

Title Ripening behavior and quality of 'Brazilian' bananas following hot water immersion to disinfest surface insects.

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#### **Abstract**

The fruit quality and ripening response of 'Brazilian' bananas (*Musa* sp., group AAB, harvested on 1 May, 10 July and 21 August 2002 from Keaau, Hawaii) were determined following hot water immersion treatments for surface disinfestation. Summer-harvested fruits were exposed to 47, 49 or 51 deg C water for 10, 15 and 20 minutes and ripened at 20 deg C. The summer experiment established the exposure time and temperature limits for fruit injury. Winter-harvested fruits were immersed in 48, 49, or 50 deg C water for 5, 10 and 15 minutes, stored for 12 days at 14 deg C, and ripened at 22 deg C. The hot water exposure time had a greater effect than the water temperature on banana fruit ripening. Nontreated bananas ripened after 13 to 15 days, and ripening was delayed by 2 to 7 days when fruits were exposed for 15 or 20 minutes to hot water. Hot water treatments did not inhibit pulp softening, but peels tended to be firmer for bananas immersed in hot (49 to 51 deg C) water compared to the control fruits. Heat-treated bananas were not that different from control fruits in terms of soluble solids content or titratable acidity; however, the conversion of starch to sugars was reduced at higher temperatures and exposure times. Bananas exposed for 20 minutes to hot water had delayed respiratory peaks and ethylene production, especially at 51 deg C. Mild peel injury was observed on fruits exposed to higher temperatures (49 to 51 deg C) for longer durations (15 or 20 minutes).