JSS MAHAVIDYAPEETHA

JSS COLLEGE OF ARTS, COMMERCE & SCIENCE
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DEPARTMENT OF BOTANY- UG

4.4.2 Standard operating procedures for Botany Laboratory equipments

1. Microscope

Connect the Plug to the socket and turn on the in-built base illuminator

- Raise the nosepiece using the coarse adjustment knob.
- Nosepiece is rotated, so that the 10X objective is in operating position.
- Diaphragm is opened as per the necessity, approximately half way.
- Carefully Place the permanent slide / slide with sample in the stage slide holder.
- Switch on the LED light observe through the eye piece by moving smooth adjustment knob Adjust by moving until clear picture/image is seen
- Image should be observed by two eyes.

2. Glassware

- Thermo-protective gloves or appropriate tongs are used while handling hot glassware.
- Use cotton while fitting physiology apparatus like glass with bulbs etc., into the stand or into rubber stoppers.
- Clean the glass wares carefully by wearing gloves and use appropriate cleansing solution
- Dispose the broken glass wares carefully in a sealed cardboard or cover with a label as "Broken glass"

3. Refrigerator

- Always take care of power supply to the refrigerator
- Main power supply is always in on except during cleaning
- Adjust the temperature as per the usage in the knob given inside the refrigerator.
- Keep/store the required things like plants and it's parts, cultures, chemicals as per the lab usage on the racks, chill box, trays
- Clean the refrigerator frequently atleast one in a month by switching off the power supply
- Open the refrigerator and remove all the things inside on the racks etc,.
- Clean with wet cloth of disinfectant Dettol.

4. Laminar air flow chamber

Cleaning

- Switch off the power supply and disconnect
- Use 70% alcohol to clean the outer surface and working bench of laminar air flow chamber

Operating method

- Switch on the power supply & switch on the main switch of the cabinet
- Check the Laminar air flow chamber pressure in the monometer (Limit 10 to 20 mm of water gauge) by switching on the air flow.
- Switch on the UV lamp half am hour before starting the work. UV lamp burning hour should not exceed 90 percent prescribed by the manufacturer
- Switch off the UV lamp after half an hour
- Switch on the visible light and again use 70% alcohol to clean the working bench.
- Carry out the necessary work

5. Incubator

Cleaning

- Switch off the power supply and disconnec
- All the plates and trays of the racks are removed and keep in a safer place
- Use 70% alcohol to clean the Inner and outer surface and keep all the plates and trays of the racks back into the incubator. Atleast clean incubator twice in a month

Method of usage

- Switch on the power supply & switch on the main switch of the incubator
- Set the desired temperature as per the necessity
- Open the main door and lead of the incubator
- Keep the incubating things like test tubes, petriplates, conical flask with media in the incubator. Close the door and lead.
- Twice a day set temperature of the incubator has to be monitored

6. Museum specimens

- Clean the specimen bottle/jar by using cleaning agent.
- Fill the bottle/jar with the specimen and add diluted formaldehyde solution in 7 water : 3 formaldehyde or 8:2 ratio
- Since plant specimens are delicate , periodically fresh specimens have to be collected and stored as per the above.
- Keen observation and good maintenance help to retain the Specimens

7. Chemicals

- Usage of chemicals as per the necessity of experiments.
- Take precautions during the usage of chemicals.
- Few Chemicals are used in Botany laboratory in dilute conditions which are normally harmless.
- Chemicals used in experiments are consumed completely.
- Disposal of chemicals is not a big issue in Botany laboratory.

8. Pressure cooker

- Pressure cooker is used for wet sterilization.
- Fill the bottom of the cooker while using with 2 inches water and keep bottom plate.
- After sterilization remove the water from the cooker to keep it in a good condition
- Above the plate, Conical flasks or bottles of agar should be filled to no more than 2/3, plugged with non-absorbent cotton wool plugs covered loosely with aluminium foil or greaseproof paper to
- Prevent the plug from becoming wet. Lids on bottles should be loosened by ¼ turn.
- Forceps and other instruments should be wrapped loosely in aluminium foil or
- Greaseproof paper to permit the penetration of steam into the pack.
- Close the lid with suitable gasket. And insert the whistle to the vent above the lid
- Allow the cooker to whistle for 2 to 3 times
- Do not open the lid of the pressure cooker while it is operating.
- After sterilization, make sure the pressure is down to zero before opening
- Avoid touching the inner chamber surfaces.
- Repair and servicing of pressure cookers should be done by trained persons.