ABSTRACT

EFFECT OF ADDITION INDOLE ACETIC ACID (IAA) ON CHITOSAN COATING OF THE QUALITY AND SELF LIFE FRUIT BANANA cv. 'CAVENDISH'

By

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Banana cv. 'Cavendish' is one of the leading export product of bananas. Postharvest problem that occur on banana cv. 'Cavendish' is the rapid process of ripening after the fruit is given ethylene and develops brown spots, so the shelf life is shorter and cause a decrease in fruit quality. Damage to fruit can be solved in several ways, one of them is by soaking the fruit in a solution or by coating the fruit, so the rate of respiration and transpiration can be slowed.

The material used for soaking the fruit was a plant growth regulators of indole acetic acid (IAA). By soaking banana cv. 'Cavendish' in a solution of IAA, the hormon is expected to infiltrate into the fruit slowly and evenly. A longer soaking can be accomplished by adding IAA to the coating material of chitosan. By applying IAA to the chitosan coating solution, the IAA will slowly infiltrate into the fruit during storage, so it can maintain quality and prolong the shelf life of banana cv. 'Cavendish'.

This research was aimmed at (1) studying the effects of the addition of IAA on the application of chitosan coating on quality and shelf life of banana cv. 'Cavendish', and (2) obtaining the best concentration of IAA added to the chitosan coating to maintain the quality and prolong the shelf life of banana cv. 'Cavendish'.

This research was conducted in the Laboratory of Horticulture, Faculty of Agriculture, University of Lampung during July─August 2011. This research used a completely randomized design, with treatments arranged in a factorial 3 x 3. The first factors were fruits without any treatment but water (K0), without chitosan but in acetic acid 0,5% (K1), and 2,5% chitosan (K2). The second factors were the concentrations of IAA in three levels: 0 (A0), 5 (A1), and 10 μM (A2). For the control, three banana clusters were directly observed at the first day of application. The observed variables were shelf life, fruit weight loss, fruit firmness, soluble solid (º Brix), and free acid content.

The results showed that (1) the addition of IAAs at concentration of 2,5% chitosan coating were not significantly able to prolong the shelf life and to maintain the fruit quality of banana cv. 'Cavendish' compared to the other treatments, (2) the addition of IAA concentrations of 5 μM and 10 μM in 2,5% chitosan coating did not affect significantly in prolonging the shelf life and maintaining the quality of banana cv. 'Cavendish' compared to the control, and (3) the addition of 0,5% acetic acid as a solvent in 2,5% chitosan did not cause a bad affect, but soaking in 0,5% acetic acid as a main solution adversely affected the quality and shelf life of banana cv. 'Cavendish'.

Key words: banana, Cavendish, browning, IAA, chitosan