

Influence of glycosidases addition on selected monoterpenes contents in musts and white wines from two grape varieties grown in Poland.

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Streszczenie

Amount of monoterpene alcohol and their glycoside precursors in grapes is determined by the type of grapes, and the availability of specific hydrolytic enzymes during the manufacturing process. Addition of these enzymes, hydrolysing β -glycosidic bond, to the grape can be used to increase the potential of aromatic raw material, releasing odoriferous aglycons from non-volatile glycosides and in consequence to enhance the flavour of white wines. In this study complex enzyme preparations AR2000 and Rapidase X-Press were used as a supplement to the musts. Two white grape varieties (Nachodka and Perła Zali) grown in Golesz vineyard in Jasło were used for winemaking. Aglycone analysis was conducted on the basis of fast acid hydrolysis and solid phase extraction (SPE-C18) with subsequent GC-MS analysis. Wines treated with enzymes and without enzyme treatment were prepared. Dominating terpenes (linalool, nerol, geraniol, β -citronelol, α -terpineol) were quantified in this study. Amount of free terpenes was comparable in musts of both varieties (42.7 $\mu\text{g/L}$ for Perła Zali, 46.3 $\mu\text{g/L}$ for Nachodka), however Nachodka had 228.9 $\mu\text{g/L}$ of bound terpenes, compared to 88.8 $\mu\text{g/L}$ in Perła Zali. Addition of glycosidases to musts resulted in an approximately 50 $\mu\text{g/L}$ increase in investigated monoterpenes in Perła Zali and appr. 100 $\mu\text{g/L}$ in Nachodka. Total amount of monoterpenes decreased after 6 months storage, however their levels in enzyme treated wines were significantly higher than in control samples. Enzyme treated wines were evaluated by sensory panel and perceived different from control samples with more pronounced selected notes mainly fruity and floral. Addition of enzymes can be used to improve the flavour of white wines produced from the average quality of raw material, influencing the increase in aromatic terpene alcohols. However, one must keep in mind that the changes in amount of released flavour compounds caused by the addition of enzymes may not always have a positive effect.

Słowa kluczowe

white wines, glycosides, monoterpenes, SPE, GC/MS

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