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Polysaccharide families of lyophilized extracts obtained from unfermented varietal grape pomaces

Abstract

The recovery of bioactive compounds from grape and wine by-products is currently an important objective for revaluation and sustainability. Grape pomace is one of the main by-products and is a rich source of some bioactive compounds. The aim of this study was to evaluate the polysaccharide (PS) composition of extracts obtained from pomaces of different white and red grape varieties of Castilla y León. Grape pomaces were obtained after the pressing in the winemaking process. PS extracts were obtained following the method previously developed by Canalejo et al.^[1], and the monosaccharide composition were evaluated by GC-MS^[2] to determine the PS families which are PS rich in arabinose and galactose (PRAG), mannans (MN), rhamnogalacturonans of type II (RG-II), homogalacturonans (HG) and non pectic polysaccharides (NPP). Titratable acidity (TA), Brix degree and high molecular weight PS (HMWP) were also determined. Statistically significant differences were found in the PS families between different varietal grape pomaces and even within the same grape variety. The extracts from red and white grape varieties were separated in the figure defined by the first two principal components, which explained 66.1% of the total variance. The ones obtained from white grapes are mainly related to the TA, HG, MN, PRAG and HMWP, while those from red varieties are close to the Brix degree and RG-II. Only Cabernet Sauvignon variety is correlated mainly with the TA, HG and NPP as white grape varieties. To sum up, both the type of grape and the grape variety are important factors with influence PS composition of grape pomaces.

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