

**Title** Evaluation of total antioxidant activity and total phenolics in the aril of chitosan-coated pomegranate during cold storage

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### **Abstract**

In the recent years, pomegranate has taken a great step in popularity because of its considerable amounts of healthy compounds and researchers are looking for new physical treatments to maintain these compounds during the postharvest storage of this fruit. Chitosan, as a biodegradable edible coating without any side effects, is one of the good candidates to improve fruit storability. In this experiment, 0%, 1 % and 2% chitosan solutions were used to treat pomegranate fruits cv Rabbab e Neyriz. The effect of chitosan coating on total antioxidant activity ( $\mu\text{g}$  equiv ascorbic acid/ml) and total phenolics ( $\mu\text{g}$  equiv gallic acid/ml) of juice were examined during storage at 2°C or 5°C. Despite an increase that was recorded for the total antioxidant activity and total phenolics of juice for the first 45 days of storage, these parameters showed decrease in both controls and chitosan-coated fruits during the rest of storage period. In addition, total antioxidant activity and total phenolics were higher in the chitosan coated fruits compared to controls at both temperatures during the storage time without any significant difference between 1 % and 2% chitosan treated fruits. Chitosan coating of pomegranate followed by cold storage maintained significant levels of total antioxidant activity and total phenolics of juice during the storage.