

Effect of different packaging materials on shelf life of sapota fruit

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SUMMARY : Sapota is good source of digestible sugar, calcium and Vit.C. Sapota is the highly perishable fruit. It is consumed either table fresh or in terms of processed products. The freshly harvested fruits were packed in different packaging materials and kept at room temperature for further study. The roundness value 0.86, sphericity 87.58 per cent and specific gravity as 1.10 where as the chemical properties includes 18.13 °Brix TSS, 0.27 per cent acidity, 8.14 per cent total sugar and 25.15 per cent ascorbic acid in the fresh sapota fruit. The shelf life of sapota with different packaging materials was tested in terms of PLW, TSS, acidity, total sugar and ascorbic acid placed at room temperature. The sapota fruit stored in polyethylene bag with 1.2 per cent ventilation prolonged the shelf life of sapota up to 9th day of storage.

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The origin of sapota is the tropical region of Central and South America. Sapota is good source of digestible sugar ranges from 12 to 18 per cent. The 100 gram of sapota has compositions like 73.7g moisture, 21.4g carbohydrate, 0.7g protein, 1.1g fat, 28mg calcium, 0.03mg carotene, 0.02mg thiamine, 0.03mg riboflavin, 0.2mg nicene and 6mg Vit.C. (Anonymous, 2006). A Kalipatti variety of the sapota having oval shape with sweet and mildly fragment was selected for the present study due to its good quality and overall acceptability. Sapota is the highly perishable fruit. It is consumed either table fresh or by processing into products like sapota leather, wine, dried sapota, etc. (Aradhya *et al.*, 2006). As the sapota has a very short storage life, it needs to be preserved until reaches to the market and food processing plant for further processing. The shelf life of sapota depends on different factors like packaging material and atmospheric temperature. The extension in storage life is possible by checking respiration and microbial activity in the sapota fruit. To fulfil this requirement a study was

conducted to see the effect of packaging material on shelf life of sapota fruit.

EXPERIMENTAL METHODS

The sapota fruit variety Kalipatti was used for this study. The freshly harvested fruits were packed in different packaging materials and kept at room temperature for further study. The physical and chemical properties of fresh sapota were determined while performing the present experiment.

Physical properties of sapota:

The physical properties of sapota were determined by using standard formulae (Mohesenin, 1986)

$$\text{Roundness} = \frac{A_p}{A_c}$$

were,

A_p = Largest projected area of an object in natural rest position

A_c = Area of smallest circumscribing circle

$$\text{Sphericity} = \frac{D_i}{D_c}$$

were,

D_i = Diameter of largest inscribing circle

D_c = Diameter of smallest circumscribing circle

The specific gravity:

$$\text{Specific gravity} = \frac{\text{Weight in air} \times \text{specific gravity of water}}{\text{Weight of displaced water}} \times 100$$

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