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To study about quality of milk and milk products of different brands

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Abstract

Experiment carried out at a milk dairy and at home situated at Fazilka Road, Abohar-152116, Punjab. The study was carried out to find the quality of milk and milk products of different brands, which are Saras, Baba, Verka and Amul. In taste, verka has come up with best results in case of cheese whereas Saras in both milk and cheese is poorest for taste. In texture, verka and amul both has come up with best results in case of cheese whereas Saras in both milk and cheese is poorest for texture. In fat percentage, saras proved itself as a leading brand which comes up with best results whereas Baba is the poorest one. In S.N.F. then Saras and Baba proved themselves as leading brands which come up with best results whereas Verka is the poorest one.

Keywords: Texture, Taste, Solid Not Fat, Milk, Cheese.

Introduction

Milk is a white liquid produced by the mammary glands of mammals. Cow's milk has a pH ranging from 6.4 to 6.8, making it slightly acidic contains not less than 3.25 percent milk fat and 8.25 percent solids not fat. Addition of vitamins A and D is optional, but if added vitamin A must be present at a level of not less than 2000 international unit (i.u.) per quart, vitamin D is optional. Cheese is an untagged, acid-set non melting farmer cheese or curd cheese made by curdling heated milk with lemon juice, vinegar, or any other food acids. As paneer has a fairly high fat and protein content and also contain some minerals, especially calcium and phosphorous. Paneer contains constituents such as 53.4% moisture, 24.8% fats, and 17.4% Protein, 2.1% lactose and 2.1% ash. Amul is an Indian dairy cooperative, based at Anand in the state of Gujarat, India. Formed in 1946, it is a brand managed by a cooperative body, the Gujarat Co-operative Milk Marketing Federation Ltd. (GCMMF). Verka is the Punjab state verka milk producers federation limited popularly known as Milkfed Punjab came into existence in 1973. Saras milk is a product of Rajasthan cooperative dairy federation limited (RCDF). It deals in all kind of milk products and packaged food items. Baba Milk Private Limited is a Private incorporated on 13 July 2009. It is classified as Non-govt Company and is registered at Registrar of Companies, Chandigarh. (www.agropedia.com)^[1]

Materials and Methods

Experiment carried out at a milk dairy and at home situated at Fazilka Road, Abohar-152116, Punjab. The study was carried out to find the quality of milk and milk products of different brands which are Saras, Amul, Baba and Verka. Milk samples of these brands were taken and also cheese was prepared by adding stater culture. The result of Fat was observed by Milko-Tester, as the results displayed on the screen of Milko-Tester after 30-35 seconds. Also for the S.N.F., the Milko-Tester was started and result of S.N.F. was displayed on the screen of Milko-Tester after 30-35 seconds. 5 score sheets are formed in such a way so that each sample could be judged 5 times by 5 different persons on the score sheet according to taste, texture, colour and odour.

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Treatments**Milk brands**M₁ – SarasM₂ – BabaM₃ – VerkaM₄ – Amul**Cheese brands**C₁ – SarasC₂ – BabaC₃ – VerkaC₄ – Amul**Results and Discussions****Taste**

On the basis of score cards filled by judges, it was concluded that C3 (44/50) i.e. Verkagave best result and C1 (36/50) i.e. Saras was least preferred brand in terms of taste. Kourimska *et al.* (2014) [2] conducted an experiment for analyzing samples during a twelve-month period (June–May). Four parameters in raw milk, free fatty acids, urea content, somatic cell count and coliform bacteria count, showed no significant differences between the two types of production.

Texture

On the basis of score cards filled by judges, it was concluded that there is a tie up between C3 (42/50) i.e. Verka and C4 (42/50) i.e. Amul gave best result and C1 (37/50) i.e. Saras was least preferred brand in terms of texture. Dobrinias *et al.* (2010) [3] conducted an experiment that in the analyzed milk and dairy products samples, among toxic metals only lead has been found in high concentration. At present, the CE Regulation no. 1881/2006 establishes a limit for Pb in raw milk of 0.02 mg/kg w.w. and 0.1 mg/kg w.w. for fats and fat milk.

Colour

On the basis of score cards filled by judges, it was concluded that C4 (42/50) i.e. Amul gave best result and C1 (36/50) i.e. Saras was least preferred brand in terms of color. Sivasankaran S and Sivanesan R (2013) [4] conducted an experiment to study Brand Preference of Packed Milk and Comparative Study on Rural and Urban Consumers in Kanyakumari District. It is concluded that majority of rural consumers feels that Arokya brand taste is very good. The package colour, size and designs as it imitates or resembles that of other branded milk.

Odour

On the basis of score cards filled by judges, it was concluded that C3 (43/50) i.e. Verka gave best result and C2 (38/50) i.e. Baba was least preferred brand in terms of odour. Mwangi *et al.* (2000) [5] conducted an experiment to study that 13% of samples were adulterated with added water. Recommendations for procedures to improve milk quality and how these can be communicated to farmers, market agents and consumers are proposed and discussed.

Fat percentage

On the basis of collected data it is found that F1 (4.1%) i.e. Saras is the best among all and F2 (1.3%) i.e. Baba is not preferred in case of fat. Yesmin *et al.* (2016) [6] conducted an experiment for Quality assessment tests on four different types of dahi prepared by adding different percentage of milk

fat such as 3.5% (A), 4.0% (B), 4.5% (C), and 5.0% (D) respectively. All the samples were analyzed for organoleptic, chemical and microbiological qualities.

