14. Impact of storage conditions on the physico-chemical properties, acceptability and shelf-life of cactus pear fruit (*Opuntia ficus-indica*).

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Abstract

Cactus pear (Opuntia ficus-indica) fruit has gained attention over the past few years partly due to its nutritional value, health benefits and organoleptic characteristics among others. The fruit is rich in nutrients such as minerals (K, Ca, P, Mg, S), protein, dietary fiber, and phytochemicals such as β-carotene and betalains, vitamin C and phenols. However, the effects of postharvest management techniques on its nutritional profile, acceptability and shelf-life/storage-life are not well known. This study aims at characterization of physico-chemical properties, nutritional profile, organoleptic characteristics and shelf/storage life of prickly pear fruit under modified atmosphere packaging (MAP), cold storage and room temperature conditions. Mature fruits will be harvested from prickly pear plant from the arid and semi-arid regions of Meru County and the surrounding. Proximate composition will be determined using AOAC methods and physical, chemical and sensory parameters using standard procedures. Data will be subjected to analysis of variance using the SPSS software (version 24) at 95% confidence interval and a P-value of less than 0.05 will be considered significant.

Keywords: *Opuntia ficus-indica, cactus, storage conditions, modified atmosphere packaging, cold storage and physico-chemical properties.*