

# **TO STUDY THE SENSORY QUALITY OF MILK PUDDING BLENDED WITH SAPOTA PULP (*ACHRAS SAPOTA L.*)**

**Abstract** Milk pudding was prepared from buffalo milk (standardized with 6 per cent fat and 9 per cent SNF) with constant level of sugar (8 per cent by volume of milk) and different levels of (10, 15, 20 and 25 per cent of sapota pulp ). It was observed that the overall acceptability score for treatment T1, T2, T3, T4 and T5 were 7.20, 7.55, 7.92 and 7.43 respectively. As the level of sapota pulp in milk pudding increases the overall acceptability score also increases upto treatment T3, thereafter it was decreased. The treatment (T3) comprises sapota pulp @ 15 per cent secured maximum score with 7.92 and lowest score was found to be 7.20 in treatment T0.

**Key words:**Sensory evaluation, Milk pudding, Sapota pulp, Flavour, Color and appearance, Body and texture and Overall acceptability

**Introduction:** Milk is a food of outstanding interest, not least because it was designed to be a complete food for young growing animals. A balanced diet is essential for proper health and growth. Milk pudding is one of the milk products which have good potential in the world market. Pudding is quite popular in western countries as a dessert and party item. In India, it is considered as a luxury and party product at present. It is produced abroad more frequently at industrial as well as at home level. However, slowly the demand of this product is also increasing in Indian market.

Sapota (*Achras sapota L.*) is considered as energy giving fruit and having high nutritive value. It contains higher percentage of vitamin C. It is rich in carbohydrates and provide good amount of proteins and minerals like calcium, phosphorous and iron. Sapota pulp is used for making sweets and halawas. Sapota is rich source of antioxidants, which helps in lowering incidence of degenerative diseases. The present investigation was undertaken to standardize the technique of manufacturing milk pudding by using sapota pulp. Hence, considering the benefits of fruits in the human diet with respect to its Nutritional, medicinal values and technological properties, it was decided to undertake Research work on, “**To Study the Sensory Quality of Milk Pudding Blended with Sapota Pulp (*Achras Sapota L.*)**”.

**Materials and Method**

### **Treatment details**

Sapota pulp was added at different levels viz., 10, 15, 20 and 25 percent on the basis of parts of milk in T<sub>1</sub>, T<sub>2</sub>, T<sub>3</sub> and T<sub>4</sub>.

### **Treatment details:**

Preparation of milk pudding blended with sapota pulp following treatment combinations was taken for study:

### **Level of Sapota pulp**

T<sub>1</sub> – 10 per cent of condensed milk

T<sub>2</sub> – 15 per cent of condensed milk

T<sub>3</sub> – 20 per cent of condensed milk

T<sub>4</sub> – 25 per cent of condensed milk

In above all preparation, sugar will be added @ 8 per cent of original volume of milk and gelatin 2 per cent

### **Preparation of sapota milk pudding**

#### **Condensed milk**

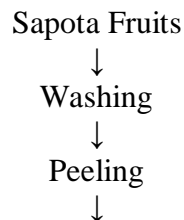
For preparation of condensed milk Fresh-pooled buffalo milk, preferably from the morning milking was procured from Dairy unit of College of Agriculture, Dapoli. This milk was filtered through 2 folds muslin cloth to remove any visible dirt particles, after that milk was continuously boil in ratio of 2.5:1. In this grounded sugar @ 8 % of original milk was added and contents were mixed thoroughly so that sugar will get dissolved completely. This condensed milk was stored in refrigerator and was used as base material for preparation of sapota milk pudding.

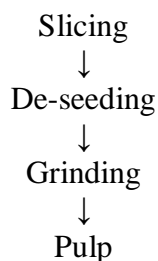
#### **Pudding ingredients**

Sugar and Stabilizer (Gelatine) were purchased from the local market.

#### **Sapota pulp**

Sapota pulp was prepared from ripened sapota fruits procured from local market as per the procedure given by Jadhav. P.V. (2002):[2]





### 3.2 Preparation of Pudding

At the time of preparation of pudding for every treatment 500 gm of condensed milk prepared as per procedure. 500 gm of condensed milk was heated slowly at simmering temperature. When temperature reaches upto 45<sup>0</sup>C, 10 gm of gelatine was added in this mass. This mixture was mixed thoroughly and after that sapota pulp was added as per treatment i.e. 50 gm for T<sub>1</sub>, 75 gm for T<sub>2</sub>, 100 gm for T<sub>3</sub> and 125 gm for T<sub>4</sub>. After that these contents again mixed well filled in a cups of 30 gm capacity and kept in refrigerator for setting for 3-5 hr. Quantity of each ingredient required for preparation of sapota milk pudding is tabulated hereunder:

Table 1 : Quantity of ingredients used

| Treatments     | Quantity of ingredients used (g) |          |             |
|----------------|----------------------------------|----------|-------------|
|                | condensed milk                   | Gelatine | Sapota pulp |
| T <sub>1</sub> | 500                              | 10       | 50          |
| T <sub>2</sub> | 500                              | 10       | 75          |
| T <sub>3</sub> | 500                              | 10       | 100         |
| T <sub>4</sub> | 500                              | 10       | 125         |

