

Title Changes in anthocyanins in arils of chitosan-coated pomegranate (*Punica granatum* L. cv. Rabbab-e-Neyriz) fruit during cold storage

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Abstract

Edible coatings as chitosan treatments (0%, 1% and 2%) were applied to ‘Rabbab-e-Neyriz’ pomegranate (*Punica granatum* L.). The effect of chitosan coating on individual anthocyanins and colour parameters of the juice during storage at 2 °C or 5 °C was examined. Six predominant anthocyanins were identified in the juice, with up to 935 mg/L total anthocyanins at the time of harvest. Cyanidin 3,5-diglucoside (402 mg/L) was the major pigment. The total anthocyanin content and chroma decreased with storage time in all applied treatments, although lightness and hue angle increased. These changes were reduced with chitosan treatments and at lower storage temperature (2 °C as compared to 5 °C). Based on the obtained results, the diglucoside anthocyanins were more stable than the monoglucosides. Chitosan coating followed by cold storage delayed anthocyanin degradation and prevented colour deterioration in the pomegranate arils.