

Studies on Preperation of Pedha Blended With Elephant Foot Yam

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Abstract: An acceptable pedha was prepared using khoa from standardized buffalo milk added with 15 parts of red pumpkin pulp into 85 part khoa and sugar was mixed @ 30 % by weight of khoa. The moisture range between 14.50 to 29.00, fat-22.00 to 17.00, protein-14.80 to 12.10, ash-2.32 to 2.90 and total solid-85.33 to 71.28 per cent, respectively. On an average the elephant foot yam pedha was found to be the overall acceptability score for T₁, T₂, T₃ and T₄ was 8.0, 8.37, 8.75 and 8.12, respectively. The cost of production of final product as 260, 258, 252 and 246 Rs / Kg for T₁, T₂, T₃ and T₄, respectively

Keyword: Pedha, Buffalo milk, Khoa, Elephant foot yam, Chemical and Sensory parameters .

I. Introduction

India is emerging as a highest milk production producing country in the world with an annual growth rate of 4.53 %. The current milk production of India is 139.10 MMT (NDDB Statistics, 2013). Out of the total milk production in India 46 % of milk is consumed as whole and 54 % is utilized for conversion into different dairy products. It is estimated that about 7 % of total milk in India is converted into concentrated milk product among which pedha is one of the product.

In India for all the classes of people the vegetables like bottle gourd, red pumpkin, elephant foot yam etc are popular and regular consumed vegetable. The elephant foot yam reduces the cholesterol percentage and blood pressure in the blood. It also used for treatment of cancer, weight loss, diarrhea and abdominal pain and gas. It is powerful antioxidant helping to slow the ageing process and prevent cardiovascular disease and stroke.

The market demand for instant food and dairy products all over the world. The consumer seeing new taste with nutritional value with minimum cost. Hence taking into consideration in market demand were made to prepare the pedha blended with elephant foot yam.

II. Materials And Methods

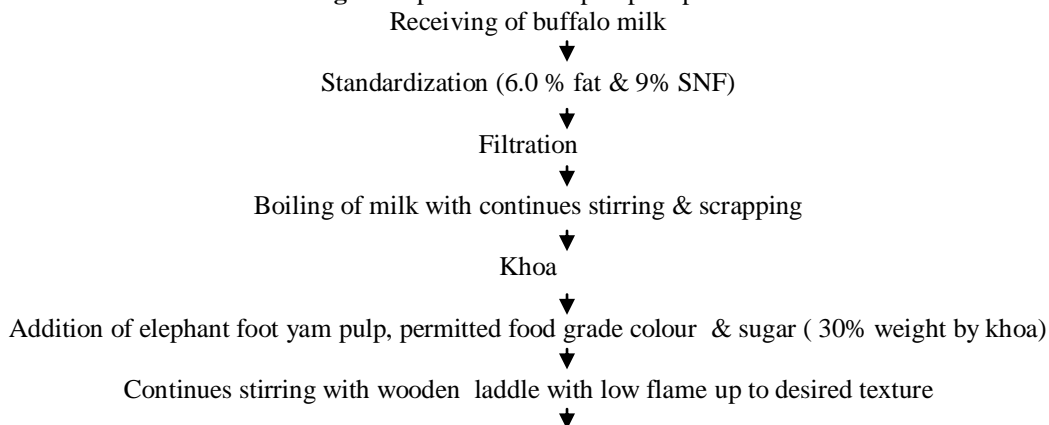
2.1 Preparation of elephant foot yam pulp

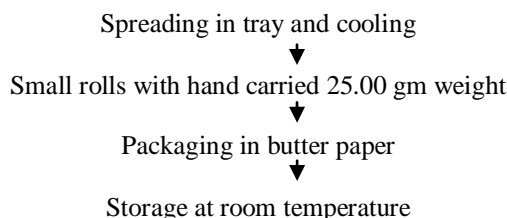
Elephant foot yam vegetable purchased from local market were washed with clean water. The skin was removed. Vegetable was cut in pieces/ slices with the help of knife and boil it pots. After smoothens of cutted pieces remove the water finally converted into homogenous pulp by using Deluzx pulp machine.

2.2 Preparation of pedha

The procedure given by Banerjee (1997) was followed. Buffalo milk was filtered through muslin cloth and standardized to 6 per cent fat. Milk was converted into khoa. The calculated amount of elephant foot yam pulp and sugar @ 30 per cent of khoa were added. Finally the mixture was heated on a low fire with stirring till the desired texture was obtained. The small rolls is rolled with hands carried 25.0 gm weight.

Fig 1: Preparation of red pumpkin pedha





2.3 Treatment details

T₁- 0 parts of elephant foot yam pulp + 100 parts of Khoa by weight

T₂- 10 parts of elephant foot yam pulp + 90 parts of Khoa by weight

T₃- 15 parts of elephant foot yam pulp +85 parts of Khoa by weight

T₄- 20 parts of elephant foot yam pulp + 80 parts of Khoa by weight

The different levels were tried and compare with control (T₁)

2.4 Chemical analysis

Moisture content of pedha was determined by standard procedure described in Anonymous (1959). Fat content of pedha by method described in ISI : 1224 (Part II) 1977. Protein by microkjeldhal method as described in ISI (1981) , Ash by ISI: (1981) and total solid by formula method.

