

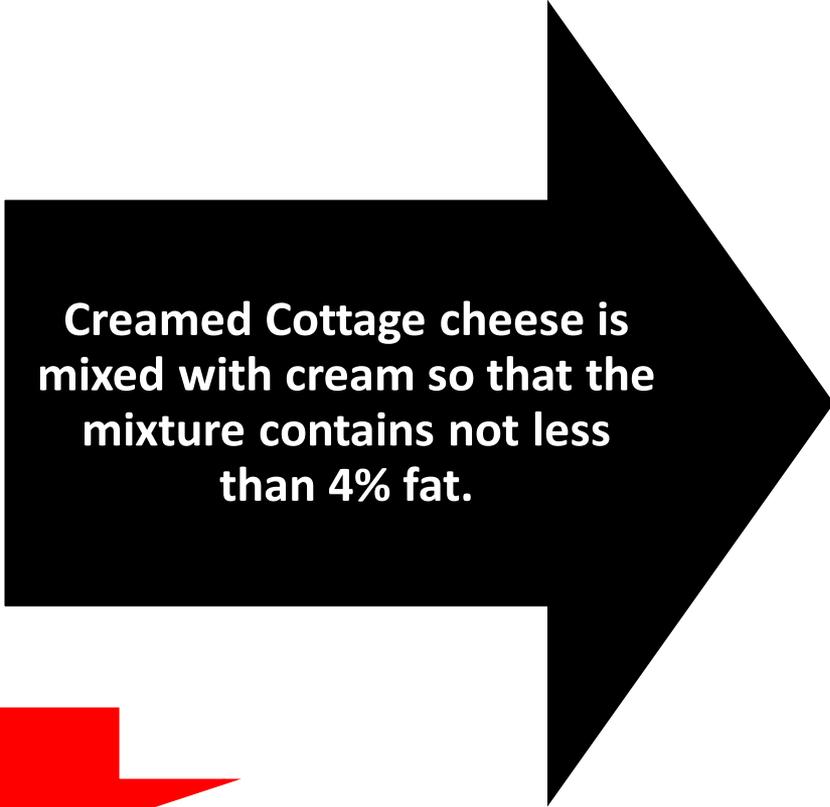
Cottage Cheese



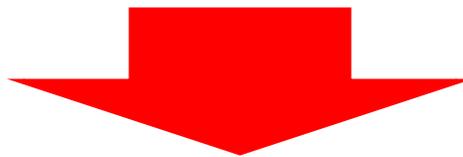
What is Cottage Cheese?



Cottage cheese is soft, unripened cheese usually made from skim milk, mild acid flavor and consisting of small particles/flakes of curd having meaty consistency.



Creamed Cottage cheese is mixed with cream so that the mixture contains not less than 4% fat.



Both the cheese are usually salted

**Milk coagulated
by acidity
developed by
action of lactic
starter**

**Method of
Manufacture**

**Coagulation
accomplished by
combined actions
of lactic starter
and small quantity
of rennet**

Types of Curd

Type of curd	Character
Acid	Smaller granules/particles Extremely acid flavor (mildly acid if thoroughly washed) Lower yield
Rennet	Large flakes/particles Mild flavor, Meaty body

Particulars	Short Setting	Long Setting
Coagulation time	4-6 h	16 h (overnight)
Setting temp.	29-32°C	22°C
Amount of starter added	4-6%	0.5 to 1%

1. Milk for Cottage Cheese

- i) Fresh, sweet, clean-flavored skim milk of low bacterial count is used for manufacturing Cottage cheese.**
- ii) Skim milk is pasteurized immediately after separation.**
- iii) Low Temperature Long Time (LTLT) method of pasteurization is preferable as excessive heating of milk causes soft curd formation (which is easily broken during cutting and handling).**

2. Starter

- i. High quality lactic starter is used.**
- ii. Bulk starter culture is prepared using skim milk.**

3. Rennet

- i) Rennet, if added, is at the rate of 15 mg per 100 l milk.**
- ii) It is diluted about 40 times with potable water for uniform distribution.**
- iii) Calcium chloride may be added (before adding rennet), if desired for firm curd formation.**
- iv) Color may be added @ 0.5-1.0 ml/100 l (before adding rennet), if desired.**
- v) Most desirable TA of whey at cutting is approx. 0.5% (optimum pH 4.6-4.7). Whey must come from interior of curd and must be clear and free from curd particles.**
- vi) If acidity is too low at cutting, curd develops rubbery consistency.**
- vii) Too high acidity results in shattering of curd, giving low yield.**

4. Cooking

- i) Cooking begins soon after cutting and continues for 1–2 h until temperature is about 46 C or until curd becomes firm enough to remove whey.**
- ii) Stirring during heating kept at a minimum and is gently done in early stages.**
- iii) The temperature is increased slowly at first.**

5. Removal of whey

- i) Whey is removed when curd cubes have no soft centres and when a handful of them squeezed gently show slight elasticity.**
- ii) Whey is removed from curd approx. 2 h after cutting. At this time the size of curd cubes approx. two third of their original volume.**

6. Washing the curd

- i) Curd is washed after all the whey has been removed.**
- ii) This treatment makes the curd firmer and hard to touch; it also removes acid whey from around it and aids in producing desired mildness in flavor. Wash-water is applied in at least two treatments.**
- iii) First is at a temperature of about 21 C and in amounts not less than twice the volume of curd in the vat. After 15 mins soaking of cubes, the wash-water is removed. The second wash water is at 15 C or lower, in amounts as above.**

