

Microorganisms in Dairy Products

I. Cheeses.

II. Yoghurt.

III. Lipid dairy product.

***Cheeses:-** is the hard product of milk. It is produced by the addition of lactic –acid bacteria as a starter or the addition enzymes or acids followed by processes to give the texture & flavor of chesses.

Classification of cheese:

Soft: moisture content 40-80%

Semi-soft: moisture content 30-40%

Hard: moisture content 30%.

Spoilage of cheese

Depend on:

- 1-Type or kind of chesses.
- 2-The moisture content.
- 3-Temperature.
- 4-Period of storage.

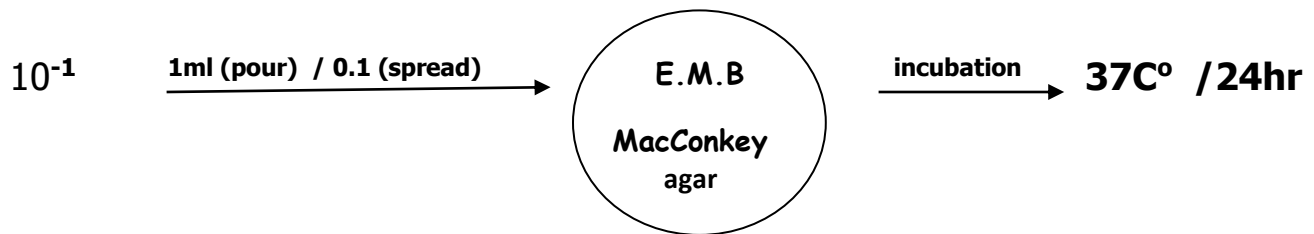
The most important genera of bacteria which contaminate cheese:

- Coliforms*: from animal or human \rightleftarrows causes acids & gases.
- Lactic acid bacteria* \rightleftarrows causes sour flavor.
- Bacillus & Clostridium* \rightleftarrows causes lipolyzation & proteolyzation of cheese.
- Pseudomonas & Proteus* \rightleftarrows causes foul odor & slime.
- Cladosporium* \rightleftarrows causes black or green color.

Procedure:

Aseptically , taken 10 gm from various parts from chesses & put into sterile container , transfer the contents into sterile mortar.

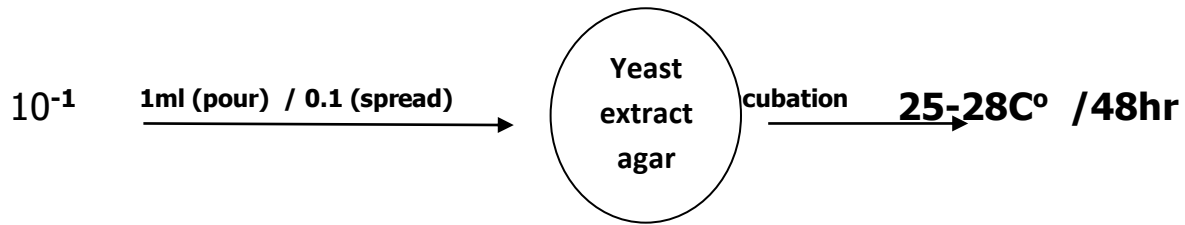
Mix with 90 ml diluted solution and shaken several times by mortar to obtain a 10^{-1} .the mixture is left for 3-5 min just before making serial dilution.

Laboratory tests***White cheese****1- General microbes (aerobic plate count)****2- Detection of the Coliform**

*E.M.B= Eosin methylene blue

3-Protelytic Bacteria:

4-Mold & Yeast

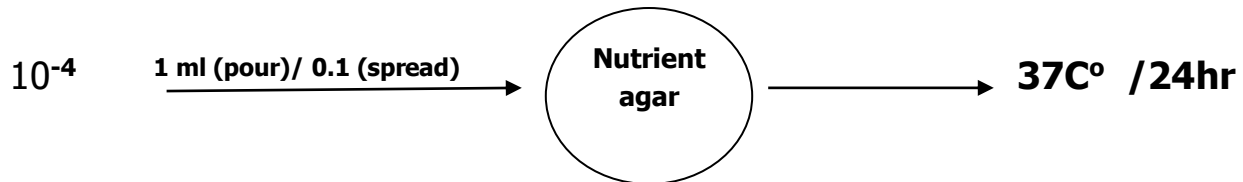


The most important genera of bacteria which contaminate yoghurt:
Coliform , mold & yeast.

