



Sensory and microbial quality of fruit *Burfi* sold in Parbhani

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ABSTRACT : The present investigation was conducted to analyze the sensory and microbial quality of plain *Burfi*, mango *Burfi*, fig *Burfi* and strawberry *Burfi* sold in Parbhani market. The sensory score for overall acceptability of *Burfi* of treatments T_0 , T_1 , T_2 and T_3 were 8.53, 8.38, 7.39 and 7.59, respectively. The variation in the flavour score was observed due to the addition of different levels of sugar and types of fruit pulps in the *Burfi*. The colour of *Burfi* showed significant change due to the lack of maintaining proper concentration of synthetic colour added and difference in the intensity of heating at final stage of making *Burfi*. It was observed that all the samples were acceptable and rated in between liked moderately to like extremely. All market samples of *Burfi* showed presence of micro-organisms as well as presence of yeast and mould but coliform was absent in these samples.

KEY WORDS : *Burfi*, Fruit pulp, Local market, Microbial quality, Parbhani, Sensory quality

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INTRODUCTION

Burfi has unique importance in market because it is liked by all classes of people. It has specially importance in various celebration like wedding, inaugural functions, birthday and to celebrate success in examinations. Therefore the demand for this product is constant throughout the year. *Burfi* is indisputable product having economic importance especially in rural part of India as it provides good means for converting surplus milk into value added products. Among the indigenous milk products *Burfi* is one of the most popular semi-solid, sweetened *Khoa* based sweet prepared from cow or buffalo milk or combination thereof. About 600,000 tonnes of *Burfi* produced annually in India (Kunju and Dodeja, 2004).

A number of ingredients such as nuts, chocolate, fruits, saffron, pulses, etc. may also be incorporated in *Burfi* during the manufacturing process. The nature of additives affects the flavour, body and texture and shelf-life of *Burfi*. All the varieties of *Burfi* have distinct characteristics and method of manufacture vary from region to region. The base for all these types of *Burfi* is however *Khoa* and cane sugar.

In Parbhani large quantities of *Burfi* is produced by the scattered unorganized sector, which leads to sub-standard *Burfi* in the market affecting the nutritional and health of the consumers. Now a day's every consumers are becoming more quality and health conscious. There are very few workers published reports on the quality of *Burfi* sold in Maharashtra. Therefore considering the demand of the consumers, the present study was undertaken with the object to assess the quality of fruit *Burfi* sold in Parbhani city.

MATERIAL AND METHODS

The present investigation was carried out in Parbhani city of Parbhani district and laboratory work was carried out at Dept. of Animal and Dairy Science, College of Agriculture, Vasanttrao Naik Marathwada Krishi Vidyapeeth, Parbhani (Maharashtra).

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Preliminary survey was conducted in Parbhani market, to know the different types of *Burfi* available in market and their availability throughout the study period. On the basis of survey four types of *Burfi* from eleven shops have been undertaken and considered for this study. *Burfi* samples of predetermined types are collected from selected shops and brought to the laboratory as and when required to complete analysis. The samples were stored at 5°C temperature in the laboratory till its use for analytical purpose. For analytical purpose *i.e.* sensory and microbial of *Burfi* samples in the laboratory standard materials are used. Chemicals and ingredients of Qualigens, Glaxo India Ltd., Hi-media were used for preparation of media and used for microbial examination of *Burfi*.

Treatment details: From the market four major *Burfi* types were collected and subjected to analysis.

T₁ - Plain *Burfi*

T₂ - Mango *Burfi*

T₃ - Fig *Burfi*

T₄ - Strawberry *Burfi*

For each type of *Burfi* eleven different shops will be taken as a replication. The sensory scoring was done using 9-point Hedonic scale. These *Burfi* samples were analyzed for Standard plate count, yeast and mould counts by ISI (IS: 5402) 1969, Coliform count by (Chalmers, 1955). Completely Randomize Design (CRD) was used for analysis of data (Panse and Sukhatme, 1985).