7. Draining

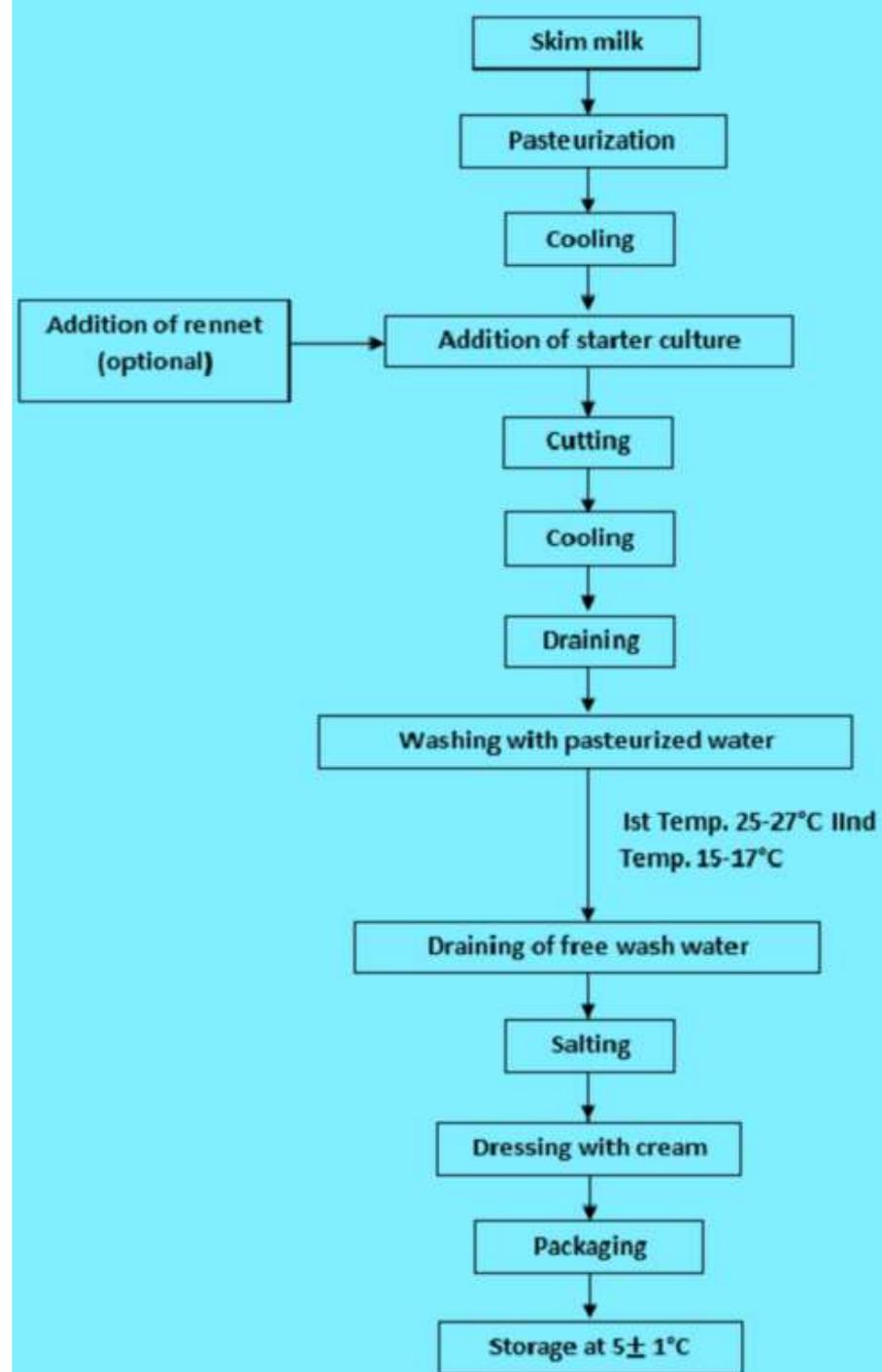
- i) Thorough draining.**
- ii) Best done by placing curd cubes in a draining rack with perforated bottoms, which can be wheeled into rooms under refrigeration.**

8. Salting

- i. Salting is done when free moisture is drained from the curd.**
- ii. Salt can be applied to the curd in vat or can be dissolved in the cream for creamed Cottage cheese.**
- iii. Coarse salt preferred.**
- iv. Salt is added @ 1% or curd weight of 1.5 kg/1000 kg milk.**
- v. Salted or unsalted curd is held at about 2C till shipping.**

9. Creaming

- i) Cottage cheese is creamed immediately after draining, if product is to be packaged at once.
- ii) Holding curd overnight in cold room before creaming makes it more firm at creaming.
- iii) Calculated amount of 20% cream is homogenized before mixing to form thick glossy coating over curd particles.



10. Yield

i) Yield of curd before creaming depends essentially upon:

- ✓ The composition of milk
- ✓ The manufacturing losses
- ✓ The moisture content of the cheese

While approx. yield of uncreamed Cottage cheese is 15% of milk, creamed Cottage cheese (with 20% fat in cream and 4% fat in finished product) is 18.3%.

Yield of Cottage cheese is given by the formula:

$$\% \text{ yield} = \frac{\text{Amount of skim milk}}{100} \times [(4.9 \times \% \text{ T.S. in skim milk}) - 29.7]$$

10. Keeping Quality

- i) Both Cottage cheese and creamed Cottage cheese have short keeping quality even under refrigerated storage (5-10 C).**
- ii) Uncreamed Cottage cheese may be preserved for 90 days or longer by freezing or by brine storage. However, quality will deteriorate because freezing often leads to graininess and curd shattering, particularly with rennet cheese.**