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Preparation of low fat custard apple ice-cream using preservative

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Ice-cream is a frozen product obtained from cow, buffalo milk or a combination their off from cream and or other milk products, with or without the addition of cane sugar, eggs, fruits, fruit juices, preserved fruits, nuts chocolate edible flavours and permitted food colours. Custard apple (*Annona squamosa* L.) commonly known as sitaphal is one of the major fruits of dry land forming and abundantly available in range lands where rainfall is minimum. It's utilization in some value added dairy product is one of the alternative.

The ice cream was prepared from different proportion of ascorbic acid with fruit pulp was evaluated for its quality parameters and physico chemical analysis. Custard apple ice-cream was made by maintaining three levels of ascorbic acid viz. 0.2 (T₁), 0.3 (T₂) and 0.4 (T₃) per cent and constant level of sugar (15%), sodium alginate (0.15) and fat per cent of 9% were selected and compared ice-cream without ascorbic acid (T₀). The physico chemical characteristics of the best accepted product showed that the titratable acidity 0.28 per cent, pH was 0.67 and over run 32.85 per cent. The nutrient composition showed that ice cream contains fat 8.998, protein 3.65, total sugar 22.66 and total solids 35.74 per cent respectively.

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Studies on modified atmospheric packaging and irradiation on shelf life and quality of sapota (*Manilkara achras* (Mill) Fosberg) cv. Kalipatti

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A set of two experiments on the effect polypropylene packaging (a modified atmospheric packaging) and combination of irradiation on storability at low temperature, shelf life and quality of sapota fruits cv. Kalipatti was conducted at Fruit Research Station, Sangareddy. In the first experiment, sapota fruit cv. Kalipatti was packed in polypropylene bags of 100 and 150 gauge with and without perforation and stored at 15°C for 15 and 30 days and transferred to room temperature. Various physico-chemical parameters like PLW (%), spoilage, firmness, TSS (°B), sugar (%), acidity (%) and TSS:acid ratio were estimated at an interval of 3 days after transfer to room temperature. Fruits packed in polypropylene bags of 100 gauge with 0.1 % perforation recorded significantly lower PLW (%), higher firmness, lowest spoilage (%) irrespective of days of storage 15°C. The fruits stored at 15°C for 30 days were ripened on initial days of transfer to room temperature and recorded significantly higher PLW, lower firmness on 3rd days (eating ripe stage) when compare to fruits stored at 15°C for 15 days. The fruits packed in 100 gauge with 0.1% perforation and stored for 15°C for 15 days have maintained higher TSS, sugar (both total and reducing sugars) and lower TSS/acid ratio even up to 6th day after transfer to room temperature. The maximum total storability of 21 days (15 days at 15°C and 6 days at room temperature) was recorded in fruits packed in 100 gauge polypropylene with 0.1% perforation.

The best packaging material and storage days in experiment no 1 has to be irradiated at various dosages in 2nd experiment. However, in the first experiment as 15 days storage has proved better than 30 days storage at 15°C irrespective of packing material. Further to increase the total storability, the fruit after packaging in polypropylene bags of 100 gauge with 0.1% perforation of experiment-1 (best packing material) was irradiation at different doses of 0.2,0.4,0.6,0.8 kGy and stored at 15°C for 20 days in 2nd experiment. The fruit irradiated with 0.2 kGy has recorded significant lower PLW, higher firmness and lower sugar when compare to higher doses of irradiation and control. Fruits irradiated with higher doses of above 0.4 kGy recorded higher PLW, lower firmness and minimum shelf life after transfer to room temperature. Further, fruits irradiated at irradiation doses of above 0.4 kGy have shown irradiation injury and recorded highest spoilage than the fruits irradiated at lower dose of 0.2 kGy. The fruits packed in polypropylene 100 gauge with 0.1% perforation and irradiated at 0.2 kGy recorded significantly higher shelf life of 6 days after transfer to room temperature; increase the total storability to 26 days (20 days at low temperature and 6 days after room temperature).

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