

ABSTRACT

CHITOSAN APPLICATION ON STAR FRUIT (*Averrhoa carambola* L.) IN PASSIVE PACKAGING TO EXTEND THE FRUIT SHELF-LIFE AND MAINTAIN THE QUALITY OF THE FRUIT

By

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Star fruit is one of fruit that has a commercial value in indonesia and it also has a certain market with its own segments start from traditional markets until modern markets. However, there is one obstacle of star fruit that is it has characteristic of being easily damaged because the rind of the fruit which is thin and directly attached to the flesh, so that after the harvest star fruit needs special handling. Post-harvest handling that is practical, safe, and economical to extend the fruit shelf-life and maintain the quality of star fruit can be conducted by using a coating, the a modified atmosphere packaging or the combination of those treatments. The purpose of this research was to study the effects of the application of(I) chitosan concentrations; (II) packaging volumes; and (III) the interaction effects of packaging volume and chitosan concentration which is effective in the passive packaging technology to maintain the quality and extend the shelf-life of the fruit.

This reseach was conducted in the Horticulture Postharvest Laboratory, Department of Agrotechnology, Agriculture Faculty Lampung University during August-September 2013. This research was 4 x 4 factorial experiment with

completely randomized design (CRD). The first factor was chitosan coating of 0, 1, 2, and 3% concentrations. The second factor was packaging volumes of 1.5, 3.0, 4.0, and 5.0 L. These factors were applied into the passive MAP technology. Each treatment combination consist of three replications. The observed variables were fruit shelf-life, fruit weight loss, fruit soluble solids, free acid contents and fruit hardness.

The result of this research indicated the chitosan coating treatment , the using of passive packaging and their combinations statistically did not affect to the star fruit shelf-life, but the treatment combination of 3 % chitosan coating on star fruit could be used on passive packaging in various volume.

Keyword: star fruit, packaging, chitosan, shelf-life, quality