

Thesis Title	Effect of Heat Treatment on Physical Changes and Prevention of Oxidation in Papaya Fruit Stored at Low Temperature
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Abstract

“Sunrise” papayas were harvested at mature (130 days after flowering) and divided into 4 treatments; stored at 20, 13, 5°C and heated at 42°C for 6 hrs before stored at 5°C. The results showed that papayas stored at lower temperature could prolong storage life for 10, 25, 30 and 30 days, respectively. However, papayas stored at 5°C displayed the most of chilling injury symptoms which included hard areas in the pulp and skin pitting but also abnormal ripening whereas the papayas stored at 13 and 20°C showed no symptoms of chilling injury. Heat treatment was shown to reduce chilling injury symptoms that had lower chilling injury index and electrolyte leakage than papayas stored at 5°C. Study on the effect of heat treatment on physical and biochemical changes found an increase in quality of fruit ripening : more color development, decreased firmness, increased respiration rate and ethylene production and increased sugar contents when compared with papayas stored at 5°C. Furthermore, heat treatment also affected on prevention of oxidation as indicated by the decline of superoxide dismutase and catalase activity, suppressed the increase in peroxidase activity, high level of polyamines, low level of total peroxides and lipid oxidation than papayas stored at 5°C.

Keywords : Chilling injury/ Heat treatment/ Lipid oxidation/ Papaya