Title Effect of modified atmospheres storage in quality and shelf life of fresh cut pitahaya slices (*Hylocereus undatus*, Haworth) packed in plastic bags

Author Vargas-Vargus Lourdes, Tamayo-Canul Elsy, Centurión- Yah Alma and Sauri-Duch E.

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Abstract

The quality of fruits and vegetables and fresh cut processed it is incremented if they are stored in modified atmospheres, at low O_2 and high CO_2 concentrations, and at low temperatures. Pitahaya (*Hylocereus undatus*, Haworth), is a tropical fruit from Mexico and Tropical America, and its market is growing rapidly. It is a spherical or slightly oval red skin berry, about 8-10 cm diameter. Pitahayas stored at 4-8 °C, after 15 to 18 days, decay, and diminish the quality of fruit, however, pulp have not significantly changes, but this changes of quality limit its marketing. The objective of this work was evaluate the effect of the storage at 4 °C of fresh cut slices pitahayas, in its quality, when they were storage in plastic bags of two different plastic materials, polypropylene (PP) and polyvinyl chloride (PVC). The characteristics of quality evaluated were ethanol and acetaldehyde content, changes of ascorbic acid, acidity, firmness, the number of microorganisms in the slices, and change of composition of the atmosphere inside the bags was also analyzed. The results obtained indicate that the maximum increase of CO_2 and diminish of O_2 concentrations were achieved with PP film. The change composition of atmosphere inside PP film bags and low temperature storage conserve better the ascorbic acid concentration, acidity and firmness, and microorganism number increased lower than in slices storage at same temperatures in PVC film. Although the ethanol content in the slices stored in PP film was higher than those slices stored in PVC film, the concentration achieved did not affect the acceptance. The storage pitahaya slices at 4 °C in PP film bags allowed increase the shelf life to 28 days of storage.