EuroSciCon

5th Annual Congress on

Plant & Soil Science

February 28-March 01, 2019
London, UK

J Plant Physiol Pathol 2019, Volume 7
DOI: 10.4172/2329-955X-C1-030

The effect of Nanocomposite Packaging on the Shelf life and Qualitative properties of fresh cut 'Fuji' apple

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In this study, the effect of nanocomposite container packing and conventional polyethylene containers as control group on the shelf life and some properties of Fresh Fragrant Fruits of Fuji Cultivars Apple for 21 days in fridge under temperature of 0±0.5ºC and Relative Humidity (RH) of 85 to 95% was analyzed. Also, some qualitative properties including total antioxidant, activity of polyphenol oxidase and peroxidase enzymes, soluble solids, weight loss percentage and titratable acidity were evaluated in 0, 7, 14 and 21 days after shelving. The results showed that nano-packaging can significantly preserve the total antioxidant level and the soluble solids materials within 21 days. Nanocomposite container with polypropylene silicon compound could decrease the activity of polyphenol oxidase and peroxidase enzymes and can also cause weight loss compared to control group. Moreover, the majority of organic acids were also observed in the packed fruit pieces in nanocomposite containers with same combination. According to obtained results, it could be found that nanocomposite packing containers can be good replacement for chemical materials in technology of shelving freshly sliced apples.

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