

Title Physical and mechanical properties of composite mango films
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Citation Abstracts Book, 6th International Postharvest symposium, 8-12 April 2009, Antalya, Turkey.
256 pages.
Keyword Mango; edible films; edible coating

Abstract

Mango fruits are not only eaten fresh but can also form edible films and coatings which prolong the shelf-life and quality of food. Previous studies showed that natural mango film had limited applications due to its hydrophilic character. Thus, the objective of this study was to combine a lipid component, such as beeswax (BW) to form composite mango film to improve film properties. Addition of BW to form the composite mango film did not show any change in film color. Composite mango film containing 20% BW showed the lowest water vapor permeability and exhibited the lowest elastic modulus. However, no significant difference in tensile strength was observed among mango films containing different BW content (0%, 10%, 20% and 40%). 20% BW-composite mango films possessed similar elongation as mango films without BW, but as BW content increased the elongation of mango films decreased. Therefore, BW-incorporated to mango edible films can improve film water barrier and desirable film properties can be obtained depending on the BW content used. The improved properties of these composite mango films can extend film application.