S.N.F. (solid not fat) percentage

On the basis of collected data it is found that there is a tie up between S1 (7.5%) i.e. Saras and S2 (7.5) i.e. Baba is the best among all and S3 (6.7%) i.e. Verka is not preferred in case of S.N.F. Vijayan K and Prabhat A (2015) [7] conducted an experiment to assess the quality of the different milk brands available in Kottayam district, Kerala. Using questionnaire, information was elicited among the local people, to know the highly preferred milk sample; three more samples of varied brands were selected for the present study. Microbial, organoleptic and chemical parameters tests were carried out in all the 4 samples. Government owned milk brand had the overall quality with its highest ranking of preference and absence of coliform, < 2000cfu, 0.14 level of acidity, fat content and SNF being 3.5 and 8.5 respectively.

Observations and Tables**1. Taste****Table 1.1:**

SCM/Milk	M1	M2	M3	M4	Average
SCM-1	6	7	8	9	7.5
SCM-2	9	8	9	9	8.7
SCM-3	7	9	7	8	7.7
SCM-4	8	8	8	8	8.0
SCM-5	7	6	8	9	7.5
Average	7.4	7.6	8	8.2	

Table 1.2

SCC/Milk	C1	C2	C3	C4	Average
SCC-1	7	7	9	7	7.5
SCC-2	9	9	8	9	8.7
SCC-3	9	9	10	9	9.2
SCC-4	6	7	9	8	7.5
SCC-5	5	6	8	9	7
Average	7.2	7.6	8.8	8.4	

2. Texture**Table 2.1**

SCM/Milk	M1	M2	M3	M4	Average
SCM-1	7	9	7	7	7.5
SCM-2	9	9	8	9	8.7
SCM-3	8	9	10	8	8.7
SCM-4	7	8	9	8	8
SCM-5	6	7	9	8	7.5
Average	7.4	8.4	8.6	8	

Table 2.2

SCC/Milk	C1	C2	C3	C4	Average
SCC-1	7	8	9	7	7.7
SCC-2	8	8	9	8	8.2
SCC-3	8	8	10	9	8.2
SCC-4	8	7	7	9	7.7
SCC-5	6	7	7	9	7.2
Average	7.4	7.6	8.4	8.4	

3. Colour

Table 3.1

SCM/Milk	M1	M2	M3	M4	Average
SCM-1	7	9	7	7	7.5
SCM-2	9	9	9	9	9
SCM-3	9	9	9	9	9
SCM-4	9	9	9	9	9
SCM-5	7	6	8	9	7.5
Average	8.2	8.4	8.4	8.6	

Table 3.2

SCC/Milk	C1	C2	C3	C4	Average
SCC-1	8	7	9	7	7.7
SCC-2	8	9	9	8	8.5
SCC-3	9	9	10	9	9.2
SCC-4	8	6	7	8	7.2
SCC-5	6	7	8	9	7.5
Average	7.8	7.6	8.6	8.2	

4. Odour

Table 4.1

SCM/Milk	M1	M2	M3	M4	Average
SCM-1	6	7	7	6	6.5
SCM-2	9	8	9	9	8.7
SCM-3	7	8	7	9	7.7
SCM-4	7	8	9	7	7.7
SCM-5	6	7	8	9	7.5
Average	7.0	7.6	8.0	8.0	

Table 4.2

SCC/Milk	C1	C2	C3	C4	Average
SCC-1	8	8	8	8	8
SCC-2	8	9	9	9	8.7
SCC-3	8	8	9	9	8.5
SCC-4	7	7	6	7	6.7
SCC-5	5	6	8	9	7
Average	7.2	7.6	8.2	8.4	

5. Fat percentage

Milk Type	Saras	Baba	Verka	Amul
Fat %	4.1	1.3	3.7	2.5

6. S.N.F. Percentage

Milk Type	Saras	Baba	Verka	Amul
S.N.F. %	7.5	7.5	6.7	6.8

Conclusion

Here now by comparing the all four previously mentioned brands like Saras, Baba, Verka and Amul on the basis of score cards and mechanical tester, we could firmly conclude that If we talk about taste then Amul proved itself as a leading brand in case of milk and Verka has come up with best results in case of cheese whereas Saras in both milk and cheese is poorest for taste. As about the texture then Verka proved itself as a leading brand in case of milk and Verka and Amul both has come up with best results in case of cheese whereas Saras in both milk and cheese is poorest for texture.

Then by observing colour then Amul proved itself as a leading brand in case of milk and Verka has come up with best results in case of cheese whereas Saras in milk and Baba

in cheese are poorest for colour. The observation of odour then Verka and Amul both proved themselves as leading brands in case of milk and Amul has come up with best results in case of cheese whereas Saras in both milk and cheese is poorest for odour. Conclusion made about fat percentage then Saras proved itself as a leading brand which comes up with best results whereas Baba is the poorest one. At last observations of S.N.F. then Saras and Baba proved themselves as leading brands which come up with best results whereas Verka is the poorest one. At last I sum up that Amul is best brand ever in its race for both taste and quality.

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