The Journal of Rural and Agricultural Research Vol. 14 No. 2, 24-26 (2014)
Received June 2014; Acceptance October 2014

Physico – chemical quality of burfi and milk cake

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Abstract

The samples of burfi and milk cake sold in Agra city were analyzed for their physic - chemical quality. Control sample prepared in the laboratory were also examined for same characters. The control samples were superior to market samples in physico–chemical quality.

Key words: Burfi, milk cake, physico–chemical

Introduction

Burfi and Milk cake are important indigenous milk products quite popular in Northern India. Burfi, the most popular milk based confection prepared from khoa adding sugar and it normally contain considerable amount of milk solids. Other ingredients like coconut, pista, fruit and maka are incorporated into the product to cater special taste. Milk cake also prepared from khoa and sugar mixed, but a part of mass is caramelized more intensively and then layered between the less caramelized proteins of the product. The product occupies its importance both from dietary and economics point of view. Besides being, highly nutritive, these have pleasing, sweet taste and relished in every home. Yet, little work have been Done regarding to chemical quality of these products so far , keeping in view the importance of the products, attempts were made to examine the physical and chemical quality of market as well as control samples of burfi and milk cake.

Materials and Methods

1. Sensory quality

This quality of products was examined by a panel of judges drawn from the dept. who were well versed to examine sensory quality. The product was examined for colour, flavor and body & texture of the product.

2. Chemical quality

To evaluate the chemical quality of marketed and control samples of burfi and milk cakes, attempts made were as follows.

Collection of samples from markets

The samples of burfi and milk cake were collected from the markets of Agra city. The city was divided into two zones viz. zone I and zone II. The samples were collected in the clean sterilized and laboratory and subjected to examination and analysis. In case of delay, the samples were placed in refrigeration in the laboratory till taken up for analysis.

Collection of milk samples

To prepare control samples of burfi and milk cake, the samples of milk were collected in sterilized containers. The samples were collected from cows and buffaloes maintained at the college dairy farm. The milk samples were collected just after milking and analyzed for fat and SNF content and processed for the preparation of the burfi and milk cake.

Preparation of control samples

The control samples of burfi and milk cake were prepared in the laboratory by using standardized milk following the method as described by "Indian Standard, 5550 : (1970).

Analysis of market and control samples

The samples of burfi and milk cake collected from different zones of Agra city and prepared in the laboratory were analyzed as follow.

The titratable acidity of burfi and milk cake samples were determined according to IS : 1165-1967. Total solids and fat content were determined using to IS: 4079-1967. The sucrose content in samples was determined according to "LANE EYNON Volumetric method as described in IS 4079-1967. Moisture content was determined by deducting the total solids from 100. The samples were analysed for their ash and calcium contents using the standard methods of analysis (AOAC, 1955) and phosphorus content of Burfi and milk cake samples was determined using the method as described by Fiske and Subba Row (1925).

Results and Discussion

The results on sensory quality (physical) of burfi and milk cake are presented in Table 1. The colour of burfi and milk cake from market varied from white to light brown with burnt particles. The control samples

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Table 1: Sensory quality of burfi and milk cake

Products	Sample No.	Market			Control		
		Colour	Flavour	Body & Texture	Colour	Flavour	Body & Texture
Burfi	1.	White	Pleasant	Semihard	White	Pleasant	Semi Hard
	2.	White	Do	Hard	Do	Do	Do
	3.	Ligth brown	Do	Do	Do	Do	Do
	4.	Do	Pleasant cooked	DO	DO	DO	DO
	5.	Burnt Particles	DO	DO	DO	Pleasant cooked	Do
Milk Cake	1.	White	Pleasant	Hard	White	Pleasant	Semi Hard
	2.	Light brown	Do	Do	Dark Brown	Do	Granular
	3.	Dark brownish	Pleasant cooked	Semi – Hard	Dark brownish	Do	Do
	4.	Do	Do	Do	Do	Do	Do
	5.	Do	DO	Do	Do	Pleasant cooked	Do

Table 2: Chemical composition of burfi and milk cake (%)