RESULTS AND DISCUSSION

The results obtained from the present investigation as well as relevant discussion have been summarized under following heads :

Sensory evaluation of fruit *Burfi* :

The sensory evaluation of fruit *Burfi* sold in parbhani city is presented in Table 1. The flavour scores obtained for market

Burfi samples are differed significantly ($P < 0.05$), sample T₁ (8.59) was significantly superior to other samples such as T₃ (7.36) and T₄ (8.00). While sample T₂ (8.22) was at par with sample T₁ (8.59). The variation in the flavour may be due to the use of different levels of ingredients particularly sugar and fruit pulp, method of manufacture and type of milk.

The scores obtained for colour and appearance attribute of market samples of *Burfi* are differed significantly ($P < 0.05$). On the basis of scores allotted sample T₁ (8.54) was significantly superior to T₂ (8.22), T₃ (7.22) and at par with sample T₄ (8.13), respectively. The variation in the colour of *Burfi* might be due to the lack of maintaining proper concentration of synthetic colour added and difference in the intensity of heating at final stage of making *Burfi*.

The average scores obtained for body and texture attribute of market samples of *Burfi* are differed significantly ($P < 0.05$). On the basis of score allotted sample T₄ (8.59) was significantly superior to T₃ (8.00), T₁ (7.22) and which was at par with sample T₂ (8.36) respectively. It appeared that the body and texture was not uniform within the samples.

The overall acceptability of market *Burfi* samples are differed significantly ($P < 0.05$). Sample T₁ (8.53) was superior and at par with sample T₂ (8.38), sample T₃ (7.39) and sample T₄ (7.97), respectively. It was observed that all the samples were acceptable and rated in between liked moderately to like extremely.

Microbial quality of fruit *Burfi* :

The microbial parameters are presented in Table 2. All market samples of *Burfi* showed presence of micro-organisms in it. Sample T₄ contains higher (8.14×10^3 cfu/g) count which is micro-biologically inferior while sample T₁ showed least (6.23×10^3 cfu/g) count which is micro-biologically better than other samples. The variability in the total count may be attributed to the varying conditions under which these products were

Table 1 : Sensory score for fruit *Burfi* sold in Parbhani city

Sr. No	Treatments	Flavour	Colour and appearance	Body and texture	Overall acceptability
1.	T ₁	8.59	8.54	7.22	8.53
2.	T ₂	8.22	8.22	8.36	8.38
3.	T ₃	7.36	7.22	8.00	7.39
4.	T ₄	8.00	8.13	8.59	7.97
	C.D. (P=0.05)	0.293	0.258	0.293	0.257

Table 2 : Microbial quality for fruit *Burfi* sold in Parbhani city

Sr. No	Treatments	SPC count (cfu $\times 10^3$ /g)	Yeast and mould count (cfu $\times 10^3$ /g)	Coliform count
1.	T ₁	6.23 ^d	2.26 ^d	Absent
2.	T ₂	7.45 ^b	3.10 ^b	Absent
3.	T ₃	8.14 ^a	2.76 ^a	Absent
	T ₄	7.23	3.51	Absent
	C.D. (P=0.05)	0.005	0.025	--

prepared and marketed. Also unclean utensils, improper handling and storage conditions contribute to it.

It is revealed from results that all market samples showed presence of yeast and mould. Sample T₄ showed maximum (3.51×10^3 cfu/g) count which is micro-biologically inferior. While sample T₁ showed least (2.26×10^3 cfu/g) count which is micro-biologically better than other samples.

Absence of coliform in any dairy product indicates the hygienic condition maintained during production and packaging. In the present study, coliforms are found to be absent in market samples of *Burfi*.

Conclusion :

It may be concluded that from the present study that the sensory attributes concerns Plain *Burfi* was highest score for all sensory attributes as compared to mango *Burfi*, fig *Burfi*, and strawberry *Burfi*. The microbial count was also varying

due to low quality of raw material, unhygienic conditions and post preparation contamination. It is therefore essential to enforce the quality standards and compel to maintain the hygienic condition during the process of preparation, storage and use of the food grade packaging material of *Burfi* sold in Parbhani market so as to safeguard the interest of consumer.

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