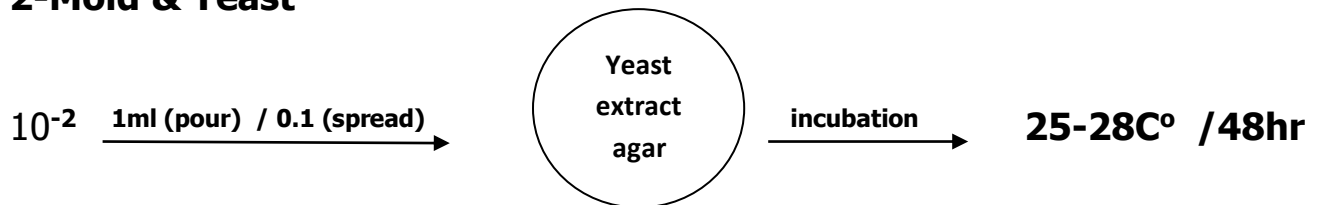
Laboratory tests

*Yoghurt

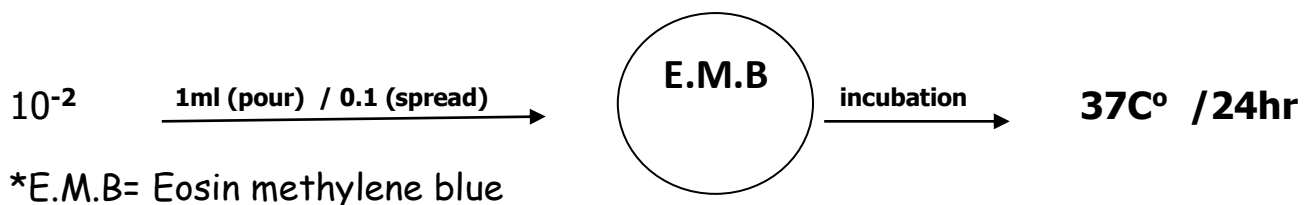
1-General growth (aerobic plate count):



2-Mold & Yeast

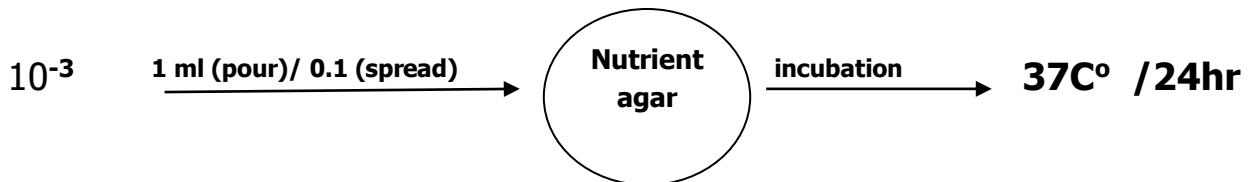
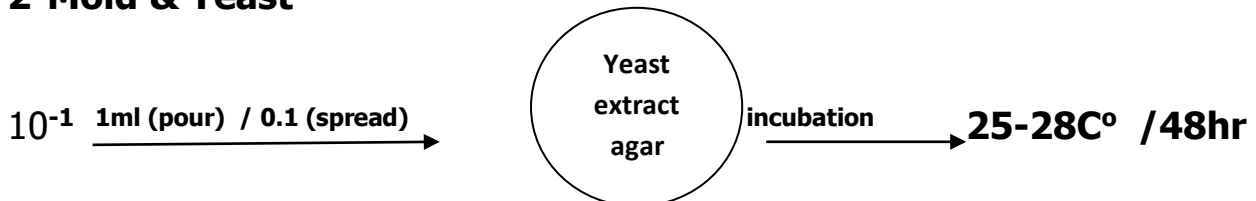
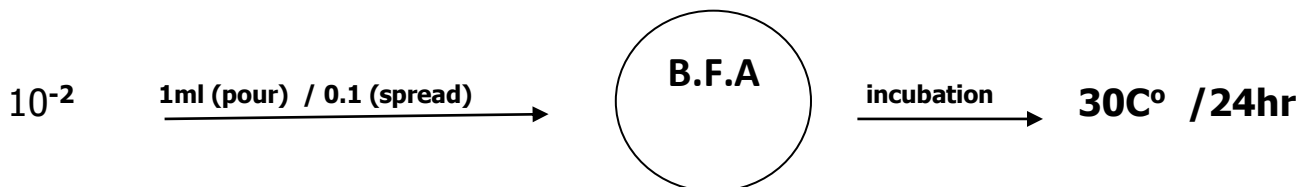


