

Thesis Title	Effect of Calcium Chloride Solution on Physiological Changes of 'Sun lady' Cantaloups during Storage
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Abstract

A study on the effect of calcium chloride on physiological changes of 'Sun lady' cantaloups was conducted during storage. The study were performed at 5 different concentrations of calcium chloride, 0 (control) , 2 , 4 , 6 and 8 % (w/v), at normal atmospheric condition for 2 hours and partial vacuum infiltration at 460 mmHg for 5 minutes and then stored at 20 °C, 85 %RH. A 5 x 2 factorial in Completely Randomized Design was applied to the experiment. The results showed that dipping in calcium chloride solutions increased calcium contents in epidermis, hypodermal and middle mesocarp. Fruit firmness in epidermis and middle mesocarp were higher than those in the control. The partial vacuum infiltration with 8 % calcium chloride at 460 mmHg showed the highest calcium content and firmness in epidermis and middle mesocarp while water soluble pectin in epidermis and middle mesocarp, weight loss, respiration rate and ethylene production changed slightly. Calcium chloride concentrations had effect on peel color change, but no effect on pulp color change. Furthermore, the cantaloups treated with all levels of calcium chloride could prolong the shelf-life to 20 days while the treatments without calcium chloride could stand only 15 days. For calcium chloride applications, the fruits dipped by partial vacuum infiltration at 460 mmHg could increased calcium content in epidermis, hypodermal mesocarp, middle mesocarp, and fruit firmness in epidermis and middle mesocarp higher than those under normal atmospheric condition, while water soluble pectin in epidermis and middle mesocarp, weight loss, respiration

rate and ethylene production were lower than those under normal atmospheric condition. However, both calcium chloride applications had no effect on color change in middle mesocarp. For sensory tests, the results showed that the trained consumers rejected the bitter taste of the cantaloup treated with 6 and 8 % calcium chloride while they were mostly satisfied in the taste of cantaloup dipped by partial vacuum infiltration with 4 % calcium chloride at 460 mmHg.

Keywords : Cantaloup/ Calcium Chloride/ Shelf life/Dipping/ Partial vacuum infiltration