Thesis Title	Effects of Gibberellic Acid, Ascorbic Acid, Citric Acid and Controlled Atmosphere Conditions on Browning of Longkong (*Aglaia dookkoo* Griff)
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Abstract

Effects of gibberellic acid, ascorbic acid, citric acid and controlled atmosphere conditions on browning of longkong (*Aglaia dookkoo* Griff) were studied. The experiment was divided into three trials. In the first experiment, the effect of gibberellic acid at 100, 200, 400 ppm for 5 minutes at 20 °C, 90-95 % RH on browning of longkong were investigated. It was found that there was no difference in phenolic content, activity of phenylalanine ammonialyase (PAL), activity of polyphenol oxidase (PPO), respiration rate, ethylene production, weight loss, ascorbic acid and titratable acidity between the treatments of all concentrations of gibberellic acid and water (control). Both fruits treated with gibberellic acid and water had a storage life of 10 days. However, longkong dipped in gibberellic acid at 200 and 400 ppm had better acceptable quality than those dipped in water and gibberellic acid at 100 ppm. The second experiment was to study the effects of 0.5 and 1.0% ascorbic acid and 2.0, 4.0 and 6.0 % citric acid at 20 °C, 90-95% RH. The results showed that longkong dipped in all concentrations of ascorbic acid and citric acid had tissue damage because of high concentration. The skin of longkongs showed browning with weight loss and increasing in respiration rate and ethylene production.The fruits were also deteriorated more rapidly than those treated with water. In the third experiment, the effect of controlled atmosphere storage was studied. Longkongs were stored at various controlled atmosphere conditions such as 3%CO_2, 6%CO_2, 2%O_2, 6%O_2, 3%CO_2+6%O_2, 6%CO_2+6%O_2, 3%CO_2+2%O_2 and 6%CO_2+2%O_2 at 13 °C, 90-95% RH. Under those controlled storage conditions, ethylene production, weight loss, activity of PAL and

retarded color change and browning of peel were reduced and the fruits had extending storage life of 12 days. Longkong treated with 3%CO_2+2%O_2 and 6%CO_2+2%O_2 were found to deteriorate by off-flavor due to fermentation. The fruits treated with the controlled atmosphere conditions except those two conditions showed no difference in discoloration.

Keywords: Longkong / Browning / Gibberellic acid / Ascorbic acid / Citric acid / Controlled atmosphere