

Short Communication

Effect of Dairy/Brand on Chemical Composition of Ice-Cream Marketed in Agra City

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The composition of Ice-cream varies depending on the market requirement and processing conditions. Although the quality of final product depends largely on processing and freezing parameters, the ingredients also play an important role. Ice cream as an industry in India and considered as luxury food item which is not made in very large quantity. The nutritious food must contain protein, fat, sugar, minerals such as calcium, phosphorus and other salt and vitamins, necessary for normal growth only few exceptions. These nutrients are found in sufficient quantity in milk and also in ice-cream. The development of processed food also requires a proper understanding of the major phenomena that dictate the interactions among different ingredients to

The sample of plane ice-cream without colour were collected from standard and ordinary plants of 6 different shops i.e. Kwaliti walls Cream-bell, Vadilal, Madhu, Naturella and Say Natural of Agra city. The sample of 100 gm size plane Ice-cream cups were collected. The cups was randomly selected and carried to the laboratory. The sample was stored in

achieve the desired characteristics of the final product^[3]. Ice-cream is a palatable nutrition healthful and relatively inexpensive food. The chemical quality of ice-cream in India is deplorably poor, therefore the study of fundamentals facts about all enormous losses from economic, health and nutrition aspects is very essential. In the light of above facts the present study entitled Effect of Dairy/Brand on Chemical Composition of plane Ice-Cream was conducted to record the composition of ice-cream sold by standard manufactured kwaliti walls, cream bell, Vadilal, Madhu, Naturella and Say Natural of different market brands of Agra City was carried out in the deptt. of A.H. & Dairying, R.B.S. College, Bichpuri, Agra.

the freezing chamber of the refrigerator till taken up for analysis. The chemical analysis of samples was done in terms of Acidity, moisture, Fat, Protein, Sucrose, Ash and Total solids by the standard methods^[1, 2]. Investigation was replicated forth times and the data thus obtained were subjected to statistical analysis and tested at 5% and 1% level of significance.

The Table 1 reveals that the acidity content of plane ice-cream samples collected from Kwality walls, cream bell, Vadilal, Madhu, naturella and say natural were found to be 0.24 ± 0.001 , 0.24 ± 0.001 , 0.25 ± 0.001 , 0.25 ± 0.002 , 0.24 ± 0.001 , and 0.23 ± 0.001 percent respectively. The sample of plane ice-cream from various factories meets the BIS standards in their acidity content. The statistical analysis revealed that the difference in acidity content among the market samples have insignificant effect. It is also evident from the table that the moisture content of plane ice-cream were found to be 63.99 ± 2.41 , 63.75 ± 2.36 , 63.71 ± 2.08 , 63.56 ± 2.27 , 63.93 ± 2.44 and 63.56 ± 2.29 percent in Kwality Walls, Creambell, Vadilal, Madhu, Naturella and Say Natural, respectively. The moisture percentage in plane Ice-cream have significantly effect on chemical composition.

The fat content of plane ice cream sample collected from Kwality Walls, cream bell, Vadilal, Madhu, Naturella and Say Natural were found to be 9.63 ± 0.39 , 9.24 ± 0.33 , 8.79 ± 0.35 , 8.27 ± 0.32 , 8.94 ± 0.38 and 8.75 ± 0.36 percent, respectively. The sample of plane ice-cream from various factories did not meets BIS requirements. The BIS had laid down 10.00 percent minimum fat content in plane ice-cream. The results of present study on fat content of plane ice-cream samples from various souras were quite low with that of above BIS. The difference in fat content of plane Ice-cream from different sources have significant effect at $P \leq 0.01$. The protein content in plane Ice-cream samples collected from Kwality walls, cream bell, Vadilal, Madhu, Naturella and Say Natural were found to

