

Title Inhibition of pericarp browning after thawing of frozen lychee fruit by oxalic acid dipping

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Abstract

The effect of oxalic acid on pericarp browning after thawing of frozen litchi fruit stored at low temperature (-20 °C) for extending shelf life was studied. Fresh lychee fruits were harvested and dipped in hot water ($98 \pm 1^\circ\text{C}$) for 30 seconds and then soaked in oxalic acid solution at various concentrations of 0, 5 and 10 % for 15 minutes. After the acid treatments, the fruits were pre-cooled and frozen to -18 °C. After freezing, they were stored at -20 °C for 6 months. The frozen fruits kept for 6 months were thawed and placed at room temperature (28 °C) for 0, 1, 3 and 12 hours. Oxalic acid dips before freezing was found to be effective in controlling browning after thawing. Treatment with hot water, followed by 10 % oxalic acid dips, resulted in the retention of red pericarp color and gave the best browning inhibition up to 12 hours after thawing by reducing the activities of PPO and POD. Moreover, the acid dips had no effect on consumption quality.