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TWO DIFFERENT DATES OF APPLICATION OF ELICITORS TO MONASTRELL GRAPES: IMPACT ON THE COMPLEX CARBOHYDRATES OF THEIR WINES

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Monastrell cultivar is the main winemaking grape in the Denomination of Origin Jumilla (SE Spain). Different strategies are being carried out to improve the quality of the Monastrell wines in order to improve in quantity and quality its polyphenolic content, and at the same time respecting the ecosystem. In this sense, the application of elicitors such as methyl jasmonate (MeJ) and benzothiadiazole (BTH) has given satisfactory results in the increase of polyphenols of different grape cultivars, as well as inducing resistance to certain diseases. However, a difficulty has been described in the extraction of its phenolic compounds from grapes to wine, due to variations in different components of the skin cell wall. Some of these components, such as polysaccharides and oligosaccharides released into wine, depend on the nature of the cell wall, and may be affected. The role of these complex carbohydrates in organoleptic and physico-chemical properties of wine has been largely demonstrated.

The aim of this study was to check if separated application of MeJ and BTH, as well as their combined addition (MeJ+BTH) during two points of the maturation cycle (veraison and mid-ripening) of Monastrell grapes, influenced the amount and composition of complex carbohydrates (polysaccharides and oligosaccharides) released in their wines. The results obtained in two consecutive years (2016 and 2017) revealed a lower concentration of polysaccharides and oligosaccharides in the elaborated wines from treated grapes, particularly when treatments were applied during veraison. Therefore, it can be suggested that the application of these elicitors affected the characteristics of the cell walls from berry skins, which consequently would impact on the elaborated Monastrell wines. From these results, it can be concluded that the response from the berries to the elicitor treatments was a strengthening of their cell walls, and consequently the activation of defence mechanisms can be hypothesized.