

Title Changes in antioxidants and fruit quality in hot water-treated 'Hom Thong' banana fruit during storage

Author Nittaya Ummarat, Tracie K. Matsumoto, Marisa M. Wall and Kanogwan Seraypheap

Citation Scientia Horticulturae, Volume 130, Issue 4, 31 October 2011, Pages 801-807

Keywords Banana; Hot water treatment; Low temperature storage; Antioxidants

Abstract

The effects of hot water treatment on antioxidants and fruit quality were investigated in banana fruit of cv. Gros Michel (*Musa acuminata*, AAA Group, locally called cv. Hom Thong) by immersing fruits in hot water (50 °C) for 10 min, before storage at 25 °C for 10 days or 14 °C for the first 8 days followed by storage at 25 °C for the second 8 days until ripening. Quality parameters including peel color and pulp firmness indicated that hot water treatment helped to delay banana fruit ripening at both storage conditions. Hot water treatment decreased the levels of hydrogen peroxide (H₂O₂) and malonyldialdehyde (MDA) during storage at 25 °C. Glutathione (GSH and GSSG) contents and the ratio of GSH/GSSG during fruit approaching ripening were significantly induced in hot water-treated fruits while ascorbic acid (AA) contents were slightly increased. In addition, the combined treatment increased free phenolics and flavonoids during storage. Results suggest that hot water treatment has led to an induction of antioxidants in banana fruits as indicated by an increase of antioxidants and a decrease of H₂O₂ during ripening, and all of which result in a delayed ripening of banana fruit.