Abstract

Pitahaya (*Hylocereus undatus*) (Strawberry pear) is a tropical cactaceae, exotic fruit of round or global form, with skin of characteristic red color and prominent scales. The thin rind encloses a large mass of sweetly flavored white pulp with a characteristic sour-sweet flavor. It contains a great quantity of small black seeds evenly distributed in all of the pupl. During recent years some new tropical fruits have been incorporated to the international markets and, at the same time, the international demand of exotic fruits have been incremented significantly. The pitahaya has a relatively short shelf life, about 7 days at room temperature and 20 days at 8ºC, longer storage produces damage for chilling injury. Controlled atmospheres (CA) with low concentration of oxygen and/or high content of CO_2 have been used in order to increment postharvest life of fruits and maintain their quality. Some of the benefits that CA offer are: control of the decay of fruits, slowing the decrease of organic acids, reduction rate and production of ethylene, and a delay of fruit softening. The objective of this work was to study the effect of the atmospheres with low concentrations of oxygen on quality and shelf life of pitahaya fruit. The fruits were harvested with 70% of red colored skin. Treatments were made in plastic containers of 5.5 liters of capacity, closed with hermetic lids and stored at 12ºC during 35 days; six fruits in each container. Three treatments were evaluated, a) 1%, b) 3% and c) 21% of Oxygen (reference). The composition of the atmosphere of each treatment was kept constant by means of a continuous flow of gases at 35 ml/min in each container, with the corresponding concentration of oxygen during all study. This flow also avoided the accumulation of ethylene. The variables studied were: the contents of ethanol, acetaldehyde, and vitamin C, acidity and firmness of the pulp. The storage with atmospheres low in oxygen had a positive effect in the conservation of pitahaya. Fruits stored at 1% Oxygen conserved better appearance and better quality during more time. Acidity, vitamin C and firmness of pulp diminished slower than fruit in 32 and 21% Oxygen. The accumulation of acetaldehyde was small and, although there was an accumulation of ethanol during storage, the concentration reached did not affect their sensorial characteristics of quality, reaching a shelf life of 30 days.