

Conserving three morphotypes of cocona fruits (*Solanum sessiliflorum* Dunal) through wax coating and low temperature storage

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Abstract

Cocona is an Amazonian fruit with applications in the agri-food, cosmetic and nutraceutical industries. To preserve cocona quality, some postharvest-decay delaying treatments were evaluated. Cold temperature + waxing treatments were assessed in three morphotypes (small-rounded, elliptical and giant) that were collected in the mature state (yellow color on 75% of total fruit surface) in the Guaviare Department, Colombia. A Hortitec[®] wax (water solution 1:3 v/v) was applied and air dried. Fruits were stored at low temperatures ($10\pm 2^{\circ}\text{C}$ at 85% relative humidity RH) and at room temperature for the control ($20\pm 2^{\circ}\text{C}$ at 75% RH). CO_2 and ethylene emission, weight loss and color were tracked every two days for two weeks. Low temperatures delayed cocona senescence by up to 2 to 4 times as compared with room temperature, combined with respiratory and weight loss reduction for the three morphotypes. The small-rounded morphotype was the most sensitive to quality losses and exhibited a higher daily fresh weight loss rate while color didn't exhibit differences between treatments. Hortitec[®] coating didn't improve storage performance of cocona fruits. CO_2 production and an undetectable ethylene emission suggest a non-typical behavior of cocona for at least two of the morphotypes. The small-rounded morphotype showed a slight climacteric pattern that was not accompanied by a peak of ethylene production or color changes. Low temperature storage is a feasible treatment if scaled to the local conditions of the Colombian Amazon region, which could improve cocona marketability.