

Abstract

THE EFFECT OF AMINOETHOXYVINYLGLYCINE(AVG), CHITOSAN, AND COLD TEMPERATURE ON THE SHELF LIFE AND QUALITY OF GUAVA (*Psidium guajava* L.) ‘CRYSTAL’

By

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Guava ‘Crystal’ is a climacteric fruit. After harvest, the fruit continues its metabolic process which is indicated by ethylene production and a respiration burst during fruit ripening. High respiration and ethylene productions will hasten deterioration of guava. The objectives of the research were (1) to know about the effectivity of *aminoethoxyvinylglycine* (AVG) in lengthening the shelf life and maintaining the quality of guava fruit cv. Crystal, (2) to know about the effectivity of chitosan as fruit coating in lengthening the shelf life and maintaining the quality of guava fruit cv. Crystal, (3) to know about the effectivity of low temperature regime in lengthening the shelf life and maintaining the quality of guava fruit cv. Crystal, and (4) to find the best combination of AVG, chitosan, and low temperature in lengthening the shelf life and maintaining the quality of guava fruit cv. Crystal.

Research was conducted at Laboratory of Horticultural Postharvest, Department of Agrotechnology, Faculty of Agriculture, University of Lampung, from September to Oktober, 2014. Experiments were arranged in a completely randomized design in a factorial treatment of 2 x 2x 2 and each factor was replicated 3 times. Treatments were divided into three factors, and the first was without AVG and with 1.25 ppm AVG, the second was without chitosan and with 2.5% chitosan, and the third was room temperature (25.2 ± 1 °C) and low temperature regime (20.58 ± 1 °C). Each experimental unit consisted of one guava fruit placed on a styrofoam plate. Observation variables were length of shelf life, fruit weight loss, fruit hardness, total soluble solid content, titratable acids, and fruit sweetness index.

The result showed that: (1) the application of 1.25 ppm AVG did not prolong the shelf life of guava fruit cv. Crystal and showed similar fruit quality with the control except having lower tritatable acids value: (2) the application of 2.5% chitosan prolonged fruit shelf life by 11 days and was able to maintain the quality of guava fruit cv. Crystal: (3) storing guava fruit cv. Crystal at a low room temperature of (20.58 °C) did not prolong fruit shelf life, meanwhile its quality was similar to control: (4) the best treatment combination was achieved by applying 1.25 ppm AVG, 2.5% chitosn, and storing at room temperature of 20.58 °C since this combination was able to improve shelf life by 17 days (in compare to control) while still maintaining good quality of guava fruit cv. Crystal

Key word : *aminoethoxyvinylglycine*, chitosan, tempetarure, guava, quality.