



“Gheorghe Asachi” Technical University of Iasi, Romania



VOLATILES IN *TĂMÂIOASĂ ROMÂNEASCĂ* VIA SUPERCRITICAL FLUID EXTRACTION (SFE) ANALYSIS

Lucia Cintia Colibaba¹, Valeriu V. Cotea^{1*}, Liliana Rotaru¹, Bogdan Nechita^{1,2},
Marius Niculaua², Stefan Tudose-Sandu-Ville¹, Camelia Luchian¹

¹“Ion Ionescu de la Brad” University of Agronomic Sciences and Veterinary Medicine Iasi,
3 M. Sadoveanu Alley, 700490 Iasi, Romania

²Oenological Research Center – Iasi Branch of the Romanian Academy, 9 M. Sadoveanu Alley, Iasi, Romania

Abstract

Wine analysis is a complex process, requiring multiple techniques and very in-depth multidisciplinary knowledge. Moreover, when talking about sensorial potent wines, like *Muscat* or *Tămâioasă Românească* (from aromatic Romanian grape variety), the identification and characterization of its volatile compounds is achieved through different methods, most calling for powerful solvents to separate the aroma substances.

Supercritical fluid extraction is a powerful technique with great promise in organic analytical chemistry. To date, little has been published on the use of SFE in the analysis of wine aromas.

The main objective of this study is the analysis of volatiles in samples of *Tămâioasă românească* wines through a custom-made SFE method. The wine variants have been obtained by applying the general technological processes for aromatic wines, using specific oenological products. An in-house SFE analysis method was developed and applied, the obtained extracts were then analyzed by gas chromatography coupled to mass spectrometry (GC-MS) to identify the captured compounds.

Regarding the total number of findings in respect to volatiles, the highest concentrations occur with low molecular weight alcohols, esters and acetic acid. Besides, there were also identified other volatile compounds, such as terpenoides and phenols. These specific compounds originate from the grape variety and give the “varietal” character to the wines.

Key words: supercritical fluid extraction, *Tămâioasă Românească*, volatiles, wines

Received: November, 2014; *Revised final:* February, 2015; *Accepted:* February, 2015

* Author to whom all correspondence should be addressed: e-mail: vcotea@uaiasi.ro; Phone: +40 232407519; Fax: +40 232407519