

Effect of chitosan–beeswax edible coatings on the shelf-life of Sapodilla (*Achras zapota*) fruit

ABSTRACT

The aim of this study was to investigate the effect of chitosan and beeswax as edible coatings on the shelf-life of sapodilla (*Achras zapota*). The coating formulations used were chitosan only (C), chitosan with 10% beeswax (C + 10B) and chitosan with 20% beeswax (C + 20B). Sapodilla without any coating (WC) was used as a control. The coating formulations, C + 10B and C + 20B had shown to be the best in reducing the senescence of sapodilla as they slowed down the weight loss and breakdown of soluble solids in the fruit, while retaining the firmness and skin colour. Microbial populations of C + 10B and C + 20B were also below permissible microbial food limit (5 log CFU g⁻¹) over the period of 17 days if compared to WC and C, which exceeded the limit. However, C + 10B started to shrivel towards the end of storage. In conclusion, C + 20B showed the best edible coating formulation in extending the shelf-life of sapodilla.

Keyword: Chitosan; Beeswax; Edible coating; Shelf-life; Sapodilla (*Achras zapota*)