Aloe vera Incorporated Edible Coating from *Canna edulis* for Post-harvest Quality Retention of Fresh Coconut

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Coconut (*Cocos nucifera L.*) is valued for its nutritional and functional benefits, particularly when its fresh; therefore, it's called the 'Tree of Life'. However, deshelled coconut kernel rapidly deteriorates due to moisture loss and oxidative spoilage. This study evaluated a *Canna* starch, aloe vera gel and glycerol coating to preserve selected quality attributes of coconut kernel. The coating was applied to approximately 2cm sized coconut pieces. Treatment and control samples were dried at 60°C for 2 hours to facilitate film formation and adhesion, which were then stored under ambient (25±5°C) and refrigerated temperatures (4±1°C) for a period of 15 days. Four treatments were evaluated including control samples, T1(Coated at ambient temperature), T2 (Coated at refrigeration temperature), C1 (Uncoated at ambient temperature and C2 (Uncoated at refrigeration temperature). Fresh coconut kernel had an initial moisture of (45.3±0.12%) and water activity of (0.96±0.04%). During storage, the coated sample at ambient temperature showed better retention of moisture (34.9±0.07%) and water activity (0.93±0.01%) than the uncoated control samples, which showed significantly lower values (3.3±0.01%) and (0.75±0.01%), indicating the effective moisture barrier properties. Furthermore, the coated sample exhibited improved oxidative stability indicated by a lower peroxide value (2.2 meq/kg) throughout the storage period than the uncoated control sample (20 meq/kg). By day 15, coated samples under ambient conditions also showed comparatively better non-ingestive sensory acceptability than the control samples. Overall, the developed coating shows potential for preserving fresh coconut kernel. However, further studies including microbiological analysis, expanded sensory evaluation and antioxidant properties are required to confirm preservative action and storage stability.

Keywords: *Aloe vera*, Canna starch, Coconut, Edible films, Moisture content