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BOOK OF ABSTRACTS

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HPLC ANALYSIS OF HYDROXYCINNAMIC ACID DERIVATIVES IN SMEDEREVKA AND CHARDONNAY WINES

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A reversed phase liquid chromatographic method for identification and quantification of hydroxycinnamic acid derivatives was used to analyze their content in Macedonian white wines, Smederevka and Chardonnay (Vitis vinifera L.) produced under different vinifications. Winemaking procedures for both varieties included addition of two doses of SO_2 (50 and 100 mg/L) and two yeasts for fermentation (Vinalco and Levuline). Separation of the components by direct injection into HPLC was performed using reversed-phase Atlantis dC18 column, monitored at 320 nm, and the mobile phase consisted of water/formic acid (99:1; solvent A), and acetonitrile/water/formic acid (80:19:1; solvent B). The main phenolic acids present in the wines were caftaric acid (caffeoyltartaric acid) and coutaric acid (coumaroyltartaric acid). In addition, HPLC-MS analysis was carried out to confirm the identity of the separated compounds, recording the spectra in negative ion mode. In general, differences in their contents in Smederevka and Chardonnay wines were observed. Thus, Chardonnay wines were richer in phenolic acids compared to Smederevka wines. The dominant component in Chardonnay wines was *trans*-caftaric acid, while, *trans*-coutaric dominated in Smederevka wines. Regarding the influence of SO_2, it was observed that wines with higher dose of SO_2 contained higher levels of acids, since SO_2 suppress the activity of oxidases, preventing oxidation of these readily oxidizable phenols and wine browning. The influence of the yeast on the content of phenolic acid derivatives was not significant. Principal component analysis was performed in order to check if the studied wines can be distinguished, showing separation of the samples according to the variety and SO_2 doses.

Keywords: Hydroxycinnamic acids; Smederevka; Chardonnay; winemaking; HPLC-DAD-MS

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