

Poster Session 6: Postharvest physiology and technology

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Ripening and quality of hot water treated mango cv. 'Tommy Atkins' after refrigerated transit period plus seven days under marketing conditions

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Abstract

The present study had the objective of evaluate the effect of hot water quarantine treatment on the postharvest maturation and quality of Tommy Atkins mango fruit after refrigerated eighteen days transit plus seven days at marketing temperature. The experimental design was a completely randomized in a factorial (2 x 3) treated and untreated hot water fruits and three times of evaluation: beginning and ending of eighteen days simulate transit period at 10°C and 90% of relative humidity and after plus seven days at 20°C and 80% of relative humidity to simulate market period. Ten repetitions were used per treatment, with one fruit per plot. The analyzed variables were mass loss, firmness, peel and flesh color (brightness, chromaticity and hue angle), solubles solids, pH, titrable acidity and ratio soluble solids/tritable acidity. The decrease in acidity, which occurs naturally during ripening of mango fruit, increased after the transit and marketing period, but the reduction in acidity was significantly higher in hot water untreated fruits. These results had a positive influence on the taste of the hot water untreated fruit that had a SS / AT ratio values three times higher than treated fruit at the end of the marketing period. About the Hue angle values, it seems that from the beginning of the experiment, fruit treated with hot water had the skin lighter green than untreated fruit. At the end of the transit period, the skin color of the treated fruit was already much more yellow (Hue = 90°) than untreated fruit. During the marketing period, the fruits of both treatments had reached the yellow color resulting from the rapid chlorophyll pigments degradation and the exposure of the yellow pigments, naturally present in the skin cells. The purity of color (chromaticity) increased in both treatments, both during transport and during the marketing period, however, at the end of the transit period the pulp of untreated fruits already had a yellow color and at the end the marketing period the pulp showed a characteristic orange color of fully ripe fruit. Under the conditions in which the experiment was carried out, it can be concluded that most suitable values of firmness, pH, titrable acidity and the higher soluble solids and ratio soluble solids/tritable acidity and better pulp developed orange color, indicate that the fruits not subjected to hot water treatment have best quality and most appropriate maturity for consumption than fruits submitted to hot water treatment, although these have shown better development of skin color.

Keywords: *Mangifera indica* L., hot water, quarantine treatment, postharvest quality