

**DEPARTMENT OF LIVESTOCK PRODUCTS  
TECHNOLOGY**

***TOPIC : DIFFERENT TYPES OF SPECIAL MILKS***

**Dr. Jena Ram Gehlot**

**Assistant professor**

**Department of Livestock Products Technology**

# OBJECTIVE

## S

1. STERILIZED MILK
2. HOMOGENIZED MILK
3. STANDARDIZED MILK
4. FLAVORED MILK
5. TONED MILK
6. DOUBLE TONED MILK
7. RECOMBINED MILK
8. FERMENTED MILK
9. FROZEN CONCENTRATED MILK
10. VITAMINIZED MILK
11. SOFT CURD MILK
12. HUMANIZED MILK
13. MISCELLANEOUS MILK

# INTRODUCTION

- Milk is defined as the whole, fresh ,clean lacteal secretion obtained by complete milking of one or more milch animals I.e., 15 days before or 5 days after calving. (Colostrum less ).
- In India, the term milk refers to cow or buffalo milk, or a combination of two.
- **India** is the largest producer of milk and as per national dairy development board (NDDB)'S estimation, the country produced **221.6 million MT** of milk in 2021-2022.
- The per- capita availability of milk is **444gm/day** during 2021-2022 by 17gm/day over previous year.
- Top 5 major milk producing states are **RAJASTHAN, U.P, M.P , GUJART, A.P.**

# SPECIAL TYPES OF MILK

- UNDER THE CATEGORY OF SPECIAL MILK ARE INCLUDED THOSE PROCESSED MILK PRODUCTS WHICH PHYSICALLY RESEMBLE AND BEHAVE LIKE LIQUID MILK.

## 1. STANDARDIZED MILK:

- STANDARDIZED MILK IS MILK IN WHICH THE ORIGINAL FAT AND ALSO THE RATIO OF FAT TO THE MILK CONTENT HAS BEEN CHANGED EITHER BY :
  1. THE REMOVAL OF FAT, OR
  2. THE ADDITION OF SKIM MILK OR
  3. THE ADDITION OF CREAM.
- ACCORDING TO PFA RULES 1976, STANDARDIZED MILK SHOULD CONTAIN
  1. MINIMUM FAT -4.5%
  2. MINIMUM SNF- 8.5%

## 2.HOMOGENIZED MILK:

- Homogenized milk is milk which has been treated in such a manner as to ensure **breakup of the fat globules to such an extent that after 48 hrs quiescent storage no visible cream separation occurs on the milk.**
- Homogenization refers to the process of forcing the milk through a homogenizer with the object of sub- dividing the fat globules.
- In efficiently homogenized milk, the fat globules are **subdivided to 2 microns or less in diameter.**



### 3. STERILIZED MILK:

- Sterilized milk may be defined as milk which has been heated to a temperature of **100 degree celcius** or above for such lengths of time that it remains fit for human consumption for at least 7 days at room temperatures.
- It heated in such a way that it's **colour and flavour** will be remains as normal milk.

### 4. FLAVOURED MILK:

- Flavoured milks are milks to which some flavoured have been added.
- When flavours added to the milk the fat percentages of the milk will be equal to the legal requirement.

EX: chocolate flavours , strawberry flavours , mango flavours etc.

- Fat percentage is lower i.e. **1-2%** .



## 5. TONED MILK:

- Toned milk refers to milk obtained by the **addition of water and skim milk powder to whole milk.**
- In practice, whole buffalo milk is admixed with reconstituted spray dried skim milk powder for the production of toned milk.
- Under PFA rules (1976), toned milk should contain a minimum of
  - Fat – **3.0 %** and
  - SNF -**8.5 %** throughout India.

## 6. DOUBLE TONED MILK:

- Double Toned milk is milk in which is also obtained by the **addition of water and skim milk powder to whole milk.**
- Under PFA rules 1976), Double Toned Milk should contain a minimum of
  - Fat- **1.5%** and
  - SNF – **9%** throughout India.

## 7. FERMENTED MILK:

- Fermented milks are those milks which have been made by employing **selected microorganisms to develop the characteristic flavour and/ or body texture.**
- Fermentation has been defined as the metabolic process in which chemical changes are brought about on an organic sub-stratum, whether protein, carbohydrate or fat, through the action of enzymes liberated by specific microorganisms (Lactobacilli or bifidobacteria).
- Ex : Natural butter milk , yogurt , Kefir and kumis.
- \* **KEFIR AND KUMIS ARE THE FERMENTED MILK PRODUCTS .**
- Kefir is viscous, acidic and mildly alcoholic milk beverage.
- Kumis is a mildly alcoholic drink made from fermented mare's milk.





- The culture used for fermentation of kumiss may be *Lactobacillus acidophilus*.
- The culture used for fermentation of kefir by kefir grains, which contains *Streptococcus lactis*, kefir bacilli etc.

## **8. RECOMBINED MILK:**

- This refers to the product obtained when butter oil, skim milk powder and water are combined in the correct proportion to yield fluid milk.
- Under PFA rules, recombined milk should contain a minimum of Fat – **3%** and SNF- **8.5%** .

## **9. FROZEN CONCENTRATED MILK:**

- This refers to milk which has been partially concentrated and then solidified by freezing.

## **10. VITAMINIZED MILK / IRRADIATED MILK:**

- Vitaminized milk is milk to which one or more vitamins are added.
- Irradiated milk is milk in which the vitamin –D content has been increased by exposure to UV rays.

- Addition of vitamins and minerals to milk is called fortification and such milk is called fortified milk.

### **11. SOFT CURD MILK:**

- It is milk that forms a soft curd when coagulated with rennet or pepsin under standardized procedure.
- Soft curd milk has a curd tension of less than 25 gr.



### **12. HUMANIZED MILK:**

- Humanized milk that has had its composition modified to resemble human milk, for infant feeding.
- The major change is a reduction in protein content, achieved by dilution with carbohydrate and restoration of the fat content.

## 13. MISCELLANEOUS MILKS :

### 1. FILLED MILK:

- Same as recombined milk, except that the fat is derived from a vegetable source.

### 2. IMITATION MILK:

- A product resembling milk but of non- dairy origin.

### 3. VEGETABLE TONED MILK:

- The milk protein of skim milk powder is substituted by vegetable protein isolated from groundnut.

### 4. SOYA MILK:

- Made from soyabean by special patented products.

**THANK YOU**

---