

ABSTRACT

EFFECTS OF APPLICATIONS OF 1-METHYLCYCLOPROPENE (1-MCP), PLASTIC WRAPPING, AND STORAGE TEMPERATURE ON THE SHELF-LIFE AND QUALITIES OF 'MUTIARA' GUAVA FRUITS

By

BAYU KESUMA WARDHANA

'Mutiara' guava fruit is classified as a climacteric fruit, which generally means that the fruit is able to continue postharvest physiological processes. The physiological process greatly affects the shelf-life and quality of fruit. Some efforts of postharvest techniques for extending the shelf-life and quality of guava fruit have been conducted. They were the applications of 1-MCPs, plastic wrappings, and storage temperature.

This research was aimed at studying the effects of (1) a single application of 1-MCPs, plastic wrappings, and storage temperatures (2) treatment combinations between 1-MCPs and plastic wrappings, 1-MCPs and storage temperatures, and plastic wrappings and storage temperatures and (3) treatment combinations among 1-MCPs, plastic wrappings and storage temperatures on the shelf-life and qualities of 'Mutiara' guava fruits.

The treatments were arranged in a factorial 2 x 2 x 2 in a completely randomized design with three replications. The first factor was 1-MCPs (without and with 1-

MCPs), the second factor was plastic wrappings (without and with one layer of plastic wrapping), and the third factor was storage temperatures (a cold temperature of 20 °C and a room temperature of 27 °C).

The results showed that (1) 1-MCP application did not significantly affect fruit shelf-life, physical and chemical fruit qualities such as fruit firmness, weight loss, soluble solid and acid contents, and sweetness of 'Mutiará' guava fruits, (2) the application of plastic wrapping was able to extend fruit shelf-life by 11.16 days longer than control, and to suppress fruit weight loss, and maintain fruit firmness, but did not affect chemical qualities of 'Mutiará' guava fruits (3) storage at cold temperatures did not significantly increase fruit shelf-life, affect fruit firmness and chemical qualities of 'Mutiará' guava fruits, (4) there were no interaction effects among 1-MCPs, plastic wrappings and storage temperatures in affects fruit shelf-life, fruit firmness and fruit weight loss, and chemical qualities of 'Mutiará' guava fruits.

Keywords: guava, 1-methylcyclopropene, wrapping, temperature, shelf-life, quality