2.5 Sensory evaluation

Sensory analysis carried out by panel of Judges in respect of color and appearance, Flavour body & texture. Sweetness and overall acceptability by 9 hedonic scale developed by Quarter master Food and Container Institute USA (Gupta 1976)

2.5 Statistical method

The data were analyzed statistically by using the completely randomized block design as per method described by Panse and Sukhatme (1967). The significance was evaluated on the basis of critical difference.

III. Results And Discussion

3.1 Chemical composition

The chemical quality of finished product is presented in Table 1. The moisture content in the finished product of different treatment combinations were in the range of 14.67 to 28.72 per cent. The increasing moisture content was noted in the finished product, due to addition of varied proportion of elephant foot yam pulp in khoa. The fat content of elephant foot yam pedha in all combination was different. Which decreased from 22.15 (T₁) to 17.77 (T₄). This might be due to decreasing levels of khoa. The results obtained in the finished products were similar to those reported by Ghule (2012). Similarly protein, carbohydrate and ash content in the finished product decreased.

3.2 Sensory evaluation

The sensory scores given for various samples are presented in Table 2. Pedha samples in which 15 per cent elephant foot yam pulp was blended with khoa scored the highest score (8.75). It was observed that increasing proportion of foot yam pulp in the blended in the khoa increased the score of colour and appearance of pedha. The score in respect of body and texture ranged between 8.0 to 9.0 for T₁ and T₃ treatment combinations. The treatment T₃ was significantly superior over the rest of treatments. In case of flavour, the score recorded was highest in T₃. In case of sweetness the mean score ranged from 8.0 to 9.0. It was lowest in T₁ and highest in T₃.

3.3 Cost of production

The cost of finished product (Table 3) was Rs.260 for control pedha whereas, for other treatment it decreased as increased the elephant foot yam pulp. The cost of pedha with 15 per cent elephant foot yam was Rs. 8.00 per kg over control pedha.

Table 1. Chemical composition of elephant foot yam pedha (per cent)

Treatments	Moisture	Fat	Protein	Total solid	Ash
T ₁	14.67	22.15	14.80	85.33	2.32
T ₂	21.69	19.96	13.46	78.31	2.64
T ₃	25.20	18.86	12.77	74.80	2.79
T ₄	28.72	17.77	12.10	71.28	2.90
SE ±	0.024	0.046	0.011	0.014	0.014
CD at 5%	0.066	0.144	0.034	0.045	0.045

Table 2. Overall acceptability score of elephant foot yam pedha

Treatments	Colour & appearance	Flavour	Body & texture	Sweetness	Overall acceptability
T ₁	8.0	8.0	8.0	8.0	8.0
T ₂	8.0	9.0	8.0	8.5	8.37
T ₃	9.0	8.0	9.0	9.0	8.75
T ₄	9.0	9.0	8.0	8.5	8.12
SE ±	0.156	0.124	0.127	0.131	0.141
CD at 5%	0.464	0.378	0.380	0.408	0.437

Table 3. Cost of production of elephant foot yam pedha (Rs / kg)

Sr. No	Particulars	Cost (Rs/ kg)	T ₁		T ₂		T ₃		T ₄	
			Qty / kg	Amt / kg	Qty / kg	Amt / kg	Qty / kg	Amt / kg	Qty / kg	Amt / kg
1	Khoa	200.00	1000	200.00	950	190.00	900	180.00	850	170.00
2	Elephant foot yam pulp	80.00	-	-	100	8.00	150	12.00	200	16.00
3	Sugar	33.00	300	10.00	300	10.00	300	10.00	300	10.00
4	Labour charges			25.0		25.0		25.0		25.0
5	Fuel charges			10.00		10.00		10.00		10.00
6	Miscellaneous charges			15.00		15.00		15.00		15.00
7	Total cost			260.00		258.00		252.00		246.00

IV. Conclusion

It may be concluded that the superior and nutritional quality red pumpkin pedha can be prepared by addition of 15 parts of red pumpkin pulp and 85 parts of khoa by weight basis with addition of 30 per cent sugar.

References

- [1]. Anonymous, Laboratory manual. Methods of analysis of moisture in milk and milk products. Milk Industry foundation, Washington,1959.
- [2]. Banerjee, A. K., Process for commercial production. In: Dairy India. 5th Edn. Published by P.R.Gupta,New Delhi,1997: 387.
- [3]. Ghule, B.K, Studies on Prepration of Ash Gourd Pedha, Mastoral diss MKV, Parbhani, 2012.
- [4]. Gupta,S.K, Sensory evaluation in food industry. Indian Dairyman, **28 (8)**: 1976, 293- 295.
- [5]. IS:1224,.Determination of fat by Gerber's method (part-II) Indian Standard Instituion, Manak Bhavan, New Delhi,1977.
- [6]. ISI .Hand book of food analysis. Dairy Product. XI Indian Standard Institution., Manak Bhavan, New Delhi,1981.
- [7]. Panse, V.G. and Sukhatma, P.V .Statistical methods for agricultural workers. ICAR Publication, New Delhi, 1967.