

Preservation coating effect of acid-soluble Chitosan on the shelf life of banana in Sabah

ABSTRACT

Chitosan, a biopolymer that consist of various properties, has multiple applications throughout industries where one of the promising application of chitosan is its preservative effect. Chitosan, a bioactive natural edible coat can be considered a promising alternative to overcome the freshness of bananas during storage. Throughout this study, observations were made on weight loss, peel colour changes and titratable acidity for the effect of chitosan coating. In terms of weight loss, among four different concentration of chitosan coating solution, the 2.0% chitosan coating solution showed the lowest weight loss percentage which is 22.6% compare to others which were 1.0% (26.00%), 0.5% (26.20%) and 1.5% (34.24%) significantly. The result marked variations between the uncoated banana and coated banana at different concentrations of chitosan coating solution (ASC) which are 0.50, 1.00, 1.50 and 2.00%. The peel color changes were significantly different during the first and final day of observation for each concentration. A significant variation was observed for the titratable acidity of the banana fruit where the lowest value obtained was 0.812% during coating with 2.0% chitosan coating solution while the highest titratable acidity was observed during the coating with 1.5% chitosan solution which is 2.11%. To summarize, banana coating with chitosan can decreased the weight loss of the banana fruit as well as improve the peel color changes during 12 days of storage. Besides that, banana coating with chitosan can also lower the value of titratable acidity of the banana fruit compared to uncoated bananas.