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Exploring the Effect of Cellulose Based Coating Incorporated with CaCl2 and MgSO4 on Shelf Life Extension of Kinnow (Citrus reticulata blanco) Cultivar

Authors : Muhammad Atif Randhawa, Muhammad Nadeem

Abstract : Kinnow (Citrus reticulate Blanco) is nutritious and perishable fruit with high juice content, and also rich source of vitamin-C. In Pakistan, kinnow export is limited due to inadequate post-harvest handling and lack of satisfactory storage practices. Considering these issues, the present study was designed to evaluate the effect of hydroxypropyl methylcellulose (HPMC) coating in combination with CaCl2 and MgSO4 on shelf life extension of kinnow. Fruits were treated with different levels of CaCl2 and MgSO4 followed by HPMC coating (3 and 5%) and stored at 10°C with 80% relative humidity for 6 weeks. Fruits were analyzed for various physico-chemical parameters on weekly basis. During this study lower fruit firmness (0.24Nm-2), loss in weight (0.64%) and ethylene production (0.039 µL•kg-1•hr-1) was observed in fruits treated with 1% CaCl2 + 1% MgSO4 + 5% HPMC (T6) during storage of 42 days. Minimum chilling injury indexes 0.22% and 0.61% were recorded in treatments T4 and T6, respectively. T6 showed higher values of titerable acidity (0.29%) and ascorbic acid contents (39.82mg/100g). Minimum TSS (9.62°Brix) was found in fruits of T6. Overall T6 showed significantly better results for various parameters, as compared to all other treated and control fruits.

Keywords : firmness, kinnow coating, physicochemical, storage
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