Title	Methyl jasmonate improved sensory attributes and reduce severity of chilling injury in hydrothermally treated Manila mangoes
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Abstract

Chilling injury (CI) is an important physiological disorder that develops in Manila mangoes during refrigerated storage. Methods for control of this disorder have been explored by researches in order to minimize handling losses. In recent reports application of methyl jasmonate (MJ) has shown to decrease severity of CI symptoms in several horticultural products; however, no studies on the application of MJ on Manila mangoes have been found in the technical literature. The purpose of this work was to evaluate the combined effects of hydroethemal treatment and application of MJ on reduction of CI symptoms and sensory changes of Manila mangoes. A single lot of Manila mangoes was obtained from an Agricultural Experiments Station. Half of the lot was subjected to the USDA-approved disinfestant hydrothermal treatment (46.1 °C for 65 min). Half of the treated mangoes were exposed to MJ vapors (10-4 M, 25 °C for 12 h). All fruit was stored at 6, 12 or 25 °C for up to 32 days. Samples were withdrawn every 4 days and transferred to 25 °C for ripening. CI index, compositional parameters and sensory evaluation (aroma, flavor, acidity and sweetness) were periodically evaluated. Hydrothemal treatment reduced the severity of CI of treated mangoes that were stored for 14 days at 6 °C. Control fruit developed CI symptoms after 4 days at either 6 or 12 °C. Mangoes exposed to MJ had better sensory attributes (flavor, aroma and sweetness) than control mangoes. Natural color changes from light green to yellow developed faster and color was more homogeneous in the peel of fruit exposed to MJ than in control mangoes. Weight loss, respiration rate and ethylene production were smaller in MJ-treated mangoes and was correlated with less severe CI symptoms. Our data supports the proposed benefits of MJ usage in mangoes. Longer shelf lives and better sensory attributes of mangoes exposed to MJ suggest the potential of this natural compound for commercial application in the extension of shelf-life al partial control of CI symptoms of mangoes.