Influence Of Different Grape Polysaccharides On Phenolic Compounds And Colour Characteristics Of Tempranillo Red Wines

Polysaccharides (PS) are one of the main compounds found in wines, and they come mainly from the grape cell walls or from the yeasts, and they play an important role in the technological and sensory characteristics of wines. Polysaccharides obtained from yeasts have been more studied, especially mannoproteins, since there are commercial products.
Considering the large amount of waste that comes from the wine industry, the aim of this work was to study the effect of the addition of different fractions of polysaccharides extracted for grape by-products on phenolic composition and colour parameters of red wines in order to improve their quality.
Different extracts of grape polysaccharide were obtained from grape must, pomace and marc. Seven experiences were carried out with a Tempranillo red wine with a high polyphenolic content and with high astringency by duplicate: W1) control wines (without the addition of any product); W2) wines with the addition of PS extracted from white must; W3-W4) wines with the addition of PS extracted from white grape pomace (two doses); W5) wines with the addition of PS extracted from red grape marc; W6) wines with the addition of rhamnogalacturonans type II (RG-II) of 80% purity; and W7) wines with the addition of commercial PS (inactivated yeast). These products were maintained in contact with the red wines for two months, and then they were filtered, bottled and analysed after six months. Polysaccharides, different phenolic compounds and colour were evaluated.
Statistically significant differences were found in all the analysed compounds and colour parameters between treatments. The addition of PS from grape pomace and grape marc reduced the content of total polyphenols, tannins, tartaric esters of hydroxycinnamic acids and flavonols. Factorial analysis showed differences between the wines and clearly separated the treated wines with PS from control wines. The W4 and W5 were characterised by higher concentrations of anthocyanins (monomeric and copigmented) and lower of polymeric anthocyanins and colour intensity than the other wines. In general, the addition of the different PS extracts increased the total PS content.
In conclusion, the addition of different fractions of PS extracts modified the phenolic composition and colour characteristics of red wines and increased the total polysaccharide content that can influence the sensory characteristics of the wines.

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Authors: Curiel-Fernández María[1], Cano-Mozo Estela[1], Bueno-Herrera Marta[1], Canalejo Diego[2], Doco Thierry[3], Ayestarán Belén[2], Guadalupe Zenaida[2] Pérez-Magariño[1]

[1]*Instituto Tecnológico Agrario de Castilla y León*

***corresponding author: curferma@itacyl.es (mailto:curferma@itacyl.es)**

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