

## ACTIVITY 3

# INVESTIGATION OF BACTERIAL CONTENT OF FRESH AND STALE MILK

Gram staining and microscopic examination of stained bacteria and bacteria from prepared slides.

### Requirements:

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| (i) Four nutrient Agar plates   | (ii) Inoculating loop (wire loop) |
| (iii) Fresh milk and stale milk | (iv) Bunsen burner                |
| (v) Indelible marker            | (vi) Incubator set at 35°C.       |

### Theory:

The main purpose of experiment is to determine the effect of leaving milk **unrefrigerated** and conversion into **stale milk**.

### Procedure:

- (i) Place the inoculating loop (wire loop) in the Bunsen burner till red hot and then allow it to become cool.
- (ii) Dip the cool loop in fresh milk.
- (iii) Spread the content of loop over the agar surface present in two covered petri dishes.
- (iv) Mark the plates as X and Y.
- (v) Dip the loop in **stale milk** and spread the material over the agar surface present in another two petri dishes.
- (vi) Label the plates as A and B.
- (vii) Place these four plates in the incubator at 35°C for about 3 days.
- (viii) Observe under microscope.

### Observation:

- The petri dishes containing **fresh milk** show **smaller size** of bacterial colonies, indicates **less number** of bacteria.
- The petri dishes containing **stale milk** show very **large size** of bacterial colonies, indicates that stale milk contains **large number** of bacteria.

### Result and Conclusion:

- **Fresh milk:** Smaller size of Bacterial colonies, less number of Bacteria.
- **Stale milk:** Larger size of Bacterial colonies, more number of Bacteria.