

Effect of Natural Edible Coatings on Quality Characteristics and Storage Behaviour of Mango (*Mangifera indica* L.) during Cold Storage Conditions

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Mango is an economically important seasonal fruit facing greater problems in storage and transportation to long distance market because of its perishable nature. Natural edible coatings have been proved for enhancing shelf life, delaying the ripening and preserving the quality of fruits. Hence, this study was carried out in the Laboratory of National Institute of Post Harvest Management to identify the effect of applying IPHT bio wax (IPHT) 1:25, Chitosan (CH) 0.8% and Gum Arabic (GA) 8% on delaying ripening, enhancing the storage life and retaining the quality of mango fruits cv. *Karuthakolomban* during cold storage as complete randomized design (CRD) with three replicates where the data were assessed by the analysis of variance (ANOVA). As measurements, storage life, juice pH, total soluble solids (TSS), fruit firmness, peel colour of L*, a* and b* values and titratable acidity (TA) were investigated. Mango fruits harvested at physiological maturity were treated with the selected wax treatments and stored under cold room conditions (13±1°C, 90% RH) and measurements were taken with five days interval during the storage period. CH, GA, IPHT and control samples showed storage life of 27, 23, 24 and 18 days, respectively. Significant differences were observed (p<0.05) for tested parameters for CH, GA and IPHT bio wax compared to the control. There were no significant differences (p>0.05) observed between GA and IPHT for tested parameters. At the latter stage of storage, there were significant differences (p<0.05) observed between CH and other treatments for pH, TSS, firmness and peel colour values. Experimental results suggested that application of Chitosan 0.8%, Gum Arabic 8% and IPHT bio wax 1:25 coating as bio preservative is an effective technique for extending the storage life and maintaining the quality of mango fruits during cold storage where Chitosan 0.8% was selected as the best treatment.

Keywords: Chitosan, Gum Arabic, IPHT bio wax, Mango, Postharvest