

ABSTRACT

EFFECT OF 1-METHYLCYCLOPROPENE (1-MCP), CHITOSAN, AND TEMPERATURE ON THE SHELF LIFE AND QUALITY GUAVA(*Psidiumguajava*L.) 'CRYSTAL'

By

DWI APRIANTI

Guava is a climacteric fruit, that is a fruit that has a respiration burst during ripening period and at the start of senescence. Metabolic processes such as respiration, transpiration and ethylene production may accelerate the shelf life and decrease the quality of guava 'Crystal'. There are several ways to cope with the process of respiration, transpiration and ethylene production, namely the application of *1-methylcyclopropene*, chitosan, and cold temperatures.

This study was aimed at determining the effects of (1) application of 1-MCP, (2) coating applications of chitosan, (3) the application of low temperature, (4), the combination of 1-MCP and chitosan, (5) a combination of 1-MCP and cold temperatures, (6) combination chitosan and cold temperatures, (7) and the combination among 1-MCP, chitosan coating, and treatment of low temperature on the shelf life and quality of guava 'Crystal'.

This research was conducted at the Laboratory of Postharvest Horticulture, Department of Agrotechnology, Faculty of Agriculture, University of Lampung. The research was conducted in August-September 2014. The experimental design used in this research was Completely Randomize Design (RTS), with treatments arranged in a factorial 2 x 2 x 2. The first factor was 1-MCP, control (without-MCP; M0) and with 1-MCP (M1). The second factor was chitosan, control (without chitosan 2.5%; K0) and with 2.5% chitosan (K1), while the third factor was the temperature, room temperature 28° C (T0) and with cold temperatures 20° C (T1).

The results showed that (1) application of 1-MCP did not markedly increase the shelf life, but was able to maintain the quality of guava 'Crystal', (2) the application of chitosan did not markedly increase the shelf life, but was able to maintain the quality of guava 'Crystal', (3) application of cold temperatures accelerated the shelf life, and was able to maintain the quality of guava 'Crystal', (4) there was no interaction among 1-MCP, chitosan, and cold temperatures in increasing the shelf life and maintaining the quality of guava 'Crystal'.

Keywords: 1-MCP, chitosan, guava 'Crystal', quality, shelf life, temperature