

## **ABSTRACT**

### **1-METHYLCYCLOPROPENE (1-MCP) AND CHITOSAN APPLICATIONS TO INCREASE THE SHELF- LIFE AND MAINTAIN THE QUALITY OF ‘CAVENDISH’ BANANA FRUITS AT EARLY STAGE**

**By**

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‘Cavendish’ banana is one of climacteric fruits which is easily damaged during storage. It is because of its high respiration, etilen production and transpiration rates. One of the ways to increase the shelf- life and maintain the quality of banana ‘Cavendish’ is by using 1-methylcyclopropene (1-MCP) and chitosan applications that can hamper respiration, etilen production, and transpiration in the fruit.

The aims of this research were to (1) study the effect of 1-MCP application to increase shelf- life and maintain the quality of banana ‘Cavendish’, and (2) study the effect of applications combination of 1-MCP and chitosan to increase shelf- life and maintain the quality of ‘Cavendish’ banana fruits. The research was conducted in the Horticultural Postharvest Laboratory, Faculty of Agriculture, Lampung University during September- Oktober 2013.

Treatments were arranged in a completely randomized design, at 2x2 factorial . The first factor was control (no treatment with 1-MCP;  $M_0$ ) and treatment with 1-MCP ( $M_1$ ). The second factor was control (no treatment with chitosan 2,5%;  $K_0$ ) and chitosan 2,5% ( $K_1$ ). Observations were conducted on the stage changes, fruit weight, fruit firmness, total soluble solid ( $^{\circ}$ Brix), and free acid content.

Results showed that (1) 1-MCP application significantly inhibited ripening and deterioration of 'Cavendish' banana fruits than control by slowing the stage changes, fruit weight loss, fruit firmness,  $^{\circ}$  Brix, and acid content, (2) application of chitosan to 1-MCP treated fruits profoundly slowed ripening and quality decrease of 'Cavendish' banana fruits, but caused an imperfect fruit color development.

Key words: banana, 1-MCP, chitosan, storage life, quality