

Postharvest quality of Frangi papaya after double hot-water dip followed by various cooling water temperatures

ABSTRACT

'Frangi' papaya is F1 hybrid cultivar which was developed and released by a Malaysian company in 2006. As quarantine requirements, papaya fruit need to go through double hot water immersion. Immediate cooling of fruit after hot water immersion is needed to remove the heat from fruit. Since 'Frangi' papaya is a new hybrid and its physiology may differ from other cultivar. Therefore, this study was carried out to determine optimum cooling water temperature for 'Frangi' papaya after hot water dipped treatment. Mature green papaya fruit were dipped in 42°C for 30 min then 49°C for 20 min. This followed by cooling the fruit with (i) running tap water of 26°C, (ii) cool water of 15°C and (iii) cool water of 4°C. The cooling was carried out for 20 min for all the temperature of water. Fruit that did not cool with water act as control. The fruit was then initiated to ripening using 1 ml L-1 ethylene. Fruit peel colour (L^* , C^* and h°), firmness, soluble solids concentration (SSC), titratable acidity (TA) and pH at day 0, 3 and 6 were being analysed. The h° , SSC, TA and pH of fruit was affected significantly by interaction between water temperature \times ripening day. There were no significant differences in h° values among treatment at ripening day 0 and 6. At day 3, control has significant lower h° than fruit cooled with 15 and 4°C of water. The firmness of 'Frangi' papaya was not affected by water temperature but decreased significantly when fruit ripened from day 0 to 3. At day 0, SSC was not affected by water temperature. By day 6, SSC of control was significantly higher than others cool water treated fruit. At day 0, the control fruit has significant lower TA than others treatment fruit. As ripening progressed, no significant differences were found among treatments. For pH, all treatments did not show any differences at day 0. By day 3, fruit cooled with 26°C water has the highest pH but by day 6, fruit cooled with 4°C has the highest pH. The quality of 'Frangi' papaya whether cooled with water or not after hot water dip was almost the same except SSC and pH.

Keyword: Peel colour; Firmness; Soluble solids concentration; Titratable acidity; pH