Aromatic compounds profile of DOC Piedmontese wines by HS-SPME-GC-MS

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Purpose of the work: determination of aromatic profile of wines

Wine aroma is the result of hundreds of volatile compounds already present in grapes and originating from fermentation and wine aging. Wine aroma is crucial in determining organoleptic features and quality of wine. Determination of the aromatic profile of wines gives the producers the opportunity to control the production in order to obtain a great varietal tipicity and quality. Moreover, it enables wine characterization and differentiation, which is fundamental for wine authenticity control and to prevent frauds.

Experimental method: HS SPME GC-MS

By hyphenated GC-MS technique (Focus GC DSQ Thermo corporation-single quadrupole) we determined the aromatic profile of some typical Piedmontese hilllock wines. Volatile molecules were extracted by means of headspace microextraction with a triphasic fiber (CAR/PDMS/DVB 30/50µm). This is a fast, efficient and economic extraction technique [2]. In SPME, equilibria are achieved among analytes, sample, headspace and fiber. Low detection limits are gained although with an high resolution. SPME provides linear responses even with high concentrations [3].

Bibliography:

Experimental results will be processed by high-quality chemometric techniques in order to achieve wine differentiation based on varietal origin and harvest year. At the beginning research will be focused on some typical Piedmontese wines [4]. Results will represent an identity card of products very useful for traceability and hopefully to prevent food frauds.