

Title Potassium permanganate effects in postharvest conservation of the papaya cultivar Sunrise Golden

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Abstract

The objective of this work was to evaluate the effects of KMnO₄ on the extension of postharvest life of 'Sunrise Golden' papaya, stored under modified atmosphere and refrigeration. Fruit with up to 10% yellow peel were harvested in a commercial orchard in Linhares, state of Espírito Santo, Brazil. Sets of three fruit (unit mass of 289.9±18.5 g) were wrapped in low-density polyethylene films (28 μ m thick) containing sachets of KMnO₄ at 0, 0.5, 1, 1.5, and 2 g per bag. The bags were sealed and stored at 10.4±0.9°C and 90±5% relative humidity for 25 days. After this period, the fruit were removed from the bags and maintained at 21±0.8°C and 90±5% relative humidity until complete ripening. Four days after bag sealing, CO₂ concentration stabilized in all treatments, and was higher in bags without KMnO₄. In all treatments, fruit reached the climacteric respiratory peak on the third day after bag removal, coinciding with peel color index of 3.5. Increasing the KMnO₄ dose reduced the losses in fruit fresh matter, consistency and pulp electrolyte leakage. Potassium permanganate was effective in maintaining the fruit at the pre-climacteric stage during the 25-day storage, and did not interfere with normal ripening after bag removal.