be 3.29 ± 0.07 , 3.16 ± 0.06 , 3.01 ± 0.06 , 2.82 ± 0.05 , 3.08 ± 0.06 and $3.00 \pm 0.06\%$, respectively. The protein content of plane Ice-cream collected from different sources differ significantly at $P \leq 0.01$. The protein content in present investigation was lower as compared with BIS requirements. The sucrose content of plane Ice-Cream samples collected from Kwality walls, cream bell, Vadilal, Madhu, Naturella and Say Natural were found to be 16.83 ± 0.78 , 17.26 ± 0.86 , 17.68 ± 0.91 , 18.46 ± 1.03 , 17.34 ± 0.88 and 17.87 ± 0.90 percent, respectively. The samples collected from different brands were also have significant effect at $P \leq 0.01$. All the above sample of plane ice-cream contain higher percentage of sucrose than BIS requirement. It is due to achieve more profit and increasing amount of products because sucrose have low cost than other ingredients. The ash content was also analysed and found to be 6.36 ± 0.16 , 6.59 ± 0.18 , 6.81 ± 0.23 , 6.89 ± 0.24 , 6.61 ± 0.24 and 6.82 ± 0.21 percent in Kwality walls, cream bell, Vadilal, Madhu, Naturella and Say Natural, respectively. The higher ash content in the product could be due to mixing of foreign materials and sucrose during manufactories of the product. The Ash content in all market brand samples have in significantly effect, each other. The total solids content of plane Ice-cream collected from Kwality walls, cream bell, Vadilal, Madhu, Naturella and Say Natural were found to be 36.01 ± 1.04 , 36.25 ± 1.35 , 36.29 ± 1.33 , 36.44 ± 1.44 , 35.97 ± 1.28 and 36.44 ± 1.36 percent, respectively. However, the difference in composition of total solid content was insignificant and meet with BIS requirements. The BIS specification have laid down minimum 36% total solid content in plane ice-cream. The results of present investigation

revealed that all the brands of Ice-cream did not meet BIS requirements for chemical composition. However, the sample Kwality Walls and cream bell was good as compared to Vadilal, Madhu,

Naturella and Say Natural. The good composition ice-cream can be produced by maintaining hygienic conditions during production, packaging, storage, transportation and sale of the product.

Table 1 Chemical Quality of Plane Ice – Cream

S. No.	Dairy/Brand	Acidity (%)	Moisture (%)	Fat (%)	Protein (%)	Sucrose (%)	Ash (%)	T.S. (%)
1	Kwality Walls	0.24±0.001	63.99±2.41	9.63±0.39	3.29±0.01	16.83±0.78	6.36±0.16	36.01±1.60
2	Cream Bell	0.24±0.001	63.75±2.36	9.24±0.28	3.16±0.06	17.26±0.96	6.59±0.18	36.25±1.83
3	Vadilal	0.25±0.001	63.71±2.08	8.79±0.35	3.01±0.04	17.68±1.01	6.81±0.23	36.29±1.88
4	Madhu	0.26±0.002	63.56±2.27	8.27±0.42	2.82±0.05	18.46±1.03	6.89±0.26	36.44±1.49
5	Naturella	0.24±0.001	63.93±2.44	8.94±0.46	3.08±0.08	17.34±0.86	6.61±0.19	35.97±1.31
6	Say Natural	0.23±0.001	63.56±2.29	8.75±0.36	3.00±0.06	17.87±1.02	6.82±0.21	36.44±1.53
7	BIS	0.25	64.00	10.00	3.50	15.00	–	36.00
	Overall average	0.24±0.001	63.75±2.32	8.94±0.33	3.06±0.06	17.87±0.92	6.76±0.23	36.25±1.58
	Test of significance	0.83 ^{NS}	0.936 ^{NS}	4.791 ⁺⁺	5.162 ⁺⁺	5.916 ⁺⁺	1.09 ^{NS}	0.986 ^{NS}

Note : NS= Non – significant

++ = Significant at P ≤ 0.01

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