Title Quality changes of papaya (*Carica Papaya* L. Cv. Eksotika) as affected by different concentrations of chitosan and glycerol

Author Hanisah Mustaffa @ Hamzah, Azizah Osman, Farinazleen Mohamad Ghazali, Chin Ping Tan

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Abstract

Edible coatings are well known to be one of the methods used for preserving fresh produce especially fruits. These coatings are used on many products to control moisture transfer, gas exchange and oxidation process. Plasticizers such as glycerol are added into edible formulations to improve coating properties. Chitosan is a polysaccharide that has the ability to form semi-permeable coatings that can modify the internal atmosphere, and thus reduce respiration rates and consequently delay ripening of fruits. Therefore, the aim of this study was to evaluate the effects of different concentrations of chitosan and plasticizer (glycerol) on the quality aspects of Eksotika papaya. Coating formulations made of different concentrations of chitosan and glycerol ranging from 0.5-2.5% and 0-2% respectively were used to coat the papaya. The fruits were kept at ambient (26°C±1°C; 70±10% RH) condition and evaluated for weight loss, firmness, colour and total soluble solids (TSS) after 5 days. Results obtained showed that combination of chitosan and glycerol at different concentrations gave significant ($p<0.05$) effect to all parameters tested. In general, increase in chitosan concentration with combination oflower glycerol concentration gave desirable changes to the responses tested. They were able to reduce weight loss and also improve firmness, colour and TSS of Eksotika papaya. However, increasing glycerol concentration at fixed amount of chitosan gave negative effects. Thus, the findings of this study suggest that chitosan in combination with lower glycerol concentration can be used to prolong the shelflife and maintaining the quality of fruit during storage.