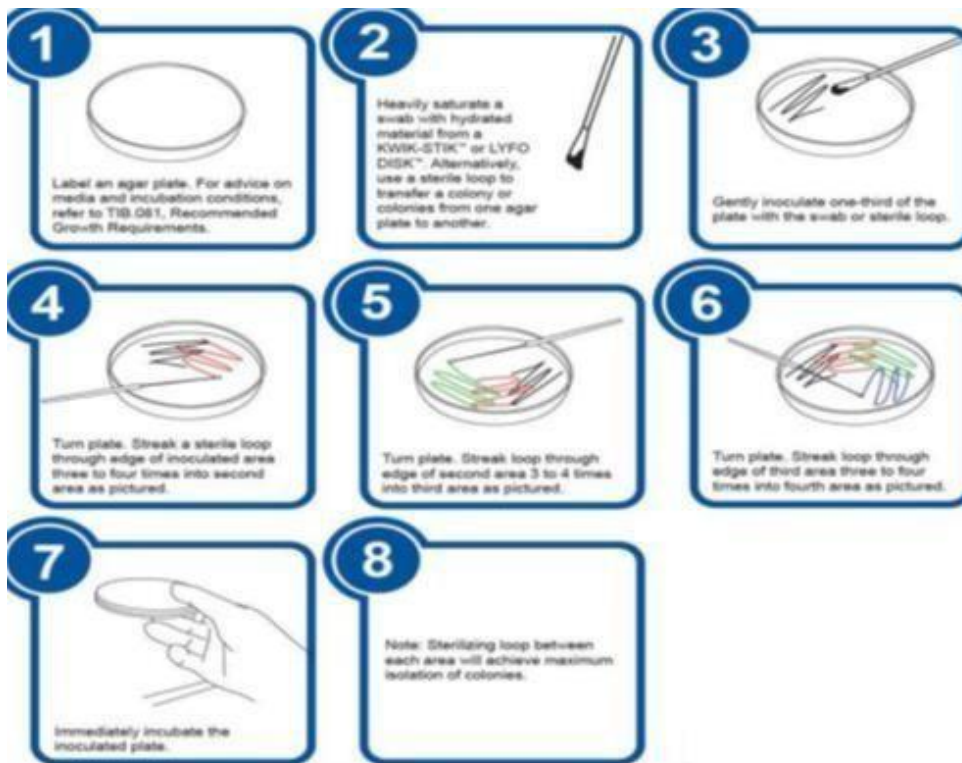
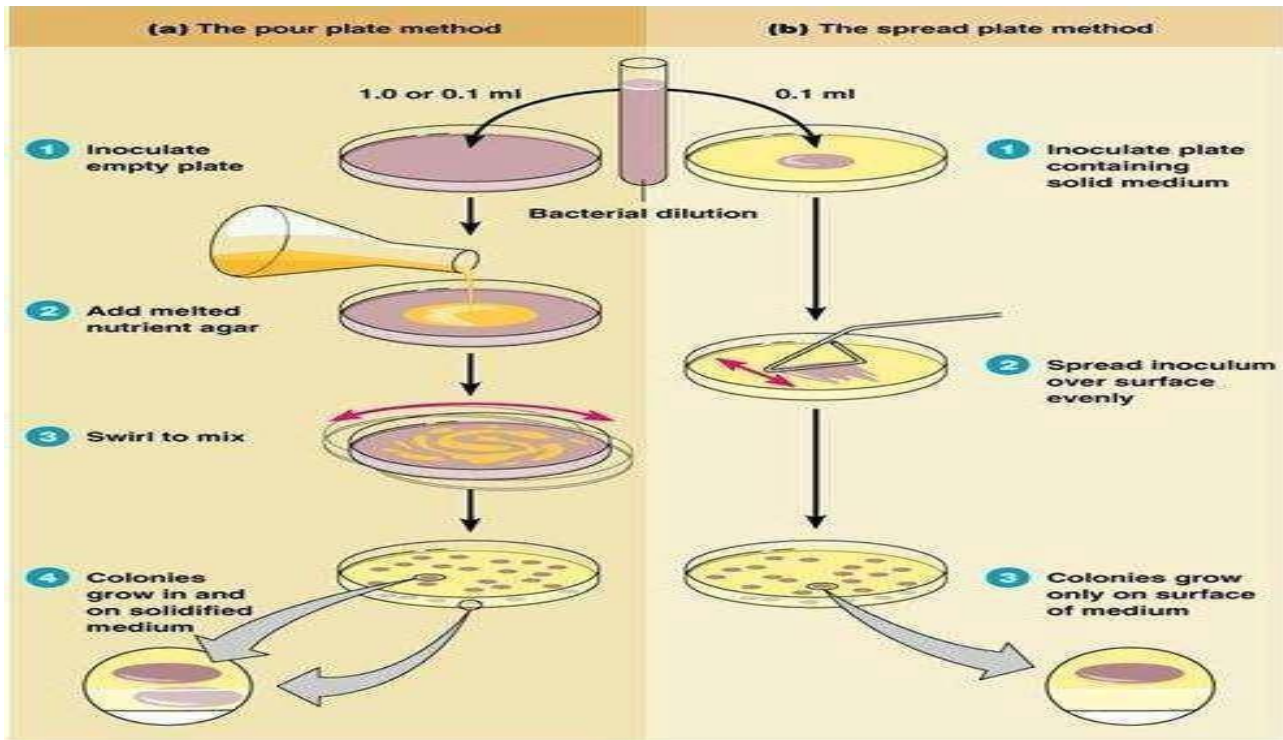


