

## Consumer Preference and Quality of Bakery Product - Bread

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### Abstract

The progress and development in science and technology of baking has resulted in increased awareness of intrinsic nature of ingredients used. Present day bakers have a no. of ingredients that were unknown to their predecessor 20 years ago. *Aims:* To evaluate the quality parameters of raw ingredients used in bread baking and identify the consumer preference in the quality of bread required. *Settings and Design:* 22 bakery outlets were covered by census method in 18 areas of Chennai city to cover 150 in house bread consumers. *Methods and Material:* Quality parameters of raw ingredients used in bread baking was experimentally done as per -ISI (1985) norms for bread flour. The consumer preference of bread was evaluated by questionnaire. *Statistical analysis used:* Percentage, Likert scale, one way anova and Kolmogorov-Smirnov test (K-s Test) were used. *Results:* The moisture percent of bread flour was significantly (11.9 percent) lesser compared to ISI (13 percent). Most favorable likert score (1.4) was given for appearance of bread and least score(0.5) for packing. *Conclusions:* The quality of ingredients play an important role in determining the quality of end product and consumer preference towards the product.

**Keywords:** Quality; Raw Ingredients; Bread; Parameters.

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### Introduction

Bakery products especially bread once considered as a therapeutic diet or tea-time snack has now become an essential daily component of an average Indian house -hold. The progress and development in science and technology of baking has resulted in increased awareness of intrinsic nature of ingredients use[1]. Present day bakers have a no. of ingredients that were unknown to their predecessor 20 years ago. The quality of ingredients play an important role in determining the quality of end product and consumer preference towards the product. There are few bakeries where quality control facilities are available. Bakery is a traditional activity and occupies an important place in food processing industry. The bakery manufacturers in India can be differentiated

into the three broad segments of bread, biscuits and cake[2]. About 1.3 million tonnes of the bakery products industry in India is in the organized sector out of 3millions tonnes, while the balance comprises of unorganized, small-scale local manufacturer. Though, there are sufficient automatic and semi-automatic bread as well as biscuit manufacturing units in India but there are still number of people prefer fresh bread and other products from the local bakery [3]. Bakery products are an item of mass consumption in view of its low price and with rapid growth and changing eating habits of people, bakery products have gained popularity among masses. The growth rate of bakery products has been tremendous in both urban and rural areas [4]. Bread is a hygienically manufactured and packed snack food product available at comparatively affordable prices.

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### Subjects and Methods

The aim of the study is to evaluate the quality parameters of raw ingredients used in bread baking and identify the consumer preference in the quality of bread. Study was approved by the research committee of SRM Engineering college (M.B.A). The

consumer preference of bread was evaluated by questionnaire method. 22 bakery outlets were covered by census method in 18 areas of Chennai city. To cover 150 in house bread consumers, the flour sample was tested for moisture per centage, water absorption percentage, protein, Gluten, total ash, colour and spores were evaluated as per BIS (1985) [2] norms for bread flour.

### Statistical Analysis

Percentage, Likert scale, one way anova and Kolmogorov-Smirnov test (K-s Test) were used.

### Results

Quality of a food is a combination of attributes that determine the degree of acceptability. The moisture per cent of bread flour (Table 1) was lesser by 1.09 per cent (13%) compared to norms of BIS (1969). Lesser the moisture content the water absorption power decreases and acceptable is the flour for bread. The major ingredient that play an important role in the quality of bread is the flour, yeast and fat [5].

The water absorption power (WAP) was 4 per cent (60%) lesser than the standard. High protein flour produce bread of large volume, uniform air cells and retain enough gas. The protein content was higher

than the standard. The gluten content is an important criterion in bread flour. Flour from different suppliers are mixed and standardized in the laboratory by bake test to arrive at the required protein and gluten level. The shelf life at a standard temperature is important in preservation [6]. Quality in Indian Scenario is rarely found in reality. There are few bakeries where quality control facilities are available - hence the present study was conducted.

### Standard Values

There was significant difference in purchase of bread by attributes as the calculated value was higher than the table value. Bakery products especially bread once considered as a therapeutic diet or tea-time snack has now become an essential daily component of an average Indian house-hold. Taste was highly important criteria in purchasing bread in 70.7% respondents. The quality of ingredients play an important role in determining the quality of end product and consumer preference towards the product [7]. Major consumers of bread are people from the lower middle class and economically weaker segments consuming more than 90 per cent of the bread industry's total production Table 2.

