

Postharvest behavior of new mandarin cultivars obtained in the Ivía

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Abstract

A triploid breeding program has been carried out in Plant Protection and Biotechnology Center at the Instituto Valenciano de Investigaciones Agrarias (IVIA) based on sexual hybridization, embryo rescue and ploidy analysis by flow cytometry in order to obtain new mandarin cultivars with late harvest. ‘Safor’ and ‘Garbí’ mandarins are new triploid hybrids recently released characterized by their high quality and seedless fruits. In the Citrus Center and Vegetable Production (IVIA) another breeding program based on budwood irradiation is being conducted in search of new seedless cultivars. At this moment two clones obtained from irradiated budwood of the seedy ‘Moncada’ mandarin (Moncalina-6S17 and Manrad-2L09) are in process of being registered and exhibit excellent fruit quality. This study aimed at testing the postharvest behavior of these four new cultivars. After harvest the fruit were waxed and stored up to 30 days at 1, 5, or 9°C in order to evaluate the sensibility to chilling injury and the changes in quality parameters that occur during the cold storage. ‘Safor’ mandarins did not show chilling injury symptoms during 30 days at any temperature studied. In contrast, ‘Garbí’ mandarins exhibited susceptibility to chilling injury after 15 days of storage at 1 and 5°C; during this period this cultivar showed disorders related with peel dehydration when stored at 9°C. ‘Moncalina’ and ‘Manrad’ did not show relevant symptoms related to cold-induced damage or dehydration at 1, 5 and 9°C for 30 days of storage. For all mandarin cultivars assayed, the storage at low temperature was not limited for the changes observed in fruit quality parameters.