LAB:3 CULTURE METHODS

Indications for culture -

- Isolate bacteria in pure cultures.
- Demonstrate their properties.
- Obtain sufficient growth for preparation of antigens & for other tests.
- Typing bacterial isolates.
- Antibiotic sensitivity.
- Estimate viable counts.
- Maintain stock cultures.



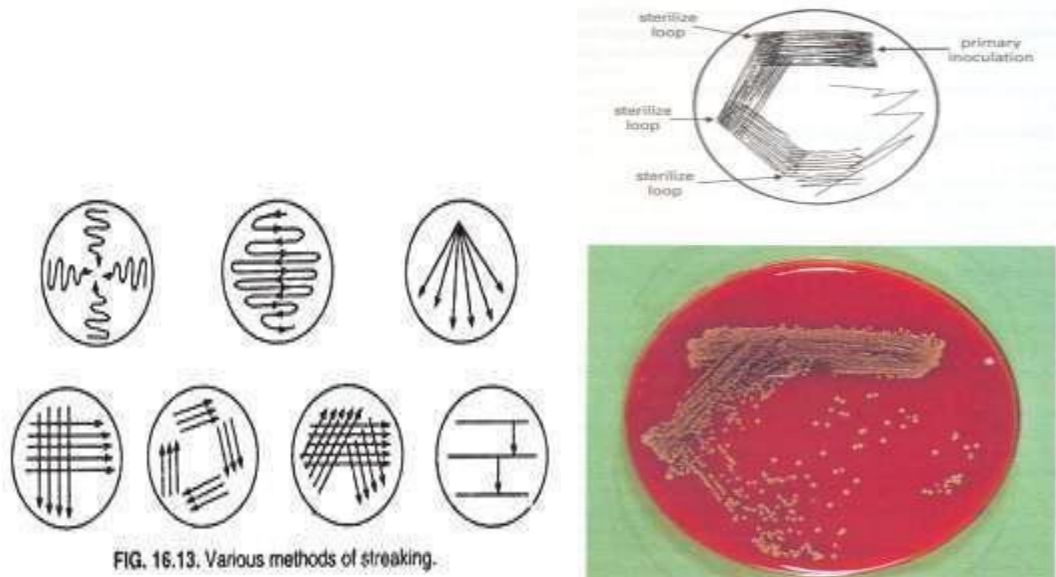


METHODS OF ISOLATION:

- Streak culture or surface plating
- Lawn or carpet culture
- Stroke culture
- Stab culture
- Pour plate method
- Anaerobic methods of culturing bacteria

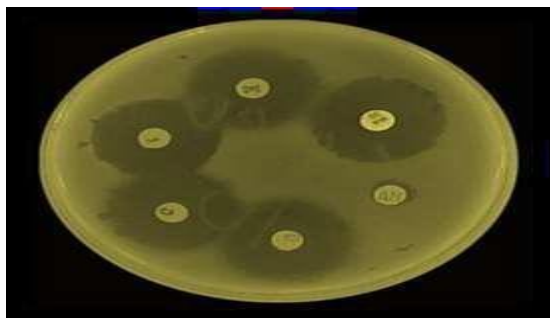
1. Streaking:

- Routinely employed for isolation
- Platinum / Nichrome loops



2. Lawn or Carpet Culture

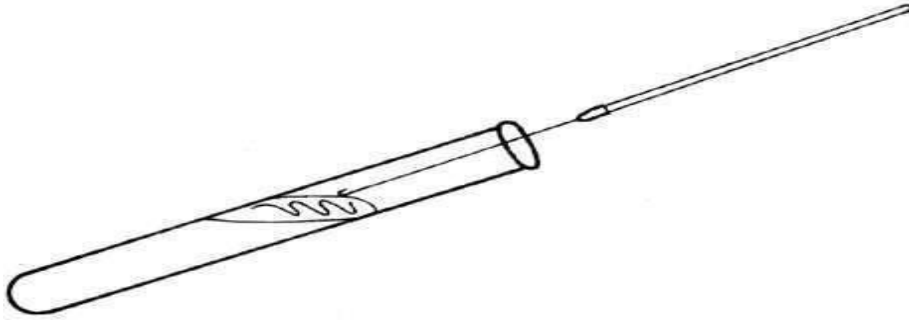
- Uniform surface growth
- Bacteriophage typing
- Antibiotic sensitivity testing
- Preparation of bacterial antigens & vaccines



