



Study On The Yield And Qualities (Physio-Chemical) Of Chhena Prepared From Cross Bred Cow (H.F.) Milk By Using Different Strength Of Lemon Juice Coagulant

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ABSTRACT

The present study was planned to know the best quality of chhena prepared by different strength of lemon juice from cross bred cow milk . It can be concluded Chhena prepared from 2 % strength was highly acceptable.

Key words- Chhena, Qualities, Cross bred cow milk, Strength and lemon juice.

Introduction-India is the largest milk producing country (210.0 million tons during 2021-22) in the world, contributing 23% of global milk production (*P.I.B., Delhi*).About 45.0 percent of total milk produced in India is converted into manufacture of Indigenous milk product (*Dairy India 2007*).Pattern of milk consumption in India indicates that about 6.0 percent of milk utilized as chhena making (*Sahu and Das 2009*). Chhena is a solids obtained by acid coagulation of boiled hot whole milk and drainage of whey. According to the food safety and standards regulation (*FSSR2011*), Chhena means product obtained from cow or buffalo milk or combination thereof, by precipitation with sour milk, lactic acid or citric acid. It shall contain not more than 70% moisture and the fat content should not be less than 50% expressed on dry matter. The perusal of the following Table No-01 we are know the average composition of chhena –

Table No-01: Showing the average composition of chhena prepared from cow milk and buffalo milk

S.N.	Constituents in percent	Average composition of cow milk chhena	Average composition of buffalo milk chhena
1	Water	53.4	51.6
2	Fat	24.8	29.7
3	Protein	17.4	14.4
4	Lactose	2.2	2.3
5	Mineral	2.1	1.9
6	Total solids	46.6	48.4
7	pH	5.7	5.4

(Agriculture in India.net)

Objective of study-Attempt was made to study the yield and qualities (Physio-Chemical) of chhena prepared from different strength of lemon juice coagulant from cross bred cow milk.

Material and Methods- To study the qualities of chhena 10 samples of cross bred (H.F. Cross) cow milk collected from individual milk producers in the morning milking. The method of random sampling was employed in selection of milking cows for this purpose. All cows selected for this study were in normal health. A representative sample was taken in clean dry stainless steel container. The analysis of samples were done after 30 minutes of production. The milk samples were analysed for acidity, casein specific gravity, fat percent, total solids, S.N.F and S.N.F:Fat ratio. Milk samples were analysed from the methods recommended by A.O.A.C.(1970). The perusal of the following Table No-02 we are know the average composition of cross bred cow milk -

Table No-02: Showing the average composition of crossbred cow milk

S.N.	Constituents in percent	Average composition of cross bred cow milk
1	Water	86.29
2	Fat	4.58
3	Casein	2.57
4	Specific gravity	1.030
5	Total solids	13.71
6	S.N.F/Fat ratio	1.99
7	Acidity	0.13

2Kg milk was kept in to steel container over burning stove .It was stired after some time. One litre milk was taken in a beaker for one factor and kept on a sprit lamp with wire gauge, when milk attained the required temperature (800C), then the coagulant (2% and 3%) lemon juice was sprinkled over the surface and contents were mixed by rotating the beaker, the coagulated milk was strained immediately through muslin cloth. It was hanged for 1 hour. Thus the chhena prepared in different lots were kept in covered glass bowl properly labeled.

The above prepared chhena was tested and analysed for the following General , Physio-Chemical qualities-

I Yield –

1. Yield of chhana %
2. Yield of chhana whey %

II Physical qualities –

1. Colour

III Chemical qualities-

1. Moisture %
2. Total solids %

Chhena were analysed from the methods recommended by A.O.A.C.(1970).Data were analyzed statistically by using “T” Test as per Panse and Sukhatme (1985).The experiment was replicated 5 times.

Result and Discussion- The Yield and Qualities (Physio-chemical) of Chhena prepared from cross bred cow milk by using different strength of lemon juice coagulant are presented in Table No-04-

Table No-04-Showing the Yield and Qualities (Physio-chemical) of Chhena prepared from cross bred cow milk by using different strength of lemon juice

SN	Qualities	Chhena prepared from different strength of lemon juice coagulant	
		2 %	3 %
I	Yield		
	1.Yield of chhana %	13.48	13.20
	2.Yield of chhana whey %	80.60	82.20
II	Physical Quality		
	1.Colour	Yellowish moist	Yellowish moist with shining surface
III	Chemical Qualities		
	1.Moisture %	54.85	52.50
	2.Total solids %	45.15	47.50

It is evident from Table no-4 that the yield of chhena was higher with lower concentration of coagulant but in case of yield percent of whey it was found vice versa. The observation recorded in the above table indicates that Yellowish moist colour found in 2% strength and Yellowish moist with shining surface 3% strength. Strength of coagulant has got practically no influence on colour.A direct relationship has been found between total solids and strength of coagulant.The higher moisture percent was present in chhena prepared from lower concentration of coagulants.The statistical examination clearly shows that the variation was insignificant.our finding related to other workers Deshpande and Jha 2007, Dwivedi,Saraswatand Singh, H.N. 1998 Kumar and Srinivasan1982.

Conclusion- It can be concluded chhena prepared from 2 % strength was highly acceptable.

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