



Volatile Profile of Grašac Wines Produced with Different Commercial Inactivated Yeast Derivatives

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The aim of this study was to investigate the influence of different commercial inactivated yeast derivatives (IYDs) on the volatile profile of wine during aging. The study was performed with Grašac grapes from Srem wine region (Serbia). After fermentation was complete, wine samples were treated with different IYDs in two doses. After the six-month aging period, the volatile profile of wine samples was analyzed using HS-SPME-GC-MS method.

The results showed that esters were the major volatile compounds, with ethyl acetate and 2-phenyl ethyl acetate being the most abundant among all samples, followed by ethyl dodecanoate, ethyl decanoate and 3-methyl-butyl-octanoate, all of them contributing to different fruity and floral aromas. The major higher alcohol phenyl-ethyl alcohol was notably above its odor threshold level in most samples at both time marks. As the concentration of IYDs applied increases, we observe a corresponding rise in the levels of certain volatiles. In addition, most of the IYDs applied helped to preserve or, even more, increase the amounts of specific volatiles during the aging period. PCA analysis showed clear separation among the Grašac wine samples, while it was found that samples treated by the same IYDs, regardless of the concentration, were relatively similar and distributed closer to each other in the PCA plot.

The findings indicated that wine can be influenced differently by various types of IYDs, each serving a specific purpose. This information equips winemakers with the means to precisely control and attain the intended sensory characteristics of the wine.

Keywords: yeast derivatives, wine aging, Grašac, volatile composition

Acknowledgement: Ministry of Science, Technological Development and Innovations of the Republic of Serbia (grant no: 451-03-47/2023-01/ 200133).