

BETTERMENT QUALITY OF *PUNICAGRANATUM* L. IN DIFFERENT SODIUM AND CALCIUM TREATMENTS

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INTRODUCTION: Pomegranate (*Punicagranatum* L.) is an important fruit crop of many tropical and subtropical regions of the world, grown especially in the moderate climates of Mediterranean countries. Calcium (Ca^{2+}) has been extensively reviewed as both an essential element and its potential role in maintaining postharvest quality of fruit and vegetable crops by contributing to the linkages between pectic substances within the cell-wall (Arhtar et al., 2010). Keeping in view the usefulness of CaCl_2 treatments in fruits as revealed by various scientists. The present study was aimed to evaluate the effectiveness of postharvest immersion of different CaCl_2 concentrations on the postharvest quality attributes of Pomegranate fruit during cold storage for short time (2 month) representing the shipment and transport conditions during handling and export of the fruits and market conditions.

MATERIALS AND METHODS: A factorial experiment was established, including distilled water (control), sodium hypochlorite (10%), calcium chloride (4%) and sodium hypochlorite (10%) + calcium chloride (4%) solution for 4 minute effects on pomegranates morphological properties. The juice was extracted from the arils by manual squeezing through muslin cloth and the juice content was expressed as a percentage. The soluble solids content (SSC), sugars, vitamin C ($\mu\text{mol} \cdot \text{l}^{-1}$) and titratable acidity (TA, $\text{mmol H}^+ \cdot \text{l}^{-1}$) of the juice were measured using standard methods of analysis. The data were statistically processed by analysis of variance according to a randomized complete block design and means with standard errors were calculated using the program Statistical Analysis System, version 9.1 (SAS Institute, Cary, NC, USA). Differences between the treatments were determined using Duncan's test.

RESULTS AND DISCUSSION: Changes in total soluble solids (TSS), titratable acidity (TA) and vitamin C were retained. total soluble solids (TSS) greatly reduced by all sodium and calcium treatments. Fruits treated with 4% Calcium chloride combination with sodium hypochlorite (10%) retained maximum firmness, vitamin C and titratable acidity (TA). In conclusion, the best treatment to enhance postharvest factors of pomegranates, was the 4% Calcium chloride combination with sodium hypochlorite (10%). This treatment can be proposed as additional substance for pomegranates postharvest quality increasment.

Keywords: Calcium chloride, Pomegranate, Sodium chloride