

# **CHHANA AND ITS PREPARATION**

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## Introduction

- Chhana refers to the milk-solids obtained by the acid coagulation of boiled hot whole milk and subsequent drainage of whey.
- The acids commonly used are lactic or citric, in both natural and chemical forms.
- According to PFA Rules(1976) chhana should not contain more than 70 per cent moisture, and the milk fat content should not be less than 50.0 per cent of the dry matter.



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## CHEMICAL COMPOSITION

The chemical composition of chhana depends mainly on the initial composition of milk; the conditions of coagulation, the technique of straining (which, in turn, determines the percentage moisture retained) and the losses of milk-solids in the whey.

*Chemical composition of chhana (62) (percentage)*

Type of milk	Moisture	Fat	Protein	Lactose	Ash
Cow	53.4	24.8	17.4	2.1	2.1
Buffalo	51.6	29.6	14.4	2.3	2.0

*Note:* In the above table, the average composition of cow milk used for chhana making was: fat 4.5 per cent and total solids 13.0 per cent, while that of buffalo milk was fat 8.4 per cent and total solids 17.9 per cent.

## FOOD AND NUTRITIVE VALUE

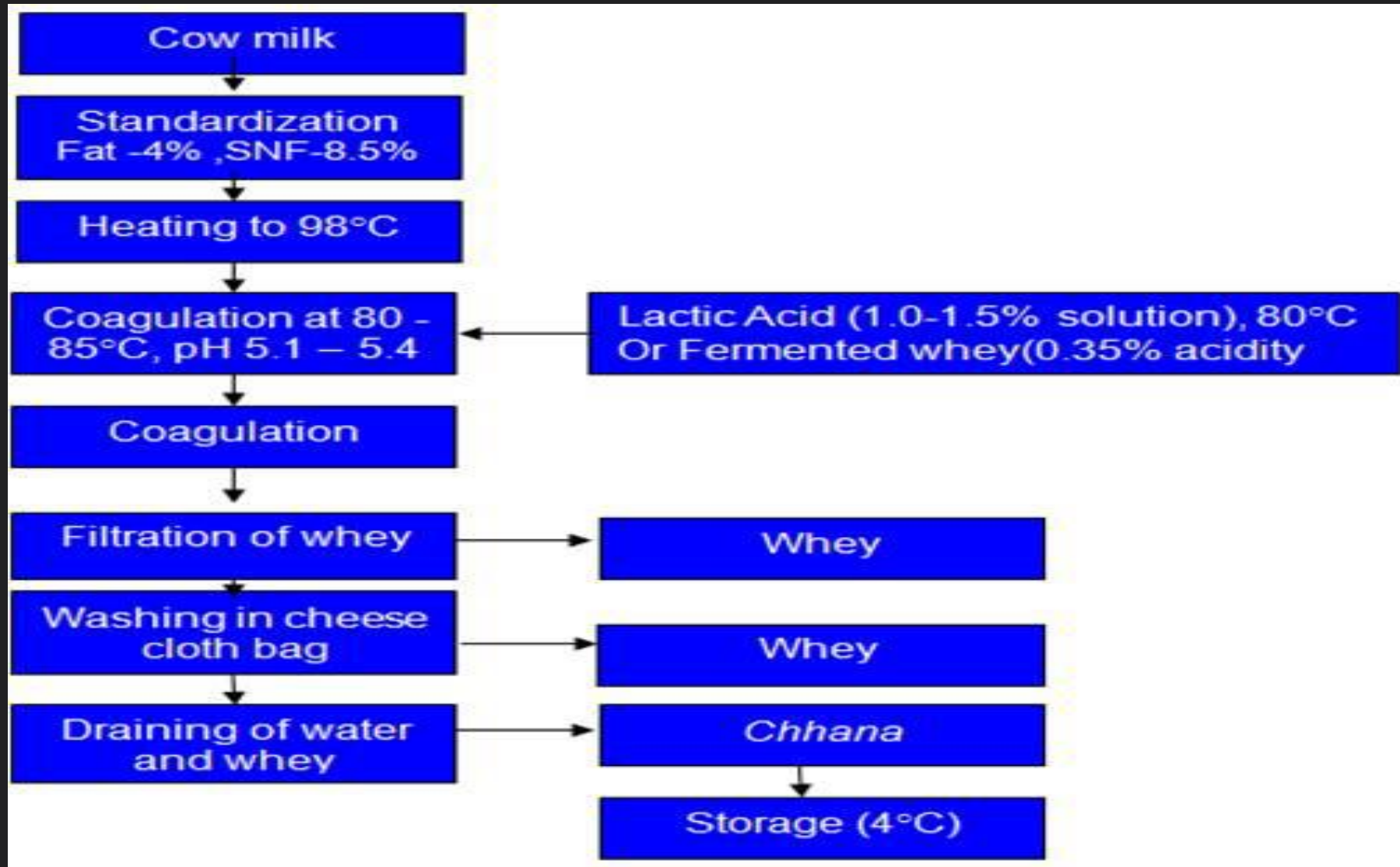
- As chhana has a fairly high fat and protein content, and also contains some minerals, especially calcium and phosphorus, its food and nutritive value is fairly high.
- It is also a good source of fat-soluble vitamins A and D. (With its high protein and low sugar content, chhana is highly recommended for diabetic patients.)
- Chhana is used as a base for the preparation of a variety of sweets like sandesh, rasogolla, chamcham, rasomalai, pantoa, chhana murki.



