Title Impact of minimal processing on orange bioactive compounds during refrigerated storage

Author Lucía Plaza, Inés Crespo, Sonia de Pascual-Teresa, Begoña de Ancos, Concepción Sánchez-Moreno, Marina Muñoz and M. Pilar Cano

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Abstract

The effect of minimal processing on the health-related attributes of orange fruit was investigated. Oranges were prepared as whole fruits, hand-peeled fruits and manually separated segments, packed under air atmosphere and stored at 4 °C for 12 days. The stability of main bioactive compounds (carotenoids, flavanones and vitamin C) and antioxidant activity was evaluated. The total carotenoid content showed a significant increase for the whole samples during refrigerated storage, whereas no significant changes were observed for segments or peeled samples. A similar trend was found for vitamin A. With regard to vitamin C, at the end of refrigerated storage, some losses were observed although no significant differences were found among the different processed samples. The flavanone content showed a significant increase throughout refrigerated storage as response to cold stress. In general, the antioxidant activity remained stable in relation to the initial values. Hence, the health-related characteristics of minimally processed oranges were retained during refrigerated storage.