

Abstract:

To understand properly the production process and characteristics that allow a plant to be sustainably exploited it is necessary to obtain information derived from several disciplines. A long-term project on *Stenocereus griseus*, a cactus species traditionally used and commercialized in SW Mexico, has been initiated, using a multidisciplinary approach, following the product from the mother plant to commercialization in order to assess true sustainability in the exploitation of this resource. Individual plants were identified and labeled, to track their development through time and correlate annual production with environmental factors. Fruit development has been studied to establish a harvest index. Studies on firmness, respiration, physiological weight loss, extractable juice, °Brix, pH, titratable acidity and vitamin C, as well as reducing sugars and a proximal analysis were made to determine quality, postharvest handling and refrigerated storage potential. A commercial evaluation was also made to predict the economic value of this potential crop. Results indicated that the more young branches the plant has the more fruits it could produce. It is suggested that experiments in pruning should be undertaken as a next phase. Characterization of fruits was made to select the best varieties for establishment. °Brix showed to be the best parameter to determine time of harvest. The fruit loses its spines 24 hours after harvest. Vitamin C decreases from 14.5 mg to 2.5 mg during the storage period. Results of proximal analysis are shown for the three most common types of fruits found in the Region of La Mixteca, Oaxaca. Commercial analysis shows that fresh fruits are suitable for exploitation.