

Correlation between instrumental and sensory analysis for the characterization of *Vitis vinifera* wines

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Abstract

In this work, sensory analysis of was used to evaluate the wine aroma character with different aroma attributes according to Norm ISO 11035.¹ In parallel wine volatiles were identified and quantified by gas chromatography according the methodology proposed by Oliveira *et al.* (2006).²

The objective of this work was to study the correlation between instrumental analysis and sensory perception of wine constituents.

Thirty-five *Albariño* white young wines from 2006 vintage were evaluated by GC-FID and sensory analysis by trained and native panel composed by 10 wine tasters from Appellation of Origin *Rias Baixas* (Galicia, Spain). Forty volatile compounds were identified and quantified by Gas Chromatography and forty-seven aroma descriptors were developed using quantitative descriptive analysis and evaluated with line scaling method.

Principal component analysis showed the distribution of the wines in basis to chemical and sensory characteristics. The correlation coefficients of the flavour scores between sensory evaluation and instrumental analysis ($R^2 > 0.50$) were found for methanol–lactic–vanilla, guaiacol–honey, 3-methyl-1-propanol–green-pepper, 1-butanol–liquorice, ethyl lactate–green-pepper–liquorice. These correlations linking chemical compounds and sensory descriptors may be attributed to possible relations between them, to the presence of other produced compounds which were not analysed or, to some associations among the analysed compounds.

References:

¹Norm ISO 11035 (1994) Sensory analysis. Identification and selection of descriptors for establishing a sensory profile by a multidimensional approach

²José M. Oliveira, Marta Faria, Filipa Barros, Isabel M. Araújo (2006) C₆-alcohols as varietal markers for assessment of wine origin, *Anal. Chim. Acta* 563:1-2, 300-309