

## Ripening behaviour of sapota

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### ABSTRACT

The matured fruits of PKM 1, 2 and 3 were treated with natural ripening media like coir waste, paddy straw, saw dust, bamboo basket, wooden crates and gunny bags. Among the natural ripening media paddy straw was observed to enhance ripening. It had low fruit weight (84.91g), volume (83.46 a), fruit firmness when ripened and higher physiological loss in weight.

**Key words :** Sapota, Ripening behaviour.

Sapota (*Manilkara achras* (Mill) Fosberg) is an evergreen fruit tree known for producing fruits of delicate flavour, melting pulp with sweet taste (Chadha 1992). It has emerged as an important fruit crop cultivated widely in Karnataka, Gujarat, Andhra Pradesh, West Bengal, Maharashtra and Tamil Nadu with an area of 30,000ha with a production of 4.23 lakh tonnes. Being climacteric in nature, sapota fruits need ripening treatments after full maturity. During ripening fruit passes through a series of changes in colour, texture and flavour indicating that compositional changes are taking place. The ripe fruits have pleasant aroma and are excellent in sweetness without any astringency due to decrease in polyphenols with concurrent increase in sugars, production of ethylene, rate of respiration and catalase activity (Rao and Chundawak, 1988).

'Ripening' basically refers to those changes in the physical, physiological, biochemical and sensory traits of the harvested fruits which render them acceptable to the consumers for consumption (Mattoo *et al.*, 1975).

Uniformity in ripening is a problem in sapota, which needs attention. At present the information on the ripening behaviour of commercial varieties like PKM 1, PKM 2 and PKM 3 is very scanty. The low cost ripening media is essential to get uniformity in ripening and also to have a better market price. Hence, the study was taken up to study the ripening behaviour of the promising types of sapota using different low cost media.

### MATERIALS AND METHODS

The fully matured fruits of PKM 1, PKM 2 and PKM 3 were selected for the study. To enhance the ripening different low cost ripening media *viz.*,

The present investigation was undertaken with 7 treatments :

T<sub>1</sub> - Fruits spread on coir waste (10cm thickness), T<sub>2</sub> - Fruits sandwiched in chopped paddy straw (10cm thickness), T<sub>3</sub> - Fruits spreading in saw dust (10cm thickness), T<sub>4</sub> - Fruits packed in bamboo basket (2kg capacity), T<sub>5</sub> - Fruits packed in wooden crates (2kg capacity), T<sub>6</sub> - Fruits kept in gunny bags without lining (2kg capacity), T<sub>7</sub> - Fruits spread on ground in single layer (control) were tried.

Fully matured fruits with uniform size of 2kg were selected. The scurf present on the fruit was removed by washing them in water and then they were allowed for shade - drying. They were placed in the different low cost ripening media mentioned above.

The observations were recorded on physical characters (before and after ripening) *viz.*, fruit weight, fruit length, girth, volume and firmness, physiological loss in weight, ripening percentage, days taken for ripening, spoilage percentage.

### RESULTS AND DISCUSSION

The fruits can be consumed only after complete ripening and the uniformity in ripening is a problem. This study was undertaken to induce uniform and early ripening in sapota. The variety PKM 3 recorded the highest fruit weight followed by PKM 2 and PKM 1. The variation in fruit weight among the varieties could be attributed to genotypic and phenotypic variability (Shanmugavelu and Srinivasan, 1973). The mean fruit weight recorded at 3<sup>rd</sup> and 4<sup>th</sup> day during ripening was significantly influenced by varieties, treatments and interactions. The fruit weight decreased gradually in all the three varieties as the day