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# METHOD OF PREPARATION



## CONDITIONS OF COAGULATION

- In order to obtain a desirable body and texture in chhana (with cow milk) the pH of coagulation should be around 5.4, the temperature of coagulation about 82°C and the time in which coagulation should be effected about 0.5 to 1 minute. A satisfactory strength of the coagulating acid solution is 1-1.5 per cent.
- Lactic acid tends to produce a granular texture (suitable for rossogolla), citric acid tends to produce a pasty one (suitable for sandesh).
- The speed with which the mix is stirred has but an insignificant effect on the body and texture of chhana.
- Slow stirring is preferable, so as to avoid foam formation-which obstructs the visibility of the clear coagulation stage first time reached.

## QUALITY OF MILK

- Cow milk is preferred since it yields a soft-bodied and smooth-textured product –both of which factors make it highly suitable for the preparation of high-grade chhana sweets (such as rossogolla and sandesh).
- The chhana from buffalo milk (without any pre-treatment) has a slightly hard body and a greasy and coarse texture, and does not produce good quality chhana sweets.
- A minimum fat level of 4 per cent in cow milk and 5 per cent in buffalo milk is necessary for producing a desirable body and texture in chhana for sweet-making.
- Fresh, sweet milk produces the best chhana, any developed acidity tends to produce an undesirably sour smell and a bitter taste.
- The presence of colostrum in milk tends to produce a pasty texture in the coagulated mass, which jeopardizes its suitability for sweet-making.

## PHYSICAL QUALITY OF COW AND BUFFALO CHHANA

PARTICULARS	COW	BUFFALO
COLOUR	Light yellow	Whitish
APPEARANCE	Moist surface	Greasy surface
BODY	Soft	Slightly hard
TEXTURE	Smooth	Slightly coarse
FLAVOUR	Mildly acid	Mildly acid
SUITABILITY FOR SWEET	Highly suitable	Not suitable



## STORAGE AND KEEPING QUALITY

**STORAGE-** Since chhana stored at room temperature has a very low keeping quality, refrigerated storage (5-10°C) is prefer-able.

**KEEPING QUALITY-**The keeping quality of chhana is mainly influenced by:

- a) the storage temperature.
- b) quality of the raw material (milk).
- c) initial moisture content.
- d) sanitary conditions observed during manufacture.

The keeping quality of chhana under ordinary packing is on average 2, 3 and 12 days at 37°C, 24°C and 7°C, respectively.

Reference - **Outlines of Dairy Technology – Sukumar De (2006).Published in India by Oxford University Press**

*Thank you all*