Appearance was an important criteria in selecting bread (Table 3) that scored highest of 1.4 in Likert scale. Freshness is equally important next to appearance. Taste was other important aspect which

Table 1: Evaluation of the quality factors in flour

S. No.	Quality	Bread Flour
1.	Moisture percentage maximum	11.91 (13)
2.	Water absorption percentage maximum	56 (60)
3.	Protein (Nx 5.7) Percentage, Dry basis, minimum	14.39 (11.0)
4.	Gluten (Dry basis), Percentage, (maximum)	11.67 (8.5)
5.	Total ash (dry basis) percentage, (maximum)	0.46 (0.5)
6.	Maltose	2 (2-3.5)
7.	Color	Creamy white
8.	pH	(5.5-6.0)
9.	Total bacterial count (gms.)	Nil (100,000)
10.	Bacterial ropes spore count (gms.)	Nil (100)
11.	Shelf life (Months)	3-4 (months)

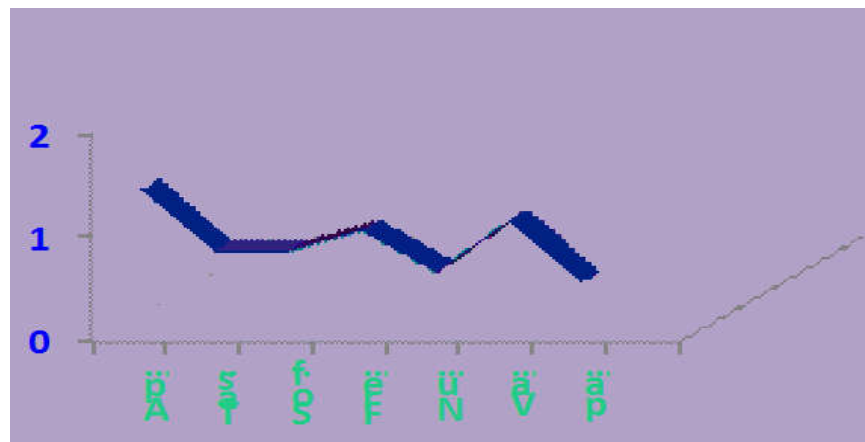
( ) standard values

Table 2: Attributes in purchase of bread - consumers

Factors	Highly satisfied (A)	Satisfied (B)	Somewhat satisfied (c)	Not satisfied (d)	Highly Not Satisfied (E)	Total	F - Ratio
Appearance	73 (41.3%)	73(46.0%)	2 (11.3%)	1 (0.7%)	1 (0.7%)	150	4.509 DF=4,30 (2.69)
Taste	87(70.7%)	45(26.6)	14(1.3%)	3(1.3%)	1(0.7%)	150	
Softness	51 (42.7%)	80 30.7%)	14 (3%)	3 (3.3%)	2 (16%)	150	
Freshness	67 (65.3%)	46 (16%)	13 (0.7%)	22 (0.7%)	2 (17.3%)	150	
Nurient content	38 (57%)	52 (30%)	33 (11%)	23 (1%)	4 (1%)	150	
Variety	64 (37%)	36 (22%)	48(37%)	1(3%)	1(1%)	150	
Packing	23 (18%)	65 (28%)	30 (16.7%)	27 9.3%)	5(18%)	150	

**Table 3:** Most favourable factor in purchase of bread

Weightage	2	1	0	-1	-2	Likert score=
Satisfaction level	1	2	3	4	5	Total weighted score/No of Samples
Attributes						
Appearance	73	73	2	1	1	1.4
Taste	87	45	14	3	1	0.8
Softness	51	80	14	3	2	0.8
Freshness	67	46	13	22	2	1.0
Nurient conent	38	52	33	23	4	0.6
Variety	64	36	48	1	1	1.1
packing	23	65	30	27	5	0.5

**Fig. 1:** Most favorable factor - purchase of bread

scored 0.8 in Likert score. when it comes to the customer purchasing appearance is of utmost importance Visual Identity at the retail point is extremely important to generate product off take (Figure 1). Most research in bread quality is based on customer analysis aided by the use of first quality ingredients. The per capita consumption of bakery products in india is about 5-10kgs/annum/personas compared to 50-100kgs in other countries [8].

## Discussion

Though bread is not a staple food in the country, its consumption has increased over the years. In India it is still a secondary staple food when compared to chapatti, puri or rice. The brand and quality alone is not just sufficient to boost sales, it is equally important that good packaging, is vital to promote and sell the products. The shelf life for staple food product like bread is extremely important because consumer also asks for the fresh bread always, so that it can last longer, Visual Identity at the retail point is extremely important to generate product off take and finally consumers taste is the most important factor [9].

More then ever the sales people at the counter are a dynamic power in helping the customers in selecting and help in personal selling.

## Key Messages

Bakery products especially bread once considered as a therapeutic diet or tea-time snack has now become an essential daily component of an average Indian house-hold. The quality of ingredients play an important role in determining the quality of end product and consumer preference towards the product.

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