

Chakka

It is an intermediate product in the preparation of shrikhand. It is prepared by draining the whey from lactic acid fermentation curd from milk. It is a white to pale yellow semi-solid product of good texture and uniform consistency. It shall conform to the following requirement

Requirements	Chakka	Skimmed Milk Chakka	Full cream Chakka
Total solids, percent by weight	Min 30	Min. 20	Min. 28
Milk fat (on dry basis) percent by weight	Min. 33	Min. 5	Min. 38
Milk protein (on dry basis) percent by weight	Min 30.	Min 60	Min. 30
Titrateable acidity (as lactic acid) percent by weight	Max. 2.5	Max 2.5	Max. 2.5
Total Ash (on dry basis) percent by weight	Max. 3.5	Max. 5.0	Max 3.5

Chakka when sold without any indication shall conform to the standard of Chakka.

Shrikhand

Shrikhand is a popular fermented and sweetened milk product of the Western part of India and consumed as a dessert or snack food. It is made from concentrated dahi with a sweet and sour taste. The consistency is influenced to great extent by the moisture, fat and sugar levels. According FSSA (2011), Shrikhand conform to the following specifications.

Parameter	Shrikhand	Full Cream Shrikhand	Fruit Shrikhand
Total solids, minimum, %, (m/m)	58.0	58.0	58.0
Milk fat, minimum, %, (m/m), on dry basis	8.5	10.0	7.0
Milk protein*, minimum, %, m/m, (on dry basis)	9.0	7.0	6.0
Titrateable acidity, maximum, % (as lactic acid)	1.4	1.4	1.4

Sugar (sucrose), maximum, %, m/m (on dry basis)	72.5	72.5	72.5
Total Ash, maximum, %, m/m (on dry basis)	0.9	0.9	0.9

* Protein content is 6.38 multiplied by the total nitrogen determined

In traditional method, buffalo milk or mixed cow milk is boiled and after cooling to room temperature (30 -35⁰C), it is incubated with lactic culture (dahi) and incubated for 6 – 8 hours. When the curd is firmly set (acidity 1.0%), it is placed in a muslin cloth and hang on a bag for drainage of whey for 6 – 8 hours. The curd is intermittently squeezed to facilitate whey drainage. The solid mass thus obtained (called chakka) is mixed with sugar and well kneaded and rubbed through muslin cloth to give smooth sweet and sour product. Permitted colours, flavour and fruits, nut, spices are also added to provide variety.

Lassi

Lassi is a popular refreshing beverage in the northern and western state of India. Lassi is the by-product in the preparation of dahi by indigenous method. Dahi is churned, with frequent addition of water, until the butter granules are formed. The diluted beaten curd is lassi. It is desirable to homogenize the product for improving body and texture.

The composition of lassi, however, varies from place to place and depends upon the fat content of dahi, extent of dilution during churning and efficiency of churning.

Chemical composition (%) of lassi

Water	Fat	Protein	Lactose	Lactic acid
90-91	0.1-1.0	3.3-3.5	4.7-5.3	0.5-1.1

The product is used to quench the thirst after addition of sugar, salt and species. It has a low keeping quality and it very quickly separates into a watery layer on the top and a thick proteinous layer at the bottom. A process has been developed for the large scale manufacture of long life UHT lassi for a period of 3 months.

Yoghurt

Yoghurt is a semi-solid fermented milk product which originated centuries ago in Bulgaria. Its popularity has grown and is now consumed in most parts of World. It is medium-acid ferment milk and is characterized by a smooth, viscous gel with delicate walnutty flavour. The essential flora of yoghurt consists of the thermophilic lactic acid bacteria *S streptococcus salivarius subsp. termophilus* and *lactobacillus delbrueckii subsp.*

