

INTRODUCTION TO PLANT PATHOGENSPRACTICALSPractical No. 3**ACQUAINTANCE WITH PLANT PATHOLOGY LABORATORY AND EQUIPMENTS**

The student should to get acquainted with the chemicals glassware and equipments of the plant pathology laboratory listed below.

INSTRUMENTS

1. Pressure cooker: It is a suitable alternative to an autoclave. Some labs will have a big size pressure cookers implanted with a pressure gauge. In case of power failure materials are sterilized in pressure cooker.

2. Hot air oven

It is an electrically operated equipment with a thermostat (ambient Temp, to 300°C) used for sterilizing glassware. An oven consists of an insulated cabinet, which is held at a constant temp, by means of an electric thermostat. Some ovens are also fitted with fan to keep hot air uniformly circulated at constant temperature. For proper circulation of hot air, the shelves are perforated. The scheduled temperature for sterilization with dry air is given in table.

Temperature (°C)	Time in Minutes
120	480
140	180
150	150
160	120
170	60
180	20

3. Incubator

It is used for incubation (culturing of microbes) at a constant temp. It is similar to an oven in construction and consists of an insulated cabinet fitted with a heating element at the bottom. The temp, of the incubation is maintained at desired level (ambient to 110°C) by an automatic device called thermostat. It is provided with double doors, made of glass so that the contents of incubator maybe viewed without admitting outside air. Most incubators can be supplied by placing a beaker of water in it to retard the dehydration of medium during growth of micro organisms. Some incubators are provided with fluorescent light that can be used to encourage sporulation.

Temperature and humidity control chamber: In this one can adjust both temperature and humidity.

4. Colony counter

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It is an electronic apparatus used to count the number of colonies on a Petri plate. A Petridis fits into the recess in the platform. The colonies on plates are counted on an illuminated screen, illuminated from beneath with a large magnifying lens which provides 1.5X magnification. Some instruments are also fitted with electronic micro

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switch with pen and counter. The counter bar is depressed and the number of colonies is instantly displayed on digital read out.

5. Inoculation chamber

Most of the aseptic transfers are made using inoculation chamber made of wood. Now-a-days laminar airflow system is used as inoculation chamber. It is used for reducing danger of infection while working with infective microorganisms and for preventing contamination of sterile materials. It is a hood like structure having germicidal ultraviolet lamp and Bunsen burner. It consists of mid table as working place onto which sterile air is pumped at uniform velocity either in horizontal or vertical direction. It works on the principle of application of high efficiency particulate filters (HEPA)-or fibre glass filter which can retain all particles including bacteria whose diameter is more than 5 microns.