3-Coliform



***Lipid Dairy Product**

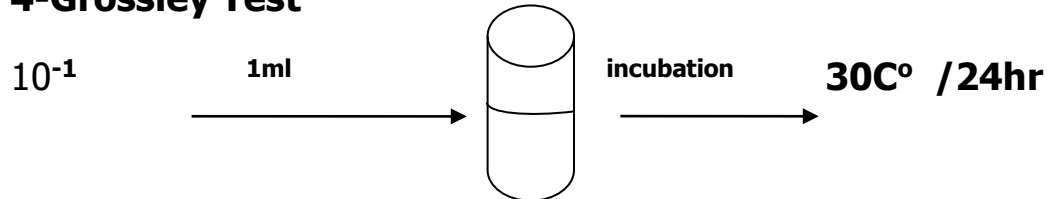
A) Butter: Butter is less spoiled by M.Os because the butter contents of the high concentration lipid. The spoilage occur a result to moisture.

Laboratory tests***Butter****1-General growth (aerobic plate count):****2-Mold & Yeast****3-Detect Of the Lipolytic Bacteria**

***B.F.A**=butter fat agar

Note: After incubation, covered the plate with a solution of copper sulfate CuSO_4 for 5min a period. Then the lipolytic bacteria appear with a halo Bluish green surround of the colonies.

4-Grossley Test



Grossly medium

The reagent (bromocresol purple)

Note: If the presence of microbial contamination in sample, after incubation of the tubes —→ observes the production of acetic acid which changes the medium from the violet to yellow.

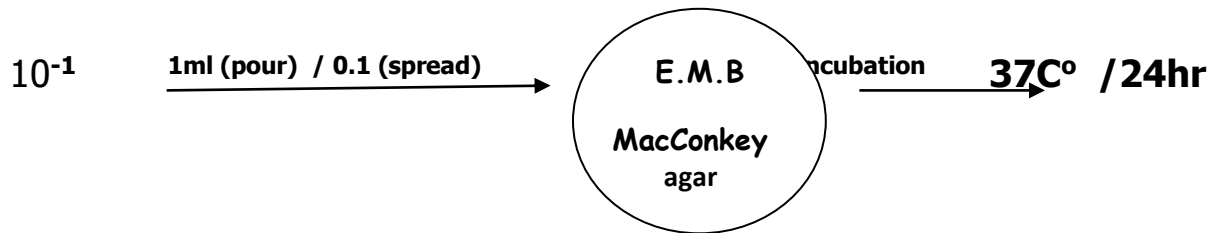
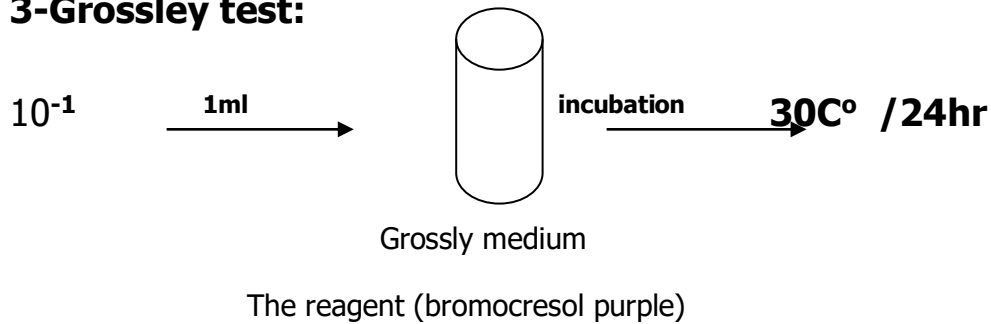
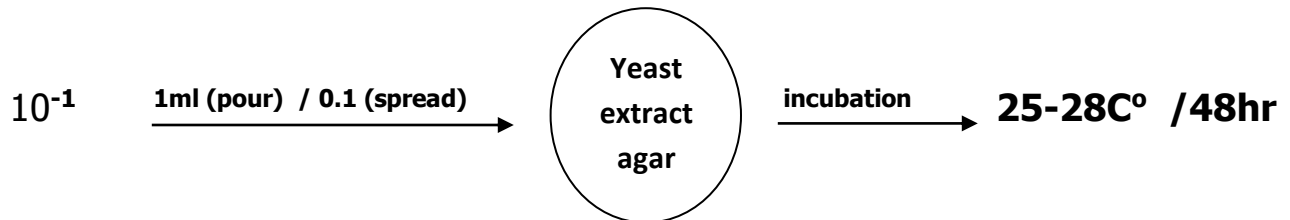
B) cream:

Laboratory tests

*cream

1- General growth (aerobic plate count)



2- Detection of the Coliform**3-Grossley test:****4-mold & yeast****c) Ice cream:****1- General growth (aerobic plate count)**

2- Detection of the Coliform

