Desalination and Water Treatment
www.deswater.com

27 (2011) 167–174
March

1944-3994/1944-3986
doi: 10/5004/dwt.2011.2039

Sugar reduction in white and red musts with nanofiltration membranes

Noemi García-Martín[a], Silvia Perez-Magariño[b], Miriam Ortega-Heras[b], Carlos González-Huerta[b], Mihaela Mihnea[c], María Luisa González-Sanjosé[c], Laura Palacio[a], Pedro Prádanos[a], Antonio Hernández[a,*]

[a]*Grupo de Superficies y Materiales Porosos (SMAP, UA-UVA-CSIC), Departamento de Física Aplicada, Facultad Ciencias, Universidad de Valladolid, 47071 Valladolid, Spain*
Tel. +34 983 42 31 34; Fax: +34 983 42 31 36; email: tonhg@termo.uva.es
[b]*Consejería de Agricultura y Ganadería, Instituto Tecnológico Agrario de Castilla y León, Estación Enológica, C/Santísimo Cristo, 16, 47490 Rueda, (Valladolid), Spain*
[c]*Departamento de Biotecnología y Ciencia de los Alimentos, Universidad de Burgos, Plaza Misael Bañuelos s/n, 09001 Burgos, Spain*

Received 27 May 2010; Accepted 8 March 2011

ABSTRACT

In recent years the alcohol content of wine increases mainly due to climate change. Moreover, at present, consumers are increasingly demanding more aromatic and less alcoholic wines, it is due to the greater social awareness in the alcohol consumption and the regulations of the alcoholic products. The aim of this work is the reduction of sugar in the grape must to obtain wines with a slight reduction of their alcoholic degree. A reduction of sugar has been by performing two successive stages of nanofiltration. To this end, we have worked with two types of musts: one from the *Verdejo* variety of white grapes and the other from red grapes of the Tinta de Toro variety. Each must has been fermented both after treatment and, to be used as control, without any filtration in order to check the effectiveness of the process. Once fermentation is completed, wide-ranging analysis have been used to study all possible changes in the characteristics of the wine from a chemical point of view. The alcohol reduction reached by the wines obtained after nanofiltration and mixing of both white and red musts has been satisfactory.

Keywords: Membrane; Nanofiltration; Fouling; Sugar reduction; Musts; Low alcohol-content wines

*Corresponding author.

Presented at the VII Ibero-American Conference on Membrane Science and Technology (CITEM 2010), April 11–14, 2010, Sintra, Portugal