

Assessment of Nutritive Value of Rabri

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Abstract

The study of assessment of nutritive value of Rabri the experiment was conducted in the department of A.H. & Dairying laboratory. Over all Moisture, fat, protein, lactose, sugar, ash contents were recorded to be 40.34, 9.22, 10.73, 15.53, 21.49 and 2.86 respectively irrespective of different fat and sugar levels, whereas these values ranged from 34.59-46.45%, 3.50-13.75%, 9.04-12.08%, 14.88-15.89%, 14.15-27.24% and 2.32-3.40% respectively due to different fat and sugar levels on account of 5,7 and 9 per cent of sugar levels different constituents of rabri were found to be 43.70, 39.76 and 37.58 per cent moisture, 10.08,9.42 and 8.16 per cent fat, 11.66,11.01 and 9.52 per cent protein, 15.44,15.36 and 15.80 per cent lactose, 15.23,22.21and 27.04 per cent Sugar, 2.73,2.87 and 3.00 per cent ash on account of 1.5,3.0 and 4.5 per cent of fat levels different constituents of rabri were found to be 43.93,39.52 and 37.58 per cent moisture, 4.66,10.25 and 12.75 per cent fat, 10.94,10.36 and 10.89 per cent protein, 15.75,14.95 and 15.91 per cent lactose, 21.80,20.60 and 22.06 per cent Sugar, 3.35,2.66 and 2.59 per cent ash content, respectively. The effect of different fat and sugar levels were found to be significant at 1% on Moisture, fat, protein, lactose, sugar, ash content of rabri.

Keywords: Chemical quality, fat, lactose, protein.

Milk and milk products have a special place in the diet of the Indians as it is consumed both by vegetarian as well as non-vegetarian. These are palatable, easily too digestible and highly nutritious and containing the different constituents like protein, lactose, fat, minerals etc. This product is a great delicacy, it contains about 20% fat, 17% lactose, 10% casein in and 20% cane sugar buffalo milk gives a better product than cow milk because of its higher fat content. Rabri is the excellent source of milk protein, fat and quick energy giving lactose and sucrose. Rabri is quite popular in rural area as well as urban part of central and eastern regions of area it has been classed as indigenous partially concentrated and sweetened whole milk product it is excellent constituent for body, providing a much firmer flesh than other kinds of sugar. Milk fat is

highly digestible and contents large number of short chained a fatty acid. Rabri have high nutritive value due to the favourable balance of essential contents of milk.

Materials and Methods

The method used for the estimation of protein, fat lactose, ash, moisture were Kjeldhal method, Gerber method, through process of heating and drying and lactose was estimated through filtration and titration respectively. The method for estimation of above nutrients was according to AOAC (1986).

Results and Discussion

The nutritive value of Rabri samples of account of various fat and sugar levels on raw milk weight basis has been given in tables 1 to 6.

Table 1: Average moisture % of fresh Rabri due to various levels of fat and sugar

Sugar on milk weight basis %	F ₁ 1.5 %	F ₂ 3 %	F ₃ 4.5 %	Irrespective of fat level
S1 (5)	46.45	42.69	41.97	43.70
S2 (7)	43.49	34.69	36.20	39.76
S3 (9)	41.97	36.20	34.59	37.58
Irrespective of sugar level	43.93	39.52	37.58	40.34

Moisture

The overall average moisture content of Rabri in present investigation was comparatively recorded high 40.34 then the average moisture recorded by Rangappa and Acharya (1948) and Srinivasan and Anantakrishna (1964) they were reported on average moisture content of 30% comparing with the finding of Gayen and Pal (1991). It was observed that the average moisture percentage of Rabri in this investigation was comparatively low as they reported 49.20% moisture which did not agree to the present finding.

Table 2: Average protein content % of fresh Rabri due to various level of fat and sugar

Sugar on milk weight basis %	F ₁ 1.5 %	F ₂ 3 %	F ₃ 4.5 %	Irrespective of fat level
S1 (5)	15.51	11.39	12.08	11.66
S2 (7)	11.29	10.67	11.07	11.01
S3 (9)	10.01	9.04	9.52	9.52
Irrespective of sugar level	10.94	10.36	10.89	10.73

Fat

Overall average fat content of Rabri in present investigation was found to be 9.22 while Rangappa and Acharya (1948) and Srinivasan and Anantakrishna (1964) were observed that 20% fat content which did not agree with present investigation where as Gayen and Pal (1991) reported 16.64, 12.90% fat for Delhi and kernal market sample, respectively and 16.01% fat in laboratory sample of Rabri were also found comparatively higher than the present finding.

