

## Milk hygiene/ Practical

### Bacteriological tests using standard plate count of raw milk

Bacterial contamination of raw milk can generally occur from three main sources: **within the udder, outside the udder, and from the surface of equipment used for milk handling.**

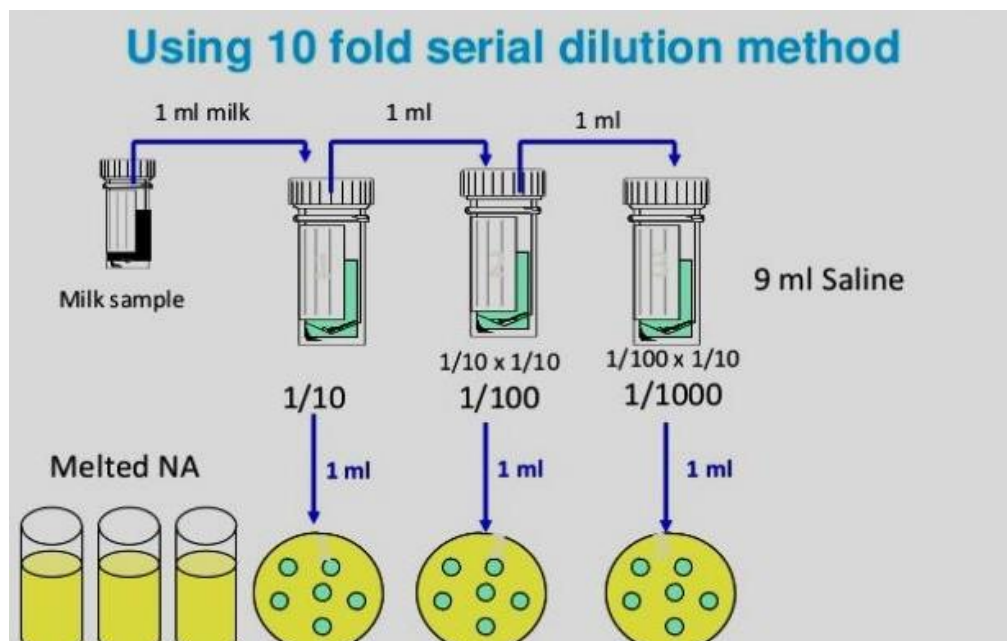
**Aim:** To determine total number of bacterial count in milk at the time of pickup.

#### Equipment:

1. Milk sample
2. Nutrient agar
3. Test tubes
4. Pipettes
5. Petri dish

#### Procedure

1. Prepare 200 ml nutrient agar
2. Prepare of dilutions using 10 fold serial dilution



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3. From the last three dilutions, transfer 1 ml from sample to petri dish and mix with gar medium and allow to set
4. Incubate the plate at 37C° for 24 h
5. After incubation, counting the colonies on petri plates containing between 30 and 300 colonies
6. Calculation:

$$\begin{aligned}\text{Count of cell} &= \text{Number of colonies in plate} * \text{dilution factor} \\ &= \text{Number of bacteria /ml}\end{aligned}$$

Example: If 152 colonies in plate of 100.000 dilutions then the count are:

$$\text{Count of cell} = 15,200,000 \text{ CFU/ml}$$

**Note: CFU (colony forming unit) is a unit used to estimate the number of viable bacteria cells in a sample.**

### Results

Standard plate count/ml	Grading of milk
<2,00,000	Very good
2,000,00-10,00,000	Good
10,00,000-50,00,000	Fair
>50,00,000	Poor