

Fruit quality and response to destringency treatment of eight persimmon varieties cultivated under Spanish growing conditions

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Abstract

In Spain the persimmon production is based on the cultivar 'Rojo Brillante' which is astringent at harvest (PVA type). The application of postharvest CO₂-treatments that allow removing the astringency while preserving the firmness has been the main factor for the important expansion of persimmon crop in the last decades. Relying the crop only on one cultivar implied agronomic and commercial risks, thus the availability of new cultivars is currently an important research goal. In this sense the Instituto Valenciano de Investigaciones Agrarias (IVIA, Spain) has recently started a program focused on the introduction of cultivars from other persimmon growth countries, with positive agronomic features as well as diversity in ripening date, astringency, and fruit characteristics. The study of the postharvest quality of those cultivars with good agronomic performance is necessary for their commercial potential. In this study the fruit quality at harvest of eight cultivars has been evaluated at two commercial maturity stages; diameter, firmness, external color, total soluble solids and level of astringency were determined. In those cultivars astringent at harvest, the effectiveness of destringency treatment with high concentration of CO₂, applied in commercial standard conditions, has also been investigated. The analysis of soluble tannins, acetaldehyde production and sensory astringency evaluation revealed that, although this treatment was effective in most of the cultivars assayed, some of them maintained a level of astringency too high after treatment for consumption. Moreover, maturity at harvest influences the effectiveness of the destringency treatment on some cultivars.