

Influence of polysaccharide commercial product addition on volatile composition of white sparkling wines

Leticia Martínez-Lapuente,^a Zenaida Guadalupe,^a Belén Ayestarán,^a Miriam Ortega-Heras,^b Marta Bueno-Herrera,^b and Silvia Pérez-Magariño^b

a) Instituto de Ciencias de la Vid y del Vino (Universidad de la Rioja, Gobierno de La Rioja y CSIC), C/ Madre de Dios 51, 26006, Logroño, La Rioja, España; b) Instituto Tecnológico Agrario de Castilla y León, Consejería de Agricultura y Ganadería. Ctra. Burgos Km. 119. 47071, Valladolid, España; e-mail: leticia.rioja@hotmail.com

Natural sparkling wines are obtained after a second fermentation in closed bottles, and they remain in contact with the yeast lees for at least 9 months. During sparkling wine aging, different compounds such as polysaccharides can be released due to yeast autolysis that can cause important changes in wine composition, affecting the quality of sparkling wines. Yeast autolysis is a slow natural process that takes long time. Therefore, the aim of this work was to study the effect of the addition of several commercial products rich in polysaccharides and/or mannoproteins on the volatile composition of white sparkling wines elaborated from two white grape varieties (*Godello* and *Verdejo*), and aged for 9 months. The volatile compounds were analyzed by gas chromatography coupled to a mass detector, after a previous liquid-liquid extraction.^[1] The polysaccharide and monosaccharide composition of the commercial preparations was determined by GC-MS of their trimethylsilyl-ester O-methyl glycosyl residues obtained after acidic methanolysis and derivatization.^[2]

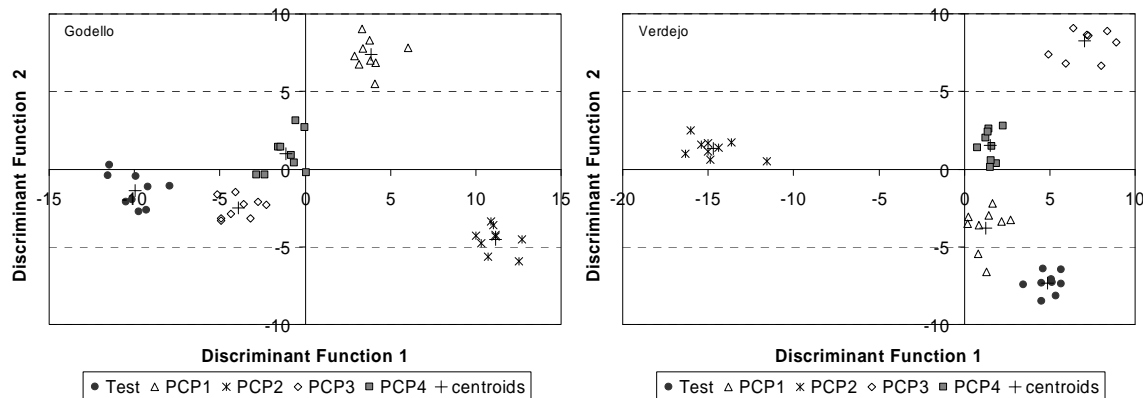


Figure 1. Distribution of wines in the plane defined by the first two discriminant functions. Test: control wines; PCP: wines treated with polysaccharide commercial products

The discriminant analysis indicated that the wines treated with PCP2 showed the highest differences in the volatile composition of both sparkling wines studied, being the ethyl esters, alcohol acetates and terpenes the compounds that were affected in a greater extent. PCP2 was the product with the highest percentage of mannoproteins.

[1] Rodríguez-Bencomo, J.J.; Ortega-Heras, M.; Pérez-Magariño, S. *European Food Research and Technology* **2010**, *230*, 485.

[2] Guadalupe, Z.; Martínez-Pinilla, O.; Garrido, A.; Carrillo, J. D.; Ayestarán, B. *Food Chemistry* **2012**, *131*, 367.

The authors thank the INIA for financing this study through the project RTA2009-029-C02.