



IMPACT OF ALOE VERA COATING ON THE QUALITY OF REFRIGERATED 'Tommy Atkins' MANGO

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Mango is one of the most consumed tropical fruits in the world; however, due to its climacteric nature, it deteriorates rapidly. This rapid deterioration necessitates the development of effective post-harvest strategies to maintain its quality during storage. In a comprehensive study, the effect of Aloe vera (*Aloe barbadensis*) coatings on minimally processed 'Tommy Atkins' mangoes was evaluated over a period of seven days at a controlled temperature of approximately 6°C. The purpose was to determine the impact of these coatings on various fruit quality parameters, including texture, pH, total soluble solids, weight loss, and sensory perception. Four different concentrations of Aloe vera solutions (25%, 50%, 75%, and 100%) were tested alongside two control groups (one without any coating and another with deionized water). The results of the study provided valuable insights into how these coatings affect the quality and shelf life of the mangoes. It was generally observed that the pH of the mangoes remained constant throughout the storage period. On the other hand, total soluble solids (TSS) showed an increase, and firmness decreased, which are typical indicators of the fruit ripening process. Interestingly, the study found that Aloe vera coatings had a significant impact on several quality parameters. Specifically, coatings with 75% and 100% Aloe vera concentrations were particularly effective in maintaining stable pH levels. Additionally, TSS levels were positively influenced by Aloe vera concentrations ranging from 25% to 100%. The firmness of the mangoes also benefited from the Aloe vera coating, with the 50% concentration showing notable effectiveness. Furthermore, sensory analysis revealed differences in taste and texture between the mangoes coated with 75% and 100% Aloe vera solutions. These coatings imparted distinctive herbal notes from the Aloe vera, which affected the characteristic flavor of the mangoes. This sensory alteration could be advantageous or disadvantageous, depending on consumer preferences. Overall, the study concluded that Aloe vera coatings are beneficial in preserving the quality of 'Tommy Atkins' mangoes during storage. The coatings were particularly effective in maintaining desirable pH levels, increasing total soluble solids, and preserving firmness. These findings suggest that Aloe vera could be a valuable natural preservative for extending the shelf life and enhancing the quality of tropical fruits like mangoes.

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