

Estimation of nutritive value in Yeast Leaven products

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ABSTRACT

Around the world bread is the principal food and provides more nutrients than any other single food source. In 53 per cent of the countries bread supplies over 1/2 of the total caloric intake, in 87 per cent of the countries over 30 percent. The sample of flour confectionary products were tested in laboratory for nutrient contents and estimation of ingredient in production of bakery products were also analysed. In the present investigation the physical characteristics of wheat flour with respect to protein quality in terms of content, sedimentation value and pelshenke value have been investigated. The internal characteristics of bread presented in table, indicated that among the sample A, D, I. Sample A and D is statistically significant.

Keywords: Nutritive value, Yeast Leaven products, Bakery.

INTRODUCTION

Around the world bread is the principal food and provides more nutrients than any other single food source. In 53 per cent of the countries bread supplies over 1/2 of the total caloric intake, in 87 per cent of the countries over 30 per cent. In India it is popular due to various advantages such as ready to eat conveniences. Cost competitiveness, better nutritive quality enhanced shelf life. In recent years bakery products have become popular among different cross-sections of population due to increased demand for convenience products.

Among the bakery products particularly bread and flour confectionery are products the cheapest processed ready to eat product in the country. However, the per capita consumption of bread in India is only 0.8 kg as compared to 50 to 150 kg in advanced countries. Hence there is an unlimited scope for expansion of the bakery industry in the country. This would help in the effective utilization of the surplus wheat produced in the country.

The policy of the government in promoting the growth of bakery industry only in the small sector since 1978 appears detrimental to the full realization of the potential of the bakery industry. Bakery products offer advantages of nutrition and convenience at relatively. Low costs bakery products in India are now in common use and are

used by a common man so there is a vast scope for bakery industries.

As bakery products are gaining a new dimension in modern times owing their versatility in day to day life. Being highly demandable products, their popularity is increasing tremendously.

MATERIALS AND METHODS

The sample of flour confectionary products were tested in laboratory for nutrient contents and estimation of ingredient in production of bakery products were also analysed.

Estimation of ingredient role in bakery and confectionery products is very important aspect for obtaining quality products for production and marketing. Which ultimately improve the economy of bakery industry.

RESULTS AND DISCUSSION

Physical characteristics of wheat flour (Maida).

Result obtained from estimation and analysis of different ingredients used for production of yeast leavened bakery product i.e. Bread, wheat flour in the primary ingredients

In the present investigation the physical characteristics of wheat flour with respect to protein quality in terms of content, sedimentation value and pelshenke value have been investigated, the data pertaining to physical characteristics of wheat flour is given in table 1.

Table 1 Physical characteristics of Refined Wheat flour (Maida)

Sr. No.	Physical parameters	Unit
1.	Gluten content (Percent on dry-wt. basis)	10.98 gm
2.	Sedimentation value (ml)	30 ml
3.	Pelshenke value (min)	205 min.

The result indicated that the wheat flour has got 8.98 per cent (dry weight basis), 26 ml sedimentation value and 198 minutes pelshenke value. Krishnamurthy (1981) analysed 450 sample of wheat and reported the gluten content 6 to 9 per cent in atta and 7.4 to 9 per cent in Maida. Further Krishnamurthy *et al* (1979) showed the sedimentation value ranged from 21 to 27 ml for Maida. These results are in close agreement to that of present investigations.

Physical characteristics of refined wheat flour

In the present investigation the physical characteristics of refined wheat flour with respect to protein quality items of gluten content, sedimentation value C and pelshenke value have been investigated viz. gluten estimation to (per cent of protein contained), pelshenke value for knowing the time and the activity of yeast for disintegration of dough and sedimentation value indicate. Water absorption capacity of gluten. Hence the data pertaining to physical characteristics of wheat flour in given in table .

Pelshenke value

The wheat flour (3 gms) was mixed with 1.9 ml of yeast suspension to get a dough ball. The

dough ball was dropped into beaker containing water kept at 30 degree. The time taken to disintegrate the dough ball after dipping in water was noted as pelshenke value AOCC, (1976).

The result indicated that the wheat flour has got 10.98 gm per cent (Dry-Wt. basis), gluten control, 30 ml, sedimentation value and 205 minutes pelshenke value.

Yeast leavened Bakery product – Bread Estimation of Calorific value

To know the calorific value of yeast leavened bakery product i.e.

bread was prepared by use of different ingredients with different percentage. Table 2 (i to ix), showed that calorific value for sample A, D, I to ten samples including control A, B, C, D, E, F and H,I,J for bread prepared for present study. Calorific value of bread for sample A, D, I was estimated, it was found that the total energy per 100 gm in 379.89 K.cal for sample A, where calorific value of sample D was 382.12 K.cal and sample I was 389.09 K.cal per 100 gm which was recorded highest value among these sample. These estimated calorific values are in close agreement to that of NIN reported value.

