Title Postharvest study of Tuna de España fruits (*Opuntia ficus-indica*) growing in Vanezuela

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Abstract

Tuna de España fruits belongs to *Cactaceae* family and originally from Mexico and taken to Spain by conquerors. In Venezuela is well suited to soil and climatic conditions of our country so that it becomes necessary to study the behavior of post-harvest fruits. Some physical (fresh weight, specific gravity and firmness) chemical (acidity, soluble solids, total chlorophyll an carotenoids) physiological (respiratory activity) and biochemical analyses (activities of the enzymes pectinmetilesterase, polygalacturonase and cellulase) were performed during ripening of fruits in environmental conditions (28 +/-2 Celsius degree and 60- 70 RH) and cooling (14 +/- Celsius degree and 85-100 RH). Fruits were harvest at physiological maturity according to hedonic or subjective texture scale. In general, the behaviour postharvest not showed a clear trend during ripening, however, it was noted that fresh weight, acidity, total chlorophyll decreased in both conditions being more pronounced in environmental conditions. Total carotenoids content was low and variable during the ripening of fruits in both conditions. Fruits showed a behavior similar to climacteric fruit. Pectin methyl esterase activity was increased in the state of physiological maturity and overriped. Polygalacturonase activity increased in early states of ripening Cellulase enzyme only showed activity in the state green but physiologically mature. The fruits of Tuna de España showed a longer shelf life under refrigeration preserving characteristics of fresh weight, color, firmness and soluble solids. A totally randomized experimental was designed and Tukey tests were performed.