



## EFFECT OF CASEIN EDIBLE COATING ON THE POSTHARVEST QUALITY OF FRESH GUAVA FRUITS DURING AMBIENT STORAGE CONDITIONS

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### ABSTRACT

Maintaining quality of fruits is an important task in fresh food retailing throughout the supply chain. Fruits fall under perishable foods because they quickly respond to chemical, physical, and biological changes which lead to quality aspects. Edible coatings are used to prevent the physicochemical changes in fruits during the storage and transportation. In the present study, Casein was chosen as a bio-based edible coating material, enriched with ascorbic acid and was applied on fresh guava fruits to study the delay of ripening and other quality properties. Different concentrations of casein were fortified with 1% of ascorbic acid and applied on whole guava fruits as coating. Fruits were treated with 5% and 10% casein with and without ascorbic acid, fortification process was established to maintain and enrich the vitamin C content in the fruits to reach maximum levels to the consumers. Experimental samples were coded as S1, S2, S3, S4 and sample (So) without coating is considered as control. The fruit samples were stored at (26±1°C) for a period of 16 days. Various physicochemical, biological parameters and microstructural studies were tested to evaluate freshness, nutritional status, and keeping quality during the storage. Fruit ripening, firmness and various visual quality aspects like appearance, defects, and shrinkage rates were studied to understand the physical quality of the fruits upon storage period. During storage, results shows that all casein treated samples were noted with decreased firmness, titratable acidity and delayed chlorophyll content, microbial load while the pH, TSS, carotenoids were increased along the storage when compared with control sample and all the coated samples were found glossy appearance with acceptable flavor. This study prompt that casein is an ideal, promising coating to preserve the quality and extends the post-harvest life of guava fruits.

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