Constituents (%)	Burfi		Milk Cake	
	Market (Mean ±SEm)	Control (Mean ±SEm)	Market (Mean ±SEm)	Control (Mean ±SEm)
Acidity	0.50 ± 0.036	0.23 ± 0.020	0.47 ± 0.034	0.27 ± 0.020
Fat	18.10 ± 0.712	25.20 ± 0.716	17.10 ± 0.660	28.60 ± 0.980
Total Solids	78.74 ± 0.952	70.00 ± 1.010	74.65 ± 1.134	71.85 ± 0.979
Moisture	21.31 ± 0.946	30.00 ± 1.010	23.35 ± 1.134	28.15 ± 0.979
Sucrose	33.10 ± 0.583	25.24 ± 0.851	33.44 ± 0.695	20.79 ± 2.067
Ash	3.63 ± 0.098	2.90 ± 0.144	3.84 ± 0.107	2.70 ± 0.192
Calcium	0.51 ± 0.118	0.67 ± 0.020	0.415± 0.141	0.65 ± 0.062
Phosphorus	0.23 ± 0.044	0.14 ± 0.007	0.22 ± 0.048	0.17 ± 0.013

had white colour and dark brown for milk cake. Similarly the flavor of burfi and milk cake varied from pleasant to cook of burnt flavor and control samples had pleasant flavor. Body and texture of burfi and milk cake from market varied from semi hard to hard body and coarse texture. The control samples had semi hard body and granular texture.

The results on chemical quality of burfi and milk cake are presented in Table 2. The acidity of market burfi and milk cake samples (0.50± 0.036 and 0.47 ± 0.34% resp.) was higher than that of control samples (0.23 ± 0.020%). These results are lower than those reported by Ghatak and Bandyopadhyay (1989). Fat content was lower in market samples (18.10 ± 0.712 % in burfi and 17.10 ± 0.66% in mi cake) than in control samples (25.20 ± 0.176% in burfi and 28.60 ± 0.980% in milk cake). These results are higher than those of ISI (1970) and Godeker et al., (1974). Total solids content in burfi (78.74 ± 0.952%) and milk cake (74.56 ± 1.134%) from market was higher than that in burfi (70.00 ± 1.010%) and milk cake (71.85 ± 0.979%) prepared in laboratory as control samples. Consequently the moisture content was lower in market samples. These observations are lower than those reported by ISI (1970) for burfi but are almost in fair time with those of Godeker et al., (1974). Sucrose content in burfi and milk cake from market (33.10 ± 0.583 % in burfi and 33.44 ± 0.695% in milk cake) was higher than that in control samples (25.24 ± 0.851% in burfi and 20.79 ± 2.067% in milk cake). These findings are lower in both the products than that reported by ISI (1970) and Godeker et al., (1974). Ash content in market samples of burfi (3.63 ± 0.098%) and milk cake (3.84 ± 0.107%) was higher than that in control samples of burfi (2.90 ± 0.144%) and milk cake (2.70 ± 0.192%). These results on market samples are in fair agreement with Ghatak and Bandyopadhyay (1989), but are lower in control samples (0.51 ± 0.118%) in burfi and 0.415 ± 0.141% in 0.062% in milk cake) than that in control samples (0.67 ± 0.020% in burfi and 0.65 ± 0.062% in milk cake). These data are lower in both type of samples than that reported by De (1988). Phosphorus content 0.23 ± 0.044% in burfi and 0.22 ± 0.048% in milk cake collected from market was higher than that in control samples (0.14 ± 0.0017% and 0.17 ± 0.048%

Table 3: ANOVA for various contents of Burfi & milk Cake

S. No.	Source of Varitaion	d.f	Acidity MSS	Acidity F-Value	Fat MSS	Fat F-Value	Total solids MSS	Total solids F-Value	Moisture MSS	Moisture F-Value	Sucrose MSS	Sucrose F-Value	Ash MSS	Ash F-Value	Calcium MSS	Calcium F-Value	Phosphorus MSS	Phosphorus F-Value
Burfi																		
1	Zone	2	0.162	25.00 **	92.466	11.957*	132.930	22.295*	132.020	22.336*	103.325	34.128*	0.991	13.032*	0.070	1.18NS	0.022	2.559NS
2.	Error	12	0.006		7.733		5.962		5.910		3.019		0.076		0.059		0.008	
Milk cake																		
1	Zone	2	0.107	18.952*	228.866	78.023*	21.387	2.885*	21.387	2.885NS	271.159	24.568**	2.191	17.356**	0.184	2.020NS	0.016	1.248NS
2.	Error	12	0.005		2.933		7.414		7.414		11.037		0.126		0.091		0.013	

resp. in burfi and milk cake). Published literature on this aspect is scanty.

Statistical analysis of data in Table 3 revealed significant ($p \leq 0.05$) difference in all constituents of burfi and milk cake from market and control samples, expect calcium and phosphorus content. These constituents did not differed significantly in these milk products.

The physical (sensory) and chemical quality of control samples f burfi and milk cake was superior in all respect to the product collected from market. A good quality product can be prepared using good quality milk and other raw material.

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