bulgaricus. Milk is heated at 85⁰C for 30 minutes or 10 minutes at 95⁰C. The milk is then homogenized using high pressure of 2000-2500 psi and cooled for an hour. While it is heated, the starter cultures are added to milk at 2.5% preferably at 1:1 ratio. Incubation is at 42-45⁰C for 3-6 hours until pH 4.4, and 0.9-1.2% titratable acidity is reached. The coagulated product is cooled to 5-22⁰C. Fruit and flavour may be incorporated before incubation and packaged. The product is then cooled and refrigerated to slow down the physical, chemical and microbiological degradation. Small amounts of volatile compound like acetic acid, diacetyl and acetaldehyde are produced by *Lb.delbruckii subsp. bulgaricus* which contribute unique flavour of yoghurt. According to FSSA (2011), yoghurt conform to the following specification

Chemical composition of yoghurt:

Product	Milk Fat	Milk Solids not fat	Milk protein	Sugar
Yoghurt	Not less than 3.0 percent m/m	Not less than 8.5 percent m/m	Not less than 3.2 percent m/m-	-
Partly skimmed Yoghurt	Not less than 0.5 percent m/m and not more than 3.0 percent m/m	Not less than 8.5 percent m/m	Not less than 3.2 percent m/m-	-
Skimmed Yoghurt	Not more than 0.5 percent m/m	Not less than 8.5 percent m/m	Not less than 3.2 percent m/m-	-
Sweetened/ Flavoured Yoghurt	Not less than 3.0 percent m/m	Not less than 8.5 percent m/m	Not less than 3.2 percent m/m-	Not less than 6.0 percent m/m
Fruit Yoghurt	Not less than 1.5 percent m/m	Not less than 8.5 percent m/m	Not less than 2.6 percent m/m-	Not less than 6.0 percent m/m

Titratable acidity as lactic acid shall not be less than 0.85 percent and not more than 1.2 percent. The specific lactic acid producing bacterial count per g shall not be less than 10,00,000.

Kefir

Kefir is an oldest fermented milk product that originated in the Caucasus region .It is cream like, sparkling, acidic and alcoholic fermented milk products. It is prepared by inoculating cow, goat or sheep’s milk with kefir grain. The kefir grain consists of protein, carbohydrate and a mixture of several types of microorganisms, such as yeast and lactic acid

forming bacteria. The yeast represent about 5-10 % of the total microflora. Kefir is usually made with whole milk and is heated to 90-95⁰C for five minutes to denatured whey proteins and improve the viscosity of the products. Following heat treatment the milk is cooled to 23⁰C, after which 2-3% starter is added. The product is incubated for fermentation at 23⁰C, generally overnight till the product will reach 0.8% ethanol and 1.0% carbondioxide.

Kumiss

Kumiss is a popular fermented milk drink in Russia and Western Asia. It is a sparkling drink and has a grayish colour and gives an initial acidity of 0.45% lactic acid .and produce carbon dioxide. Carbon dioxide imparts the frothy appearance to product and contributes flavour. Traditionally, it is prepared from **mare's milk**. Milk is heated to 26⁰C – 28⁰C and about 10-30% starter culture is added for fermentation. The starter culture is a mixture of *Lb delbrueckii subsp Saccharomyces lactis* and lactose-fermenting yeast. e.g. *Saccharomyces lactis*. Milk is then intensively stirred to aerate it and to obtain dispersed protein particles and is bottled. An incubation time of few hours at 18 – 21⁰C and then for a certain time at 4-6⁰C.

Acidophilus Milk

It is a traditional fermented milk product. The milk (skim or whole) is heated to 95⁰C for 1 hour, to reduce the microbial load and flavour the slow growing *Lactobacillus acidophilus* (LA) culture. Milk is inoculated with LA culture at a level of 2 -5% and incubated at 37⁰C until coagulation. Some acidophilus milk has acidity as high as 1% lactic acid, but for therapeutic purposes 0.6 – 0.7% is more common. It has been thought to have therapeutic benefits in the gastrointestinal tract.