

Shelf-Life Study of Guava (*Psidium Guajava* L.) Under Active Packaging: An Experiment with Potassium Permanganate Salt as Ethylene Absorbent

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Abstract Shelf-life of Guava (*Psidium guajava* L.) under active packaging was studied based on produce, film and system parameters such as respiration rate of produce, film permeability and in-pack environmental conditions. Potassium permanganate embedded in silica crystals were used in the form of sachets as active ingredient for ethylene absorption inside packages. The designed modified atmosphere (MA) packages using LDPE film (76.2 μm thickness) were stored at 8 ± 2 °C. Most of the physico-chemical and textural properties of guava fruits during storage were affected by incorporation of ethylene absorbent in a dependent manner. The in-pack gaseous composition was significantly suppressed in MA packages with and without absorbent under refrigerated storage condition. The reduced changes in fruit firmness, total soluble content (TSS), titratable acidity (TA) and color showed the effectiveness of use of absorbent sachets in extending shelf life of guava fruit. A significant reduction in decay (%) was noticed in active MAP samples in combination with refrigerated storage. The proposed post-harvest tool under active packaging using potassium permanganate salt provide a promising way to enhance the storage life of guava up to 7 weeks.