ABSTRACT

CHITOSAN APPLICATION ON VARIOUS VOLUME OF PASSIVE PACKAGING OF BANANA (*Musa paradisiaca* L.) cv. 'MULI' TO PROLONG SELF LIFE AND MAINTAIN FRUIT QUALITY

By

Risca Yolanda

Banana is a tropical fruit known as fruit which is consumed in fresh condition. After harvesting, banana still in the process of metabolism by using food supply and causes a quick ripening and lossing nutrition. Banana has a short self life due to its high respiration. It will also be vulnerable to damage easily which can be seen from the changing of its texture and colour, and will cause a decrease in the quality of banana to be market. Therefore, it is necessary that proper postharvest handling inhibit the respiration and maintain the quality of banana.

An appropriate postharvest treatment is needed to maintain fruit quality and prolong self life. Packaging technology involves a technology to modified atmosphere composition. Technology used is simple packaging technology using *MAP* and combined with chitosan as coating fruit. The research was aimed at (1) finding the most effective chitosan consentration in prolonging self life and maintaining the quality of banana cv. 'Muli', (2) finding the most effective packaging volume in prolonging self life and maintaining the quality of banana cv. 'Muli', and (3) finding chitosan effectivity in prolonging self life and maintaining the quality of banana cv. 'Muli'on various packaging volume on passive packaging technology.

This research was conducted in the Laboratory of Horticulture, Faculty of Agriculture, University of Lampung during October-November 2009. The material used is banana cv. 'Muli'' at second stadium. This research was arranged in 4x4 factorial completely randomized design. The first factor was fruit coatings used 4 chitosan consentration 0, 2.5, 4, and 5.5%. The second factor was a passive packaging with 4 headspace, the chamber at 1.5, 3.0, 4.0, 5.0 L. All factors were applied on *MAP* passive technology. Each treatment was run in a duplicate, consist of one fruit cluster of 4-7 fruit fingers. For the control, at the beginning of research were observed two packages of fruits for weight parameter and chemical contain. The variables were self life, weight loss, fruit firmness, total soluble solids and free acidity.

The results showed that (1) the chitosan coatings of 2,5% consentration was the most effective in prolonging self life up to 9 days and maintaining the quality of banana cv. 'Muli', (2) the packaging volume at 1,5 L was the most effective in prolonging self life up to 9 days and maintaining the quality of banana cv. 'Muli', and (3) the packaging volume at 1,5 L which was combined with chitosans coating of 2,5-5,5% was the best treatment combination in prolonging self life of banana cv. 'Muli' up to 9-10 days.

Key words: chitosan, banana, packaging, self life, quality