Table 3: Average fat content % of fresh Rabri due to various level of fat and sugar

Sugar on milk weight basis %	F ₁ 1.5 %	F ₂ 3 %	F ₃ 4.5 %	Irrespective of fat level
S1 (5)	5.50	11.00	13.75	10.08
S2 (7)	5.00	9.76	13.50	9.42
S3 (9)	3.50	10.00	11.00	8.16
Irrespective of sugar level	4.66	10.25	12.75	9.22

Protein

Overall average protein content, when estimated on weight basis, was found to be 10.73% in present investigation. Protein content of Rabri was found to be more or less identical as compared to protein content reported by Rangappa and Acharya (1948) and Srinivasan and Anantakrishna (1964) on the weight basis. Likewise protein content of Rabri on account of different fat and sugar level were similar to the finding of Gayen and Pal (1991). They reported 10.61% protein content for laboratory made Rabri on weight basis.

Table 4: Average lactose content % of fresh Rabri due to various levels of fat and sugar

Sugar on milk weight basis %	F ₁ 1.5 %	F ₂ 3 %	F ₃ 4.5 %	Irrespective of fat level
S1 (5)	15.52	15.03	15.79	15.44
S2 (7)	15.83	14.94	15.33	15.36
S3 (9)	15.89	14.88	16.63	15.80
Irrespective of sugar level	15.74	14.95	15.91	15.53

Lactose

The average lactose content of Rabri in present investigation was 15.44, 15.36, 15.80, 15.53 lactose content of Rabri was found to be low as compared to lactose content reported by Rangappa and Acharya (1948) and Srinivasan and Anantakrishna (1964). They were reported 17% lactose content in Rabri, while comparing the result with Gayen and Pal (1991) lactose present of Rabri in present finding was comparatively high. They were reported 11.80% lactose laboratory made Rabri sample.

Table 5: Average sugar content % of fresh Rabri due to various levels of fat and sugar

Sugar on milk weight basis %	F ₁ 1.5 %	F ₂ 3 %	F ₃ 4.5 %	Irrespective of fat level
S1 (5)	15.51	14.15	16.04	15.23
S2 (7)	22.71	21.01	22.92	22.21
S3 (9)	27.20	26.70	27.24	27.04
Irrespective of sugar level	21.80	20.62	22.06	21.49

Ash

The average ash content, when estimated on weight basis, was found to be 2.86% in present investigation. Ash content of Rabri was found to be low as compared to ash content reported by Rangappa and Acharya (1948) and Srinivasan and Anantakrishna (1964) they reported 3% ash content in the rabri while comparing with the result of Gayen and Pal (1991). It was observed that the average ash percent of rabri in this case was found was comparatively high as they were reported 1.99% ash in laboratory made Rabri sample.

Table 6: Average ash content % of fresh Rabri due to various levels of fat and sugar

Sugar on milk weight basis %	F ₁ 1.5 %	F ₂ 3 %	F ₃ 4.5 %	Irrespective of fat level
S1 (5)	3.30	2.59	2.32	2.73
S2 (7)	3.36	2.62	2.65	2.87
S3 (9)	3.40	2.79	2.81	3.00
Irrespective of sugar level	3.35	2.66	2.59	2.86

Sugar

Overall average sugar contain of Rabri was found to be 21.49% while contain from 14.15 to 27.24 sugar contain of Rabri was recorded variable on account of different levels of fat in milk and sugar level. Irrespective of sugar level average sugar contain percentage of Rabri on account of various fat level, range from 20.60 to 22.06, minimum being in case of Rabri sample prepared from 3% fat milk & maximum being in case of Rabri sample prepared from 4.5% fat milk. The effect of different levels of fat in milk on sugar contain of Rabri was recorded

to be highly significant at 0.1% level of significant level should be highly significant different was observed. The analysis of several of data between sugars contain of Rabri prepared from 1.5 & 4.5% fat milk. It was observed that the sugar contain of Rabri varied significantly from one level sugar to another level. The effect of interaction of sugar level was also found to be highly significant. Overall average sugar of Rabri in present investigation where recorded low the range of sugar reported by Rangappa and Acharya (1948) and Srinivasan and Anantakrishna (1964). They were reported sugar range in Rabri from 25-30% on the other hand overall sugar contain of Rabri was found to be higher then the finding of Gayen and Pal (1991). They were reported comparatively low sugar contain (11.90%) in Rabri on weight bases. The investigator reported 11.83 & 12.29% sugar contain in Rabri sample procured from Delhi & Karnal Markets respectively.

Conclusion

The foregoing findings led to be concluded that excellent quality rabri could be produced form cow milk using 4.5% fat cow milk along with 5% sugar on raw milk weight basis followed by 7% sugar concentration method. however, very good quality rabri could also be produced by using 3.0% and 1.5% fat with other sugar levels. The sugar levels could be used according to be liking of the consumer.

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