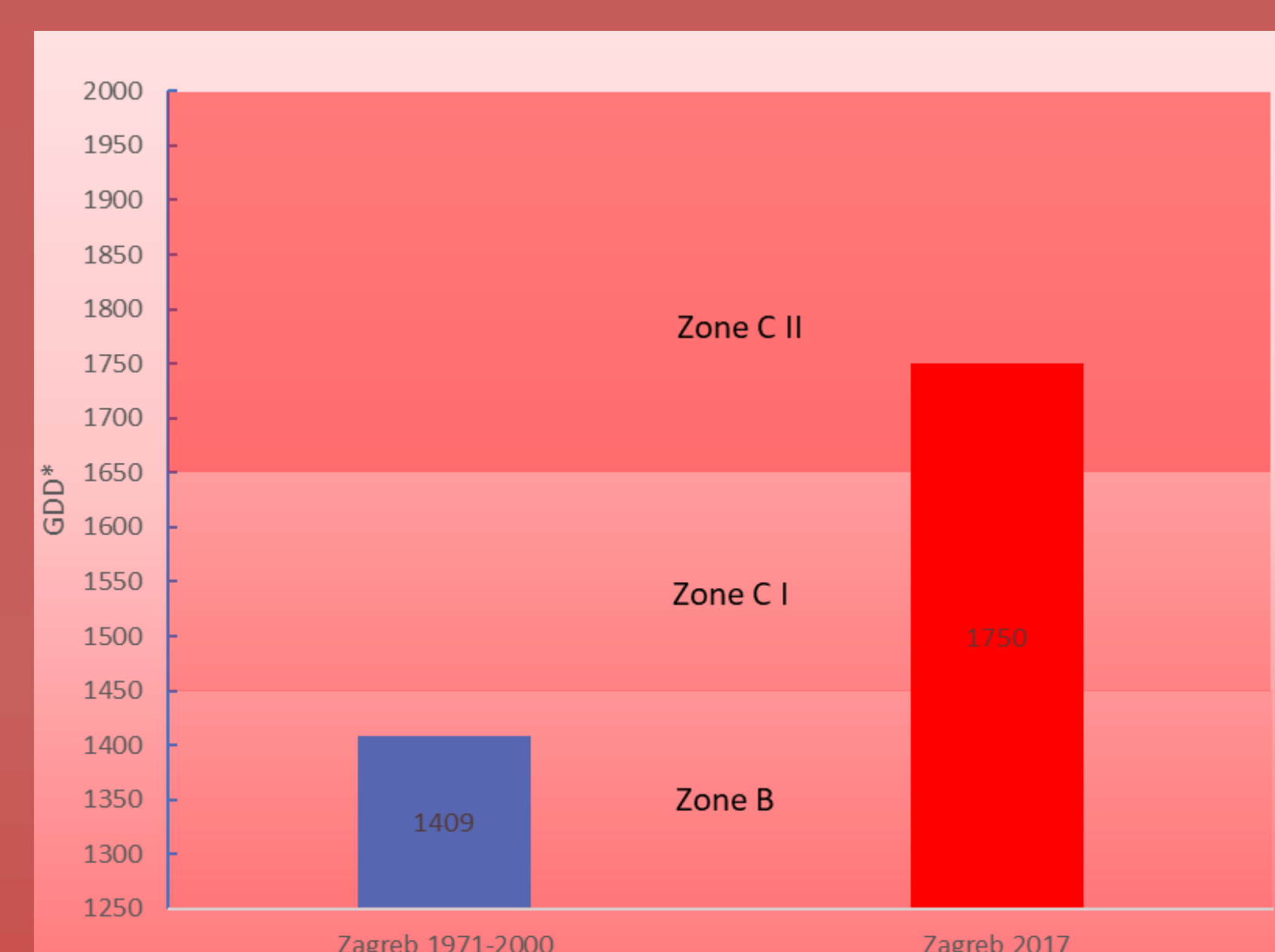


Figure 6. Change in GDD for Experimental station Jazbina (Zagreb) between 30 years average and year of research (2017)



Figure 7. Vineyard in Mediterranean climate (Island Vis, Dalmatia)



Figure 8. Vineyard in continental climate (Experimental station Jazbina, Zagreb)

CONCLUSION

- This study confirmed significant differences among Croatian grape varieties in content of analyzed polyphenolic compounds.
- More than half of native varieties had higher anthocyanins content than Merlot, confirming that they can be considered suitable for wine production in continental Croatia.
- Content of other groups of polyphenolic compounds was also comparable to the previous studies in Mediterranean climate.
- Croatia has rich grapevine genetic resources which can be used for adaptation to climatic changes.

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