

Practical No. 6

TOOLS USED IN PLANT PATHOLOGY LAB

1. Inoculation loop or Inoculation needle

Used for aseptic transfer of culture. It consists of an insulated handle provided with screw device at the tip which holds a heat resistant nichrome or platinum wire approximately 3 inches long. The end of wire is bent to form a loop. Inoculation needle is similar to loop, but the holder contains a straight piece of wire instead of a loop. They are sterilized by flaming in the blue portion of burner flame until it is red. The loop is mainly used to transfer culture of microorganism growing on liquid cultures. Inoculation needles are used to transfer cultures of microorganisms growing on solid medium in form of colonies.

2. Glass spreader

It is bent T or L shaped glass rod used for spreading of liquid culture and sample on sterile agar plate.

3. Glass marking pen

All the culture material is labelled with the use of Glass marking pen.

4. Petri-dish Cans

It is made of copper and used as container for keeping Petri-dishes. The Petri-dishes in cans are sterilized in hot air oven at required temperature.

5. Glass Ware

Test Tube: a) Test tubes of 18 x 150 mm size are used for preparation of broth, agar slants and agar stabs, b) 25 x 150 mm size are used for preparation of dilution blanks, c) Screw caps tubes with round bottom of size 15 x 125 mm are used for maintenance of culture.

Petri-dishes: Petri-dishes, a pair of circular glass containers named after Petri, are used for the preparation of agar plates. The common size is 100 mm in diameter.

Pipettes, Flask and Beakers: Different sizes of pipette and conical flask are used for preparation of dilutions and plating. Generally pipette of 10 ml and 1 ml are used for sterile transfer of known volumes of liquid. For preparation of dilutions conical flasks of 250, 500 and 1000 ml are used for preparation of medium. The volume of media should not exceed 2/3 of the volume of flask. Beakers of size 250, 500 and 1000 ml are used for preparation of medium.

Durham Tubes: These are small tubes of 3 x 25 mm size used for melting of chemicals during preparation media in broth tubes for observing gas production in various fermentation tests.

INTRODUCTION TO PLANT PATHOGENS

PRACTICALS

Slides and cover slips: Rectangular slides of 75 x 25 mm size made of glass with polished edge are used for observation of microorganisms. Square or circular cover slips of size 18x18mm or 20 mm diameter are used for covering the specimen glass slide while observing under high power objective of a microscope. The thickness of cover slip shouldn't exceed 0.016 mm.

Cleaning of glass ware: All the glass ware before put to use for microbiological work should be cleaned with a detergent (chromic acid mixture) followed by thorough wash with clean water and distilled water. All the used glassware with cultures have to be autoclaved before subjecting to further cleaning with detergent.

Glassware to be cleaned should be left in the chromic acid mixture over night and later repeatedly washed in running water to remove traces of detergent.

Exercise: Get acquainted with handling and use of instruments and apparatus which are commonly used in a plant pathology laboratory.