Table 2: Calorific value of bread (Control)

Sr. No.	Nutrients	Nutrients of Product gm	Energy/calorie of product of K. Cal.	Total energy per 100 gm,
1.	Carbohydrate	76.81	307.24	380.23 K.Cal.
2.	Protein	11.70	46.80	
3.	Fat	2.91	26.19	

Table 2(i): Energy /Calorific value of (Sample A)

Sr. No.	Nutrients	Nutrients of Product gm	Energy/calorie of product of K. Cal.	Total energy per 100 gm,
1.	Carbohydrate	76.32	305.28	379.87 K.Cal.
2.	Protein	11.92	47.68	
3.	Fat	2.99	26.91	

Table 2 (ii): Calorific value of bread (sample B)

Sr. No.	Nutrients	Nutrients of Product gm	Energy/calorie of product of K. Cal.	Total energy per 100 gm,
1.	Carbohydrate	76.03	304.12	375.55 K.Cal.
2.	Protein	11.04	44.16	
3.	Fat	3.03	27.27	

Table 2 (iii): Calorific value of bread (Sample C)

Sr. No.	Nutrients	Nutrients of Product gm	Energy/calorie of product of K. Cal.	Total energy per 100 gm,
1.	Carbohydrate	75.83	303.32	379.07 K.Cal.
2.	Protein	12.03	48.12	
3.	Fat	3.07	27.63	

Table 2 (iv): Calorific value of bread (Sample D)

Sr. No.	Nutrients	Nutrients of Product gm	Energy/calorie of product of K. Cal.	Total energy per 100 gm.
1.	Carbohydrate	77.02	308.08	382.12 K.Cal.
2.	Protein	12.12	48.48	
3.	Fat	2.84	25.56	

Table 2 (v): Calorific value of bread (Sample E)

Sr. No.	Nutrients	Nutrients of Product gm	Energy/calorie of product of K. Cal.	Total energy per 100 gm,
1.	Carbohydrate	77.44	309.76	382.79 K.Cal.
2.	Protein	11.44	45.76	
3.	Fat	3.03	27.27	

Table 2 (VI): Calorific value of bread (Sample F)

Sr. No.	Nutrients	Nutrients of Product gm	Energy/calorie of product of K. Cal.	Total energy per 100 gm,
1.	Carbohydrate	78.72	314.8	393.8 K.Cal.
2.	Protein	12.82	51.28	
3.	Fat	3.08	27.72	

Table 2 (vii): Calorific value of bread (Sample H)

Sr. No.	Nutrients	Nutrients of Product gm	Energy/calorie of product of K. Cal.	Total energy per 100 gm,
1.	Carbohydrate	74.16	296.64	384.88 K.Cal.
2.	Protein	13.42	53.68	
3.	Fat	3.84	34.56	

Table 2 (viii): Calorific value of bread (Sample I)

Sr. No.	Nutrients	Nutrients of Product gm	Energy/calorie of product of K. Cal.	Total energy per 100 gm,
1.	Carbohydrate	71.51	286.04	389.09 K.Cal.
2.	Protein	15.03	60.12	
3.	Fat	4.77	42.93	

Table 2 (ix): Calorific value of bread (Sample J)

Sr. No.	Nutrients	Nutrients of Product gm	Energy/calorie of product of K. Cal.	Total energy per 100 gm,
1.	Carbohydrate	68.86	275.44	389.54 K.Cal.
2.	Protein	15.70	62.80	
3.	Fat	5.70	51.30	

Sensory evaluation of prepared samples of bread

The results are presented in table 3, table revealed that in the external characteristics of bread out of these sample viz. A, D, I mean score in volume the sample I is superior to D & A, whereas character crust cream A & I are at par with D in evenness of bake sample I is at par with D & A in the symmetry form sample D is superior over sample A & I. At overall acceptability sample of D & I is at par and superior over sample A.

The internal characteristics of bread presented in table , indicated that among the sample A, D, I. Sample A & D is statistically significant, the crust colour in sample A & D mean score high as compared to sample I and significantly superior where as evenness of bake sample A & D maintained superior position than sample I. The mean score in symmetry form sample D score high followed by sample D & I where as overall acceptability sample D & I, is significantly superior over sample A.

Table 3: Sensory evaluation of bread. Sample A, D, I for external characteristics.

Sample	Volume	Colour of crust/bloom	Evenness of bake	Symmetry of Form	Overall acceptability
Sample A	8	8.5	8.0	8.0	8.0
Sample D	8.5	8.0	8.0	8.5	8.5
Sample I	9.0	8.5	8.5	8.0	8.5
S.E.	0.286	0.14	0.16	0.05	0.14
C.D. 5%	0.86	0.43	0.49	0.15	0.43

Table 3.1: Sensory evaluation of bread. Sample A, D, I for internal characteristics.

Sample	Volume	Colour of crust/bloom	Evenness of bake	Symmetry of Form	Overall acceptability
Sample A	8.5	9.0	9.0	9.0	9.0
Sample D	8.5	8.0	8.0	8.5	8.0
Sample I	7.5	7.0	7.5	8.0	8.0
S.E.	0.27	0.47	0.45	0.23	0.14
C.D. 5%	0.83	1.49	1.38	0.70	0.43

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