

## **Seasonal Variation in S.N.F at Milk Producers Co-operative Union (Milk –Vita) of Baghabarighat, Sirajganj in Bangladesh**

Tanni Chanda.<sup>1</sup> Al-amin<sup>1</sup>.Goutam Kumar Debnath<sup>2</sup>

(1. Department of Dairy Science, Patuakhali science and Technology University, Bangladesh

(2. Department of Dairy and Poultry Science, Chattogram Veterinary and Animal Sciences University, Bangladesh)

**Abstract:** The present study was undertaken to find out the seasonal variation in Solids Not Fat (S.N.F %) of milk Vita of Baghabarighat, Sirajganj, Bangladesh. The data was collected by day to day recorded data of milk vita from March 2018 to February 2019. For our study, the year has been divided into three seasons – summer (March to June), Rainy (July to October) and Winter (November to January). Milk vita daily monitor and record SNF% of the received milk in two times morning and evening by using lacto scan (milk analyzer) to determine the S.N.F% in milk. The result of the present study on S.N.F% content of the receipt milk was ( $7.89 \pm 0.015\%$ ), ( $7.85\% \pm 0.073$ ) and ( $7.91 \pm 0.015$ ) respectively in summer, rainy and winter season. The S.N.F of % milk was lowest in the rainy season ( $7.85\% \pm 0.73$ ) and highest in winter ( $7.91\% \pm 0.015$ ). Mean comparison was performed the seasonal variation of SNF% in milk were analyzed S.P.S.S. 2016 method where there was no significant variation in S.N.F% content of milk among different season of the year. The variation of S.N.F % in milk will help the farmers to find out a seasonal indication of S.N.F% in their supplied milk that can help them to supply quality milk throughout the year to sweetmeat shop besides Milk Vita for enhancing their livelihood.

[Key Word: S.N.F=Solids not Fat, Milk Vita=Bangladesh Milk Producers Co-operative Union Ltd.]

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### **I. Introduction**

Milk with high S.N.F% is valuable to the consumer for its flavor and nutritional value and to the manufacturer of milk products. S.N.F% consists of all solids in milk other than fat. S.N.F% is the most important component of milk because of its nutritional value and its functional properties. Payment for milk on the basis of fat content has been the common practice for many decades. When the practice started it was a logical approach, as the principal product made from milk was butter. However, milk currently is used for many other purposes besides butter making, so there has been a progressive movement to give consideration to SNF% of milk when the price of milk is established. Fat and S.N.F% plays an important role in physico-chemical, sensory, textural characteristics and also the shelf life of any milk based sweet (Chaudhary et al., 2015). The price of milk is fixed mainly based on the fat in Milk Vita. But the dairy farmers are frequently encountering the problem of low solids not fat (S.N.F%) content in the milk, leading to refusal of milk as the farmers of Milk Vita supply a portion of the milk to sweet maker besides Milk Vita. The sweet makers determined the price of milk based on the percentage of solids-not-fat (S.N.F%) especially protein. Variation in the milk S.N.F% affects the profitability of the dairy farmers. Lower product yields result in lower economic returns to the producers who are selling milk to the sweetmeat maker. The aim of the present study was to find out mean average seasonal variation of S.N.F% of milk.

### **II. Materials And Methods**

The study was conducted at Bangladesh Milk Producers Co-operative Union Limited (BMPCUL), Baghabarighat, Shahzadpur, Sirajganj . It was based on recorded data of Milk Vita during March 2018 to February 2019 .Data were classified according to the different season of the year .The total year was divided into three season namely, summer (March-June) rainy (July-October) and winter (November-December) according to the agro-climatic condition of the country. In Milk Vita milk is examined after collection from receiver. After complication of collection they examine the milk in their laboratory morning and evening ensure the quality of the milk .Fat% and S.N.F% is measured by lacto star milk scanner. The volume of milk was measured directly with the help of balanced tank.