### Sensory evaluation of the product

Sensory evaluation of *kalakand* was carried out by the panel of judges selected from the staff of Department Of Animal Husbandry and Dairy, College of Agriculture, Parbhani. It will be evaluated for colour and appearance, flavour, body and texture, and overall acceptability. Score card will provide to all judges, comparing “9-point hedonic scale” developed by Quarter Master Food and Container Institute, U.S.A. (Gupta, 1976).[1]

### Statistical Analysis:

The data obtained will be analyzed statistically by using Completely Randomized Design (CRD) as per Panse and Sukhatme (1985).[3]

## RESULTS AND DISCUSSION

**Table no. 2** Effect of various level of kinnow juice on sensory properties of *kalakand*.

| Treatments  | Flavour       | Colour and appearance | Body and texture | Overall acceptability |
|-------------|---------------|-----------------------|------------------|-----------------------|
| T1          | 7.29          | 7.21                  | 7.11             | 7.20                  |
| T2          | 7.72          | 7.52                  | 7.42             | 7.55                  |
| T3          | 8.10          | 7.81                  | 7.86             | 7.92                  |
| T4          | 7.56          | 7.40                  | 7.32             | 7.43                  |
| <b>CD@5</b> | <b>0.2023</b> | <b>0.2142</b>         | <b>0.1975</b>    | <b>0.0986</b>         |

### 1. Flavour

The average flavour score was recorded at 10, 15, 20 and 25 per cent level was 7.29, 7.72, 8.10 and 7.56 respectively. The highest score recorded at T<sub>3</sub> i.e. (20 per cent level of sapota) was 8.10 and lowest score recorded at T<sub>1</sub> (10 per cent level of sapota) was 7.29. It was observed that addition of sapota pulp upto level of 20% provided very pleasant flavour to product. It was complimentary and supplementary to the original taste & blend of pudding; However at 25% level of incorporation it exhorted over masking effect on original taste similarly typical granular texture of sapota pulp was factor of disadvantage as it was giving different taste to tongue during eating.

### 2. Colour and appearance

Colour of any product is ideal and basic sensory cognition that appeals to the consumer for its acceptability or rejection. From the table 2 it was observed that treatment differences are statistically significant at 1 per cent level of significance, which indicates that there is significant difference in colour and general appearance of milk pudding due to addition of sapota pulp. Treatment T<sub>1</sub>, T<sub>2</sub> and T<sub>3</sub> were statistically different from each other whereas treatment T<sub>2</sub> & T<sub>4</sub> were found to be statistically at par with each other.

The result indicates that there was gradual increased in score from T<sub>1</sub> to T<sub>3</sub>, whereas for T<sub>4</sub> there was reduction in score for colour and appearance. It may be due the fact that addition of sapota pulp upto 20% might have resulted in providing glossy texture & appearance to product

but when proportion goes upto 25% typical ashy dark brown colour developed which resulted in decreased the score

### **Body and texture**

Body and texture of kinnow juice *kalakand* under different treatment combination was determined. The variation in the score for body and texture due to different treatments was found to be significant. The observed value for body and texture for pudding at 10, 15, 20 and 25 per cent level of sapota pulp was 7.11, 7.42, 7.86 and 7.32 respectively.

The pudding with lowest score at 10 per cent level of sapota pulp had comparatively loose body and lacked characteristic gel structure (7.11). Increase in the level of sapota pulp to 20 per cent, improved the body and texture of pudding (7.86). Further, increase in the level of sapota pulp to 25 per cent, however, produced slightly inferior quality pudding as compared to the product with 20 per cent sapota pulp (7.86). It was observed to possess slightly rough and compact body and reduced jelling effect of the product.

### **4. Overall acceptability**

From the average figure of overall acceptability in Table 2, it is seen that highest overall acceptability score was recorded for milk pudding with 20 per cent level of sapota pulp (7.92) and lowest score was noticed with 10 per cent level sapota pulp (7.20). The sensory score increased upto T<sub>3</sub> i.e. 20 per cent sapota pulp and decreased simultaneously for T<sub>4</sub> i.e. 25 per cent sapota pulp. The values were recorded 7.20, 7.55, 7.92 and 7.43 at 10, 15, 20 and 25 per cent level of sapota pulp respectively.

The statistical analysis of the data presented in Table 2 revealed that the results are significant at 1 per cent level of significance indicating that there is a significant difference in overall acceptability of the product due to addition of sapota pulp.

On the basis of results obtained, we can affirmatively state that amongst levels of sapota pulp used, 20 per cent (T<sub>3</sub>) was found most acceptable by the judges.

### **CONCLUSION**

From the results of present investigation, it may be concluded that the sapota pulp could be successfully utilized for preparation of milk pudding using gelatin as a jelling agent. Addition of sapota pulp in pudding improved sensory quality and acceptability of the product. The most acceptable quality pudding can be prepared by using 20 per cent sapota pulp which was found equally good.

## References

1. Gupta,S.K, (1976) Sensory evaluation in food industry. Indian Dairyman, 28 (8): 1976, 293-295. [1]
2. Jadhav, P. V. (2002). Preparation of kulfi with incorporation of mango and sapota pulp. Thesis submitted to Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli. [2]
3. Panse, V.J. and Sukhatme P.V. (1967). Statistical Methods for Agric. Workers, ICAR, New Delhi [3]

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