

Title Storage effect on the physico-chemical quality of sapota fruit pulp (*Manilkara achras*), obtained from different varieties

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Abstract

Introduction: Sapota fruit (*Manilkara achras*), cultivated in tropical America, is used mainly for fresh consumption, It is characterized by a high-yield pulp (76.0% w/w), high sugar content (15-24.6%), Fe and Mg. In Venezuela, the major producing areas are located in Zulia State (Mara, Páez and Maracaibo municipalities), with a production of 18,000 MT/Ha/ year; approximately 10,800 MT/year supply the domestic market. It is estimated that about 50% of it is lost in the countryside, mainly because the small fruits are not demanded, an amount that could be used for an industrial exploitation of great potential for developing a wide variety of products. **Materials and Methods:** Physico-chemical characteristics of three varieties of sapota fruit (“Criollo”, “Santiago” and “Tiberio”), from a commercial farm of Mara municipality, were studied. Weight, length, width, number of seeds and firmness of fruits, and pulp yielding were determined. The pulp was frozen at -15°C. Changes related to pH, °Brix, titrable acidity, dry matter, protein, crude fat, crude fiber, ash, Ca, P, Na, K, Fe, Mg and total carbohydrate at 0, 30, 60, 90 days of storage, were evaluated. The experiment involved a completely randomized design in a 4 × 3 factorial arrangement with five replications. **Results and Discussion:** The analysis of variance and mean values obtained through the Turkey’s method, demonstrated that variety significantly ($p < 0.05$) affected all variables except number of seeds, ash and Fe. Time of storage did not affect titrable acidity, fat, crude fiber, ash, P and Fe. Variety x Time of storage affected ($p < 0.05$) pH, °Brix, protein, crude fiber, Ca, P, K and Mg. The results demonstrated that whichever the variety, the physico-chemical quality of frozen sapota fruit’s pulp is stable up to 90 days of storage, being “Criollo” the highest-potentiality variety for industrial use, due to the high content of soluble solids.