Collection and preservation of diseased plant specimen

Collection: The process of collecting someone or something

Objectives of Collection:

I. For immediate and future laboratory study
II. To send the specimen to the specialist for identification.
III. To preserve the diseased specimen in the museum for future records and demonstration purposes.

Equipment's required:

I. Collection bags (wax paper bag or plastic bag)
II. Hand lens
III. Vasculum or collecting can
IV. Pruning shears
V. Sharp knife
VI. Small saw
VII. Mechanical digger
VIII. Forceps
IX. Pencil
X. Practical note book etc.

Points to be considered during collection:

i) Collection should be adequate in number and quantity.

ii) The collected material should include the whole plant or several plants or the plant parts such as leaf, stem or root etc.

iii) The specimen should be the typical of the disease.

iv) The specimen should not be completely dead or decayed.

v) One or more healthy plants or plant parts should be collected along with the diseased specimens for comparison.

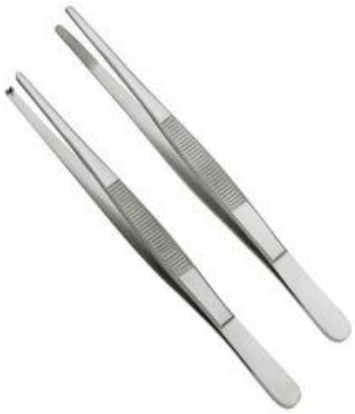
vi) The specimen should be kept moist preferably in refrigerator until examine.

vii) Dirty specimens should be cleaned by washing.

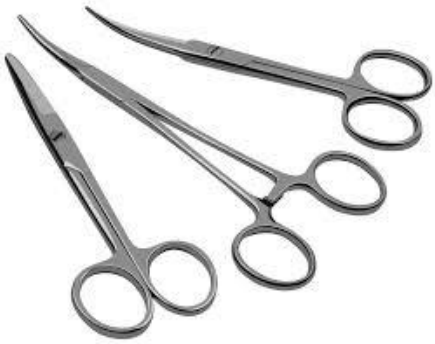
viii) Each collection should have a slip of paper bearing the collection number, date, place, name of host and any other related field information.

ix) If the specimens are to be sent to the specialist, they should be wrapped with moist paper, slipped at once and delivered immediately. A letter describing the field observation should accompany the specimen.

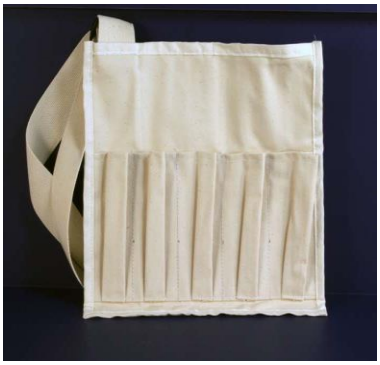
A. Lense



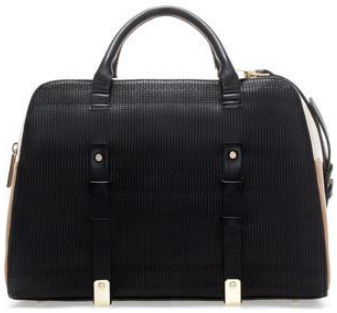
B. Focep



C. Scissors



D. collecting bag



E. Vasculum

F. plant press

2. PRESERVATION

Preservation is generally done either in both dry and wet condition.

A. Dry preservation:

i) Diseased leaf and small stems are usually dried in a plant press and mounted on herbarium sheets or may be kept in paper bag or box and stored in cool and dry chamber.

ii) Larger portion of stems or roots may be partially dried and each portion can be wrapped in suitable paper container.

iii) Accurate and detailed labeling should be done. The label should indicate the host, parasite, place and date of collection, and condition of locality and name of collector.

iv) Insect damage of dry herbarium should be avoided.

B. Wet preservation:

General preservative for museum specimen are-

a) Formaldehyde solution- 5% formaldehyde solution in water.

b) Formaldehyde alcohol solution (F.A. soluton)

Formaldehyde (40%) --------- 25 ml,

Ethyl alcohol (95%) ----------150 ml and

Water ----------825 ml.

c) Formaldehyde aceto alcohol solution (F.A.A. solution)

Formaldehyde (40%) -------50 ml,

Glacial acetic acid ----------50 ml and

Alcohol (50-70 %) ----------900ml.

C. Preservation for retaining green color:

Green plant specimens are boiled in a mixture containing one part of glacial acetic acid (50%) saturated with normal copper acetate crystals and four parts of water. First, the materials become cleared and its color reappeared within a few minutes. The treated specimen will then to be rinsed with water and preserved in 5% commercial formaldehyde in specimen jars with air tight lids.