Title Effect of storage temperature on quality of minimally processed cactus pear

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Abstract

Mexico is the world's main producer of prickly pears with a high percentage of this production being consumed by the domestic market. Surplus fruits are typically lost to spoilage during the peak of the harvest season. Offering fruit as pre-cut product and developing other processing alternatives may improve marketing. The objective of this work was to study the effect of temperature on the quality of minimally processed cactus pears. Fresh cactus pears 'Cristalina' were cleaned, selected, peeled, disinfected and stored for 12 days at 2, 6 and 10ºC under a constant air flow. Production of CO_2 and ethylene were analyzed periodically, as well as the soluble solids content (SSC), acidity, phenols, sugars, hue change and texture. The respiration rate and ethylene production were the highest in the peeled samples (18 ml CO_2 kg^{-1} h^{-1}) when compared to whole fruits. After twelve days of storage, the phenol content reached values of 5.8, 13.2 and 26.4 mg of catechin g^{-1} dry tissue for 2, 6 and 10ºC, respectively. The hue value diminished slightly at 2ºC to 93 and decreased drastically at 6 and 10ºC to 65 and 73, respectively. The SSC decreased after 12 days of storage, while total sugars increased. At 2ºC, the changes were less (from 13.8 to 11.9 in SSC and from 11.1 to 12.8 g 100^{-1} fresh tissue for total sugars). A temperature of 2ºC was best for preserving minimally processed cactus pears up to 12 days.