Development of an Alginate Based Edible Coating and its Application on Unripen Pre-cut Jackfruit (*Artocarpus heterophyllus Lam*)

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Jackfruit (*Artocarpus heterophyllus Lam*) is a fruit which is highly demanded by Asians. It is a large fruit which is difficult to peel, therefore consumers prefer to buy it ready to cook. The objective of this study was to investigate the effect of application of an alginate based edible coating on quality parameters of pre-cut jackfruit samples. Alginate is a polysaccharide which can be used in development of coatings and films using its gelling property. Alginate for the study was extracted from *Sargassum sp*. by hot extraction method. An FT-IR analysis was done to confirm the presence of functional groups of extracted sodium alginate. FT-IR analysis resulted peaks at wavenumbers (cm^{-1}), 1562.973, 849.208, 949.176 and 3461.391. According to previous literature, appearance of peaks at these wavenumbers indicated the presence of carboxylate, mannuronic acid, uronic acid and an O-H groups respectively. 1% alginate based edible coating was developed using extracted alginate to apply on pre-cut jackfruit samples which are to be stored for 5 days under refrigerated conditions ($6\pm1\ ^0C$).Total soluble solid content (TSS), weight loss percentage, titrable acidity, pH and ascorbic acid content of coated and uncoated jackfruit samples were measured for a period of 5 days. According to the results, TSS and pH of both coated and uncoated samples has increased. On the fifth day, a significantly higher TSS and a pH value was observed in the uncoated sample. Weight loss was observed in both coated and uncoated samples. During the storage period of 5 days, a significantly higher weight loss percentage was observed in uncoated sample than the coated sample. Titratable acidity decreased during the storage period. Significantly higher decrement in the titratable acidity was observed in uncoated sample. Ascorbic acid content was decreased during the storage period but there was no any significant difference in the decrement of ascorbic acid content between coated and uncoated sample. Thus, within 5 days of storage lesser weight loss and better-quality values of Tss, titratable acidity and pH were obtained for jackfruit samples coated with 1% alginate. Microbial analysis and sensory analysis of the study is in progress.

***Keywords*:** Jack fruit; Alginate; Edible coating; Packaging; Shelf life