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**Improvement of post-harvest storage potential of pre-cut jackfruit (*Artocarpus heterophyllus* Lam) by application of an edible coating developed with agar extracted from *Gracilaria edulis***

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Pre-cut jackfruit is highly perishable. The aim of the study was to investigate the effect of the application of an agar-based edible coating on quality parameters of pre-cut jackfruit within a storage period of 5 days under refrigerated conditions ( $6 \pm 1$  °C). Gel-forming ability of agar extracted by boiling *Gracilaria edulis* in water was used to develop 1% agar-based coating by dissolving agar and glycerol in distilled water to coat pre-cut jackfruit. Jackfruit of initial brix  $6.23 \pm 0.39^\circ$  was selected. Total soluble solids (TSS), titratable acidity, weight loss, ascorbic acid content, pH and colour are basic quality parameters that will change during fruit ripening. Those parameters of coated and uncoated jackfruits were measured daily and compared for 5 days. Data analysis was done with ANOVA at a 95% confidence interval. Initial TSS, hue, titratable acidity, and ascorbic acid content of jackfruit before applying the coating were,  $6.33 \pm 0.58^\circ$ ,  $86.40 \pm 1.45^\circ$ ,  $0.07 \pm 0.00$  (% of citric acid) and  $7.14 \pm 0.24$  (mg/100 g), respectively. On the fifth day, TSS<sup>o</sup> of coated and uncoated samples were,  $11.00 \pm 0.87^\circ$  and  $14.17 \pm 0.76^\circ$ , respectively. Thus, a significantly higher TSS was observed in the uncoated sample. Hue of coated and uncoated samples on the fifth day was,  $80.30 \pm 0.20^\circ$  and  $77.80 \pm 0.50^\circ$ , respectively. Thus, a significantly higher decrement in hue was observed in the uncoated sample compared to the coated. Titratable acidity (% of citric acid) of coated and uncoated samples on the fifth day were  $0.06 \pm 0.00$  and  $0.06 \pm 0.00$ , respectively. The ascorbic acid content (mg/100 g) of coated and uncoated jackfruit on the fifth day were,  $9.04 \pm 0.32$  and  $6.50 \pm 0.24$ , respectively marking a slight increment in the coated sample than the initial value. The weight loss percentage of coated and uncoated samples on the fifth day were  $0.69 \pm 0.14$  and  $1.12 \pm 0.24$ , respectively. Thus, a higher weight loss was observed in the uncoated sample than the coated sample. In conclusion, the application of 1% agar-based coating was successful in delaying ripening by maintaining better quality values for TSS, hue and ascorbic acid content while reducing weight loss in ready-to-cook jack-fruit.

**Keywords:** Agar-based edible coating, jackfruit, post-harvest storage

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