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# Preliminary study of the influence of ripening on the polysaccharide content of different red grape varieties

## Abstract

Grape skin has a barrier and protective function in grapes. Cell wall of grape skins is mainly composed of polysaccharides such as pectins, celluloses and hemicelluloses and structural proteins. Terroir, variety and changes during ripening can affect the content of polysaccharides in grapes. The aim of this study was to evaluate the content of polysaccharides (PS) in grapes along the ripening process. Three red grape varieties were studied: Garnacha (G), Tempranillo (T) and Prieto Picudo (PP). The samples were collected in four different stages with one week between them. The PS extraction were carried out following the method developed by Canalejo et al.<sup>[1]</sup>. The total estimated PS of the extracts obtained were determined by HPSEC-RID and three different molecular weight fractions of PS were evaluated: high, medium and low molecular weight. Oenological parameters were analyzed in all samples. An ANOVA and correlation analysis were performed with Statgraphics Centurion XVIII and R Studio. The total PS increased during the ripening process, with the exception of PP that showed a decrease in total PS from 25 ° Brix. The G grapes reached the highest PS content. Similar behavior was observed in the evolution of the percentage of high molecular weight PS (HMW PS), but the PP grapes presented the highest values. A positive correlation was found between the percentage of HMW PS and the Brix degree. These results suggest the influence of ripening on the HMW PS and open up future researches on other grape varieties.

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## References:

1) Canalejo et al. (2021) Optimization of a method to extract polysaccharides from white grape pomace by-products. Food Chem. 365, 130445, DOI [10.1016/j.foodchem.2021.130445](https://doi.org/10.1016/j.foodchem.2021.130445)

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## Authors

María Curiel-Fernández<sup>1\*</sup>, Zenaida Guadalupe<sup>2</sup>, Belén Ayestarán<sup>2</sup>, Silvia Pérez-Magariño<sup>1</sup>

<sup>1</sup>*Instituto Tecnológico Agrario de Castilla y León, Ctra Burgos Km 119, 47071 Valladolid, Spain.*

<sup>2</sup>*ICVV-Universidad de La Rioja, Finca de La Grajera, Ctra. Burgos 6, 26007 Logroño, Spain.*

## Contact the author\*

[curferma@itacyl.es](mailto:curferma@itacyl.es)

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