

## **ABSTRACT**

### **EFFECT OF ADDITION INDOLE-3-BUTYRIC ACID ( IBA) AT CHITOSAN COATING ON STORAGE AND QUALITY OF BANANA FRUIT cv. 'CAVENDISH'**

**By**

**ENGGALIH MELRATRI**

Ripening can be slowed by soaking the fruit in a particular solution or by coating the fruit. Soaking the fruit aims to inhibit the biochemical processes of fruit.

Coating on the surface of the fruit can prevent transpiration so it can slow down withering and inhibit the rate of respiration.

A soaking solution that has been used is plant growth regulators (PGR). A type of auxin that can be used is indole-3-butyric acid (IBA). Application by soaking produces the difference of PGR concentration between the skin of the fruit and fruit flesh. Soaking the fruit in solutions of PGR a longer expected to produce a uniform penetration of the fruit. Soaking the fruit can be replaced by coating the fruit using materials that can be embedded with PGR. A fruit coating material that can be used is chitosan. IBA added in to chitosan coatings is expected to increase the absorption of PGR by the fruit, so it will prolong the shelf life and quality of banana cv. 'Cavendish'.

This research was aimed (1) studying the effects of the addition of IBA on chitosan coating on shelf life and quality of banana cv. 'Cavendish', and (2)

obtaining the best coating treatment to prolong the shelf life and maintain the quality of banana cv. 'Cavendish'.

The research was conducted at the Laboratory of Horticulture, Agrotechnology study program, Faculty of Agriculture, University of Lampung during July—August 2011. This research was arranged in 3 x 3 factorials of a completely randomized design. The first factor was the coating of chitosan with 3 levels, ie without chitosan [aquades (K0) and 0.5% acetic acid (K1)] and 2.5% chitosan (K2). The second factor was the addition of plant growth regulators IBA consisting of three levels, namely 0 (B0), 5 (B1), and 10  $\mu$ M (B2). The treatments were run in 3 replications. Each testing unit consisted of a cluster of 4—6 fruit fingers. Observed variables were shelf life, weight loss, fruit hardness, dissolved solids content ( $^{\circ}$ Brix), and free acid.

The results of this study indicated that (1) the addition of IBA at 2.5% chitosan solution could not extend the shelf life and maintain the fruit quality of banana cv. 'Cavendish'. (2) There was not best IBA concentration was added to the chitosan solution to get obtain the shelf life of banana cv. 'Cavendish' the best. Application of Chitosan 2.5% had the lowest a hardness,  $^{\circ}$ Brix, and free acid. (3) Good effect of chitosan coatings did not come from acetic acid used as a chitosan solvent.

Banana 'Cavendish' soaking in acetic acid had a shorten shelf life but the fruits had high hardness and its sweetness that were not different from other treatments.

Key words: banana, chitosan, IBA, soaking, Cavendish