

## Effect of Hot Water Immersion Treatments on the Fruit Quality of Atemoya (*Annona squamosa* x *A. cherimola* hybrids)

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### Abstract

The tolerance of atemoya (*Annona squamosa* x *A. cherimola* hybrids) to different hot water immersion treatments were investigated. The critical time that the fruit can tolerate to each temperature is 15 seconds at 60°C, 50 seconds at 55°C, 3 minutes at 50°C, 25 minutes at 48°C and 40 minutes at 46°C. The effect of hot water immersion treatment on fruit quality stored at room temperature (25°C) and low temperature (8°C) were tested. Two conditions, 48°C/5 min and 50°C/2 min, which do not damage the fruit and are more efficient in operation, were the treatment group, and that without treatment was the control group. Stored at room temperature, all of fruits were marketable and there was no significant difference in appearance and edible quality between treatments. The fruits treated with hot water immersion were ripen earlier than the control about 0.5 day. Stored at 8°C for 10 days, the incidence percentage of peel browning caused by chilling injury in the control was 100%, while the incidence percentages of 48°C/5 minutes and 50°C/2 minutes were 0% and 27%, respectively, which were significantly lower than those of the control. The peel lightness (L\*) of the control was significantly lower than that of the two hot water treatments. However, the fruits treated with hot water had unexplained physiological brown spots, and the incidence percentages of 48°C/5 minutes and 50°C/2 minutes were 40% and 20%, respectively, and 0% in the control. There were no significant difference between treatments in terms of days to ripening and pulp quality. The research and development of hot water immersion treatment technique in atemoya is helpful for the application of fruit preservation and export quarantine.

**Keywords:** Atemoya, Hot water immersion treatment, Low temperature storage, Browning

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