

عنوان مقاله:

Melatonin and Chitosan Coating Effects on Banana Postharvest Life and Physiological Traits

محل انتشار:

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خلاصه مقاله:

Fruit ripening involves marked physiological and biochemical changes that affect fruit color, taste, aroma, texture, and nutritional value. A significant amount of research has shown that chitosan interacts with other postharvest treatments, which can enhance the impact of the chitosan coating. This study considered the effects of chitosan coating and melatonin on banana shelf-life and fruit quality at the green mature stage. The studied variables had three levels of melatonin 0, 75, and 150 mg L⁻¹, two levels of chitosan coating 0, 0.25, and 0.5%, and three storage durations 3, 6, and 9 days. Fruits were harvested at the green mature stage and stored at 25 °C and 80% RH for 9 days. The results showed that melatonin and chitosan coating interacted and significantly affected green mature banana quality and shelf-life during the storage time. Chitosan and melatonin interaction delayed the decrease in chlorophyll and the increase in carotenoids, fruit maturity, and color change. Our results showed that on the ninth day of storage under chitosan (0.5%) treatment along with melatonin at a concentration of 150 mg L⁻¹, the total chlorophyll content became 3.89% lower than that under control conditions. The level of antioxidant enzyme activity in the treated samples after 3, 6, and 9 days of storage was more than in the control sample. The results showed that chitosan (0.5%) and melatonin (150 mg L⁻¹) successfully increased the shelf life of banana fruits.

کلمات کلیدی:

Antioxidant Enzymes, Edible coating, Harvest time, melatonin, TFC, TPC

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