Title Influence of low temperature on shelf life and quality of sapota (*Manilkara Achras* (Mill.) Forsberg) fruits packed in polybags

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Citation Abstracts of 7th International Postharvest Symposium 2012 (IPS2012). 25-29 June, 2012. Putra World Trade Centre (PWTC), Kuala Lumpur, Malaysia. 238 pages.

Keywords Sapota; LDFE bags; low temperature; ventilation; shelf life; quality; ripening

Abstract

Majority of the post harvest losses in sapota occur due to rapid ripening and softening of the fruit resulting in handling problems and shorter shelf life. Being a climacteric fruit, it ripens within 4 to 7 days after harvest. An experiment was set up to study the effect of packaging and ventilation on the post harvest shelf life and quality of sapota fruits stored at low temperature at HCRI, Venkataramannagudem. Mature fruits ofcv. Kalipatti were stored at 12±1°C (80-85% humidity) in LDPE bags (poly bags) with different gauges (100, 200, 300 gauge) and ventilations (0.8, 1.2, and 1.6 per cent). The study revealed that the fruits stored in polybags showed significant changes with respect to physical and chemical characters. Fruits stored in 200 gauge polybags with 1.2% ventilation recorded maximum shelflife of 31. 83 days and higher quality parameters like fruit firmness (2.71 $kg.cm^{-2}$), organoleptic score (9.93), TSS (20.11 °Brix), ascorbic acid (22.34 mg/100 g), titrable acidity (0.23%), reducing sugars (8.21%) and total sugars (12.31%). PLW, rate of ripening, fruit decay was maximum in control (1.05, 40.09, 55.0 per cent). The longer shelflife and higher quality of fruits in polybags was due to reduced permeability of the polybags for gases and the resultant retarded respiration rate, delayed onset of ripening and lesser activity of enzymes that degrade cell wall pectin. Further, fruits from 100 guage polybags ripened too early and fruits in 300 guage polybags ripened unevenly.