Antibiotic sensitivity testing

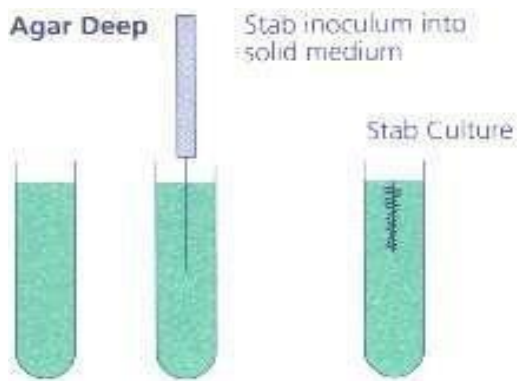
3- STROKE CULTURE

- Tubes containing agar slopes
- For slide agglutination & other diagnostic tests.



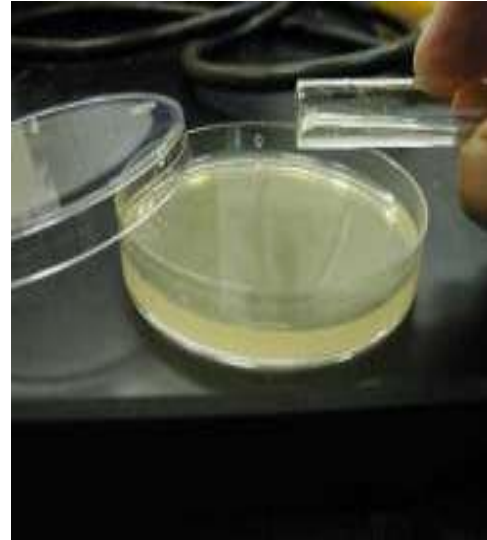
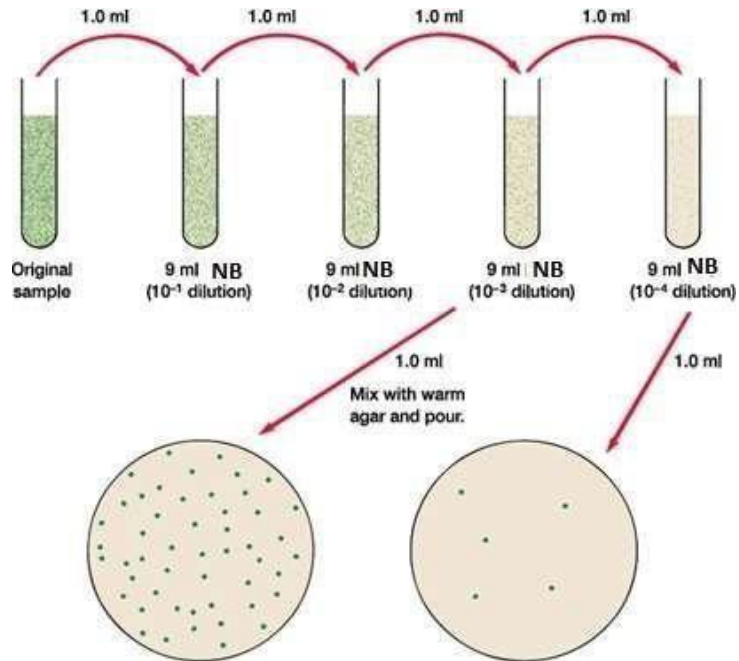
4- STAB CULTURE

- By puncturing a suitable medium with a long, straight charged wire.
- For gelatin liquefaction, stock cultures & motility



5- POUR PLATE METHOD

- 1 ml of appropriately diluted inoculum is added to 15 ml of molten agar and poured on petridish.
- Colonies appear through out the depth of medium.
- Used to estimate viable count, recommended method for quantitative urine cultures.



BROTH/LIQUID CULTURE

- Inoculated by a charged loop, pipette or syringes.
- For blood cultures & sterility testing .



6. ANAEROBIC CULTURE METHODS

Anaerobic condition can be achieved by:

- Cultivation in vacuum
- Displacement of oxygen with other gases
- Chemical or biological methods



- By displacement and combustion of oxygen
- By reducing agents
- Anaerobic chamber

DISPLACEMENT METHOD

- Displacement of O₂ with gases like H₂ , N₂ , He or CO₂ .
- Rarely produces complete anaerobiosis.

e.g. Candle jar



CHEMICAL OR BIOLOGICAL METHODS

- Alkaline pyrogallol (pyrogallic acid in NaOH) absorbs O₂
- Yellow phosphorous
- Rosenthal method - Mixture of chromium & sulphuric acid
- Gaspak

BIOLOGICAL METHODS

Absorption of oxygen from small closed systems has been attempted by incubation along with

- ◆ Aerobic bacteria EXAMPLE:- *Pseudomonas aeruginosa*
- ◆ Anaerobiosis produced by this method is slow and ineffective.