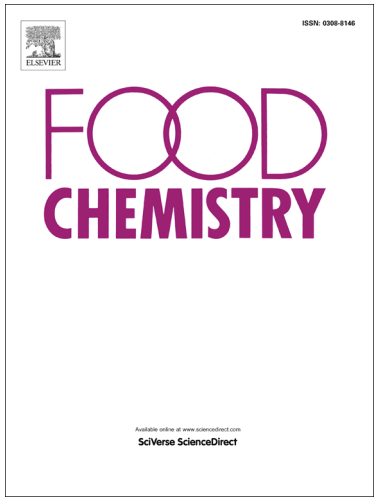

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Effects on chlorophyll and carotenoid contents in different grape varieties (*Vitis vinifera* L.) after nitrogen and elicitor foliar applications to the vineyard

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Abstract

Photosynthetic pigments, including carotenoids are important secondary metabolites, which play a key role in photosynthesis. There is little information about the effects of nitrogen and elicitor applications on chlorophyll and carotenoid concentrations in grapes. The aim of this work was therefore to study the effects of the foliar application of nitrogen sources and elicitors to Tempranillo, Garnacha and Graciano (*Vitis vinifera* L.) grapevines on chlorophyll and carotenoid contents. The results showed that *ß*-carotene and lutein were the most abundant carotenoids in all the samples, ranging from 1,336 and 227 to 7,054 and 1,382 μg/g, respectively. The applied treatments had greater impact on chlorophyll and carotenoid contents in Tempranillo grapes than in Graciano and Garnacha varieties. The content of chlorophyll was determined by the variety factor, while the concentration of carotenoids was influenced by the interaction of variety and treatment factors, depending on the type of foliar application.