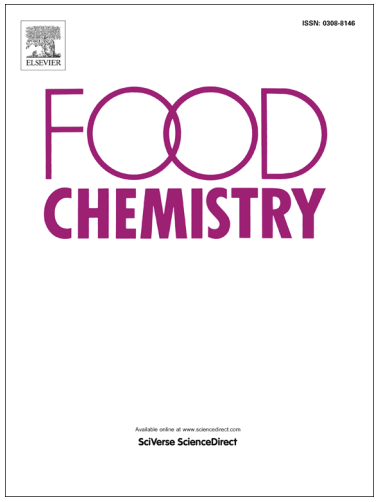

The influence of yeast on chemical composition and sensory properties of dry white wines

B. Puertas, M.J. Jimenez-Hierro, E. Cantos-Villar, A. Marrufo, M. Carbú, F.J. Cuevas, J.M. Moreno-Rojas, V.E. González-Rodríguez, J.M. Cantoral, M.J. Ruiz-Moreno

PII: S0308-8146(18)30048-7
DOI: https://doi.org/10.1016/j.foodchem.2018.01.039
Reference: FOCH 22228

To appear in: *Food Chemistry*

Received Date: 7 June 2017
Revised Date: 17 December 2017
Accepted Date: 3 January 2018

Please cite this article as: Puertas, B., Jimenez-Hierro, M.J., Cantos-Villar, E., Marrufo, A., Carbú, M., Cuevas, F.J., Moreno-Rojas, J.M., González-Rodríguez, V.E., Cantoral, J.M., Ruiz-Moreno, M.J., The influence of yeast on chemical composition and sensory properties of dry white wines, *Food Chemistry* (2018), doi: https://doi.org/10.1016/j.foodchem.2018.01.039

The influence of yeast on chemical composition and sensory properties of dry white wines.

B. Puertas[1], M.J. Jimenez-Hierro[1], E. Cantos-Villar[1], A. Marrufo[1], M. Carbú[2,], F.J. Cuevas[3], J.M. Moreno-Rojas[3], V.E. González-Rodríguez[2], J.M. Cantoral[2], M. J. Ruiz-Moreno*[3]

[1]*Instituto de Investigación y Formación Agraria y Pesquera (IFAPA), Centro Rancho de la Merced, Consejería de Agricultura, Pesca y Desarrollo Rural (CAPDR), Junta de Andalucía. Ctra. Trebujena, Km 2.1, 11471 Jerez de la Frontera, Spain.*
[2]*Laboratorio de Microbiología, CASEM. Departamento de Biomedicina, Biotecnología y Salud Pública. Universidad de Cádiz. Polígono del Río San Pedro s/n, 11510 Puerto Real (Cádiz), Spain.*
[3]*Instituto de Investigación y Formación Agraria y Pesquera (IFAPA), Centro Alameda del Obispo, Consejería de Agricultura, Pesca y Desarrollo Rural (CAPDR), Junta de Andalucía. Avd. Menéndez Pidal, 14004 Córdoba, Spain.*

*Corresponding author: Tel.: +34 671 53 27 16; E-mail: mariaj.ruiz.moreno@juntadeandalucia.es

ABSTRACT

This study evaluates the impact on two varietal white wines from 'Chardonnay' and 'Verdejo' cultivars of different fermentative strategies: inoculation with *Saccharomyces cerevisiae* yeast (CT), sequential inoculation (*Torulaspora delbrueckii* / *Saccharomyces cerevisiae)* (SI), and spontaneous fermentation (SP). The wines' chemical composition was characterized by oenological parameters, organic acids, metals, major volatile compounds, ester compounds and sensory analyses. The fermentative strategy (CT, SI and SP) was found to be a key factor for assessing different styles of white wines. SI wines showed enhanced 'mature fruit' nuances and a chemical profile characterized by higher content of ethyl propanoate, ethyl isobutyrate and ethyl dihydrocinnamate. Meanwhile, the SP wines presented enhanced "stone fruit" nuances possible related to the higher contents of 2-phenyl acetate and isobutyl acetate. After a chemometric approach the above esters were identified as the markers of each fermentative strategy, independently of the variety.

Keywords: Sequential inoculation, spontaneous fermentation, esters, sensory analysis.