

CHEMICAL COMPOSITION, PHENOLIC COMPLEX AND ANTIOXIDANT ACTIVITY OF WHITE WINES PRODUCED IN CONTACT WITH OAK WOOD¹

Assoc. Prof. Tatyana Yoncheva, PhD

Assoc. Prof. Dimitar Dimitrov, PhD

Department of Vine Selection, Enology and Chemistry

Institute of Viticulture and Enology – Pleven, Bulgaria

Agricultural Academy

E-mail: t_ion@abv.bg

E-mail: dimitar_robertov@abv.bg

Abstract: The oak wood impact, during aging in a barrel, on the characteristics of three white wines of the Chardonnay and Riesling varieties was studied. The samples were from different vintages, producers and regions of Bulgaria. They were produced in contact with different species of wood and duration of storage. Their chemical composition was determined in terms of the main chemical indicators, phenolic complex and antioxidant activity. The influence of the barrel was established mainly on the wines' phenolic content and antioxidant potential. Chardonnay, 2020 vintage stood out for its richer phenolic composition and higher content of the investigated phenolic components (total phenolic compounds TPC, flavonoid phenolic compounds FPC, non-flavonoid phenolic compounds NPC, total phenolic index TPI). The sample was aged in Bulgarian barrels for 24 months. Of the wines, 2021 vintage, a higher concentration of TPC and NPC was found in Chardonnay, and more FPC and TPI in Riesling. The Riesling and Chardonnay samples from the Danube Plain showed similar antioxidant activity, while Chardonnay, 2020 vintage, had the lowest potential, despite the identified higher phenolic content.

Keywords: White wine, Oak wood, Chemical composition, Phenolic complex, Antioxidant activity.

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