

Assessment of the Effectiveness of Plant Mucilage in Enhancing the Keeping Quality of Fresh Produce

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Fresh produce are highly perishable commodities that bear various active metabolic reactions during the post-harvest period. These processes may lead to reduce the post-harvest life of fresh produce. Current study aimed to evaluate the use of Aloe vera and Okra mucilage as a coating to extend the shelf life of fresh produce. A comprehensive market survey was conducted in the Mihintale area to identify fresh produce with higher post-harvest losses. Selected fresh produce were treated (dipped) with various plant mucilage materials such as Aloe Vera (AV), Okra (O), Aloe Vera: Glycerine in 80:20 (AVG), and Okra: Glycerine in 80:20 (OG) and stored under normal atmospheric conditions (25°C, 58% RH) for seven days. Physico-chemical properties during the storage were studied at regular intervals compared to an uncoated (C) sample. Banana, mango, capsicum, and tomato were identified as fresh produce with a significant post-harvest loss during the period of October to November. The AV treatment effectively extended the shelf life of mangoes by significantly lowering ($p < 0.05$) total soluble solids (TSS) and exceeded weight loss limits, preserving both mangoes and tomatoes. AV treated tomatoes maintained high firmness compared to the other treatments, while mangoes exhibited high titratable acidity, with tomatoes showing no significant difference compared to uncoated samples ($p > 0.05$). a^* and b^* values of all the samples increased during the storage period, while AV treated capsicum and tomatoes showed lower rate of increasing the a^* and b^* values. Thus, this study reveals AV as the potential coating material that impart reducing the deterioration of fresh produce during the post-harvest period.

Keywords: *Aloe Vera; Fruits and vegetables; Okra; Preservation; Post-harvest losses*