

Title Postharvest quality of cactus pear fruits stored under modified atmosphere and refrigeration
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Abstract

The *Opuntia* cactus is a xerophyte that grows mainly in arid and semiarid zones, such as Brazilian Northeast. In the future, declining water resources may increase *Opuntia* importance as an effective food production system including both fruits and vegetable parts. In Brazil, cactus pear fruit is increasingly gaining attention both for health-promoting and nutritional benefits; however, its postharvest conservation needs to be evaluated. The present work had as objective to evaluate the postharvest conservation of cactus pear fruit coming from Cariri Paraibano region, stored under modified atmosphere and refrigeration. Fruits were harvested at two maturity stages (E1=Light green and E2=Green Yellowish), maintained under modified atmosphere (MA) by PVC film and ambient atmosphere (without packaging – AA), and stored 10°C. Three replications of each treatment were evaluated during 18 days. The use of MA resulted in lower mass loss for fruits harvested at stage E1. Fruits of stage E1 also maintained lower total soluble solids and titratable acidity, and higher vitamin C contents. The general appearance was maintained above the acceptance limit (Score 4 of a 1 to 9 scale) for fruits of stage E1 under MA, up to 18 days storage. Chilling injury was detected for fruits maintained under AA at 10°C for both maturity stages. Therefore, the use of MA by PVC film for cactus pear fruits harvested at maturity stage E1 was shown efficient in alleviating chilling injury and maintaining postharvest quality.