### III. Results And Discussion

The seasonal mean average of S.N.F % was presented in Table 1. The highest mean average of S.N.F % found highest in winter ( $7.89 \pm 0.015$ ), followed by summer and rainy season ( $7.85\% \pm 0.73$ ), ( $7.92\% \pm 0.052$ ). The influences of different seasons of the year on milk solid-not-fat are presented below:

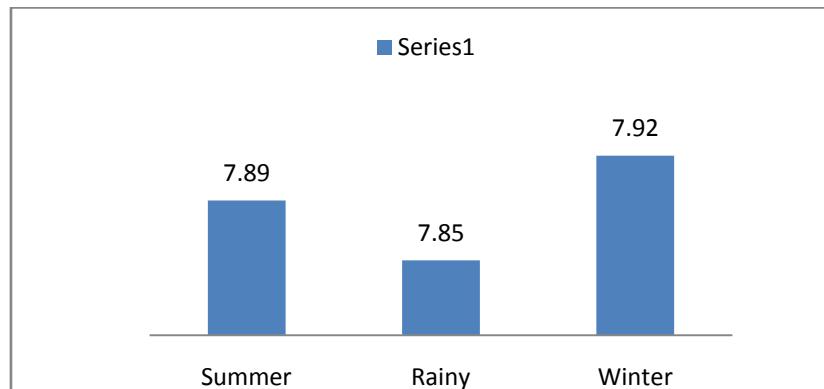
**Table 1:** Seasonal Mean average Solids Not Fat (S.N.F %).

Season	S.N.F(Mean $\pm$ SD)	Level of significance
Summer(March-June)	$7.89 \pm 0.015$	
Rainy season(July-October)	$7.85 \pm 0.073$	NS
Winter(November-February)	$7.91 \pm 0.052$	

**Table 2:** Regression Correlation between Season and milk S.N.F%

ANOVA		df	SS	MS	F	Significance	Level of Significance
Regression		1	0.02755102	0.02755102	0.03455779	NS	
Residual		10	7.97244898	0.797244898			
Total		11	8				

NS=Non Significant



**Fig:** Seasonal variations of S.N.F% were observed positive and non-significant.

The ANOVA for milk solids-not-fat with the mean values in different seasons have been presented in table 1 and 2 .Variation between season with S.N.% has been worked out in the present study and it was observed ( $7.89\% \pm 0.014$ ) in summer, ( $7.85\% \pm 0.072$ ) in rainy and ( $7.91\% \pm 0.051$ ) in winter respectively and it was also observed that season had non-significant effect on SNF value of milk of (Table 1).In general, milk S.N.F% percentages are highest in winter and lowest in summer.. In summer animals feed on fresh pasture in this time milk volume increases, S.N.F% decreases while in winter they feed on dry forage and at that time milk volume decreases, S.N.F% increases.

In the present study all the milk constituents showed the highest mean values in winter and the lowest in rainy season. Similar results were expressed by Masud et al. (1992). Our results also revealed non-significant effect of seasons on S.N.F% content of milk. Auldist et al. (1998) confirmed the non significant effect of seasons on SNF% content of the bovine milk. And S.N.F % with highest in winter and lowest in summer was similar with those presented by other scientists (Cziszter et al., 2007; Sala et.al., 2007), The fact that the green fodder is available after rainy season. Moreover it has been observed that water intake by the cows is drastically reduced in winter season, which in turn reduces the yield and increases S.N.F% whereas in the rainy season the percentage of milk constituents is reduced but milk yield is increased. The results of the present study indicated that milk producer failed to supply good quality milk in different season, owing to its low S.N.F%. If the farmers can take better management of supplying quality feed that will be helpful for them for get proper prizing of their milk.

### IV. Conclusion

According to the result obtained in this study, it was found that the seasonal changes has non-significantly affect the S.N.F% in milk in different season in the year. The highest milk production with the lowest concentration being obtained during rainy and summer season, on the other hand the lowest milk production with the highest S.N.F% percentage was obtained during winter season. During rainy season lower values were recorded for S.N.F% content of milk. Variations in S.N.F% content of milk were the major causes of variations in the final yield of milk product. Further study if we can identify the factors that are influence the

S.N.F% overall the year and it can be helpful to the farmers of Milk Vita for marketing same quality milk commercially throughout the year for uplifting their source of income.

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