

Title Effect of paclobutrazol on post harvest shelf-life of *Mangifera indica* cv manila
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Abstract

Paclobutrazol is a plant growth regulator that has been extensively applied on tropical fruits. This compound is a gibberellin-biosynthesis inhibitor. The mango cropping manipulations with paclobutrazol result in a significant increase in flowering, earlier flowering and increase yields. Previous researches show that the ripening of different species of mango are different using paclobutrazol; and the early application of paclobutrazol increased fruit TSS (total soluble solids), acidity, sugar, ascorbic acid and carotene contents. We hypothesize the paclobutrazol may induce physiological changes on the postharvest life of *Mangifera indica* cv. manila and this fruit. Therefore the aim of this study was to research the effects of paclobutrazol on the physiological characteristics of *Mangifera indica* cv. manila postharvest. Production of CO₂ was determined by gravimetric method. Soluble solids were measured at 20 °C with a temperature-controlled refractometer (ATAGO). The fruit firmness was determined using a penetrometer SURBERLIN PNR 10. Anthracnose damage was evaluated visually as percent surface area affected by anthracnose. Results showed that the respiration rate, firmness and soluble solids were lower for fruits treated with paclobutrazol. The incidence of anthracnose in mangoes treated with paclobutrazol was lowered even 70%. The results also show that combination of paclobutrazol, hydrothermic treatment and 15 °C produce a lower metabolism than the fruits in the same conditions of storage. These results suggest that paclobutrazol induces physiological changes slowing down the respiration rate, the developing of soluble solids, possibly the enzymatic activity and enhancing the resistance of *Mangifera indica* cv. manila against the anthracnose. The combination of paclobutrazol and 15 °C of temperature enhancing this resistance. Therefore, the ripening process of treated fruits is delayed, extending the post harvest storage of manila mangoes.