

3rd SEMESTER

SKILL ENHANCEMENT COURSE (BOTANY)

BO318S: MEDICINAL BOTANY

CREDITS: THEORY-2, PRACTICALS-2

THEORY (2 CREDITS)

UNIT 1: INTRODUCTION AND SCOPE

- Introduction & scope of medicinal Botany.
- Some common herbal practices used to cure – fever, worms, diarrhea, cough & cold, Arthritis & rheumatism, stone in urinary tract, eczema or fungal infections.
- Cultivation technology (nursery raising, cultivation, inter-culture and fertilizers, pests & diseases, harvesting & profits) for some economically important medicinal plants – *Lavendula*, *Aloe vera*, *Rosemerry*, and *Podophyllum hexandrum*
- Applications of Green House Technology

UNIT 2: MEDICINAL PLANT CONSTITUENTS AND CONSERVATION

- Plant secondary metabolites of medicinal importance – Alkaloids, glycosides, mucilages & sterols (Brief account).
- Sources and uses of Morphine, Atropine, Codeine & Ephedrine in modern medicine.
- Chemicals constituents & Traditional uses of some medicinal plants of Kashmir Himalaya – *Aconitum heterophyllum*, *Artemisia absinthium*, *Fritillaria roylei* & *Crocus sativus*
- Concept of IUCN, Red Data Book, threat categories Concept of IUCN, Red List criteria, threat categories; Conservation of medicinal plants, (*In-situ* and *Ex-situ* conservation methods); Conservation through cryopreservation

PRACTICAL WORK (2 CREDITS):

1. Study the botanical features of some medicinally important plants-*Artemisia absinthium*, *Lavendula* & *Datura stramonium*.
2. Microscopically study the mucilage from the seeds of *Ocimum* and *Cydonia*.
3. Detection of alkaloids through Alkaloid colour reagent/alkaloid precipitants from some common plants.
4. Detection of glycosoids, tannins, saponins, steroids through the colour reagents.
5. Detection and extraction of oils from some plants through colour reagent or any other method.
6. Preparation and compilation of medicinal plant inventory (with photographs) of some local medicinal plants by each student.
7. Study the distribution of oils using Sudan IV stain in the seeds of *Brassica campestris*, *Sesamum indicum* & *Prunus amygdalis*.
8. Visit to IIM institutes to make students aware about the extraction processes.

SUGGESTED READINGS

1. Economic Botany, Rashtia Vardhna, Sarup Book Publishers, New Delhi.
2. Indigenous Herbal Medicines, tribal formulations and traditional herbal practices; Deepak Aharya and Anshu Srivastava; Avishkar publication, India.
3. Glossary of Indian medicinal plants, R.N. Chopra, S.L. Nayar, and I. C. Chopra, 1956. C.S.I.R., New Delhi.
4. Medicinal plants: Ethnobotanical approach, Trivedi P C. 2006. Agrobios, India.
5. Medicinal plant cultivation: A scientific approach, 2nd ed. Purohit and Vyas, 2008. Agrobios, India.