

Aromatic profile of grape and fruit brandies determined by GC equipped with flame ionization detector

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Grape brandy represents a significant segment of traditional production, with a pronounced economic and cultural value in Macedonia. It is an alcoholic beverage obtained by fermentation and distillation of grape mash from the cultivated vine *Vitis vinifera*. Moreover, fruit brandies are obtained by fermentation and distillation of their representative fruit mash. The quality of the brandy depends on several factors, such as: the variety of grape or fruit, climate, soil conditions, fermentation process, distillation time and technique, as well as the maturation period.

In this study, Various groups of aromatic compounds, including alcohols, esters, aldehydes, have been identified in 52 grape and 15 fruit brandies. All grape brandy samples were produced in domestic and traditional distillation conditions from various grape varieties, such as: Vranec, Temjanika, Muskat Hamburg, Rkaciteli, Smederevka, Afus Ali, Plovdiva, Prokupec, Traminac, Risling and Pinot Noir. The fruit brandy samples were produced from plum, apricot, peach, Red Delicious apple, Dzanka plum and Ohrid cherry. Additionally, samples of Mastika and Gin were included in the study. Analysis of aromatic compounds was performed using GC Equipped with flame ionization detector. The key aromatic compounds determined included acetaldehyde, esters (ethyl acetate, propyl acetate, ethyl lactate, isoamyl acetate), higher alcohols (1-propanol, 1-butanol, 2-methyl-1-butanol, 2-phenyl ethanol, hexanol, isobutanol) and methanol. Among the esters, ethyl acetate was dominant in fruit peach brandy. Regarding alcohols, 2-methyl-1-butanol was the most Prevalent in the Aromatic Temjanika grape brandy. High levels of methanol, as undesirable component, were observed in plum (Dzanka) brandy.

Keywords: grape brandy, fruit brandy, aroma compounds, GC-MS

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