

DEPARTMENT OF BOTANY

SYLLABUS FOR VALUE ADDED COURSE (UG LEVEL)

MEDICINAL BOTANY



RAMA DEVI WOMEN'S UNIVERSITY
Vidya Vihar, Bhubaneswar-751022

Signature

Signature

Head of the Dept. Botany
R.D. Women's University
Bhubaneswar

Signature
Controller of Examinations
R.D. Women's University
Bhubaneswar

MEDICINAL BOTANY

Course Objectives (CO):

- CO1:** To acquaint the students about medicinal plants and their economic importance.
CO2: To know about Ayurveda, its history and origin.
CO3: To know about endemic and endangered plants and various ways of in-situ and ex-situ conservation.
CO4: To learn about the propagation of medicinal plants.
CO5: To be aware of ethno-botany and folk medicine and use of it by ethnic communities of India.
CO6: To learn the application of natural products on certain diseases.

Unit 1:

History, Scope and Importance of Medicinal Plants. Indigenous Medicinal Sciences; Definition and Scope-Ayurveda: History, origin, panchamahabhutas, saptadhatu and tridosha concepts, Rasayana, plants used in ayurvedic treatments, Siddha: Origin of Siddha medicinal systems, Basis of Siddha system, plants used in Siddha medicine. Unani: History, concept: Umoor-e- tabiya, tumors treatments/ therapy, polyherbal formulations.

Unit 2:

Conservation of endangered and endemic medicinal plants. Definition: endemic and endangered medicinal plants, Red list criteria; In situ conservation: Biosphere reserves, sacred groves, National Parks; Ex situ conservation: Botanic Gardens, Ethnomedicinal plant Gardens. Propagation of Medicinal Plants: Objectives of the nursery, its classification, important components of a nursery, sowing, pricking, use of green house for nursery production, propagation through cuttings, layering, grafting and budding.

Unit 3:

Ethnobotany and Folk medicines. Definition; Ethnobotany in India: Methods to study ethnobotany; Applications of Ethnobotany: National interacts, Palaeo-ethnobotany. folk medicines of ethnobotany, ethnomedicine, ethnoecology, ethnic communities of India. Application of natural products to certain diseases- Jaundice, cardiac, infertility, diabetics, Blood pressure and skin diseases.

SUGGESTED READINGS

1. Trivedi P C, 2006. Medicinal Plants: Ethnobotanical Approach, Agrobios, India.
2. Purohit and Vyas, 2008. Medicinal Plant Cultivation: A Scientific Approach, 2nd edn. Agrobios, India.

DEPARTMENT OF BOTANY

SYLLABUS FOR VALUE ADDED COURSE (UG LEVEL)

BIO-FERTILIZERS



RAMA DEVI WOMEN'S UNIVERSITY
Vidya Vihar, Bhubaneswar-751022

Mohanty

S. S. S. S.
Head of the Dept. Botany
R.D. Women's University
Bhubaneswar

M. S. S. S.
Controller of Examinations
R.D. Women's University
Bhubaneswar

BIO-FERTILIZERS

Course Objectives (CO):

CO1: Creation of skilled human resources and providing employment.

CO2: Shifting from handy chemical fertilizer to bio fertilizer.

CO3: Overall improvement of the environment.

CO4: Dissemination of knowledge for bio fertilizer production techniques and production in home and selling

CO5: To be aware of mycorrhizal associations and its influence on growth of crops

CO6: It offers several business opportunities to those who are trained in horticulture.

Unit 1:

Organic farming – Green manuring and organic fertilizers, Recycling of bio degradable municipal, agricultural and Industrial wastes – bio compost making methods, types and method of vermicomposting – field Application.

Unit 2:

General account about the microbes used as biofertilizer: Rhizobium, Actinorrhizal symbiosis, *Azospirillum*, *Azotobacter*: classification, characteristics – crop response to *Azotobacter* inoculum, maintenance and mass multiplication. Cyanobacteria (blue green algae): *Azolla* and *Anabaena azollae* association, nitrogen fixation, factors affecting growth, blue green algae and *Azolla* in rice cultivation.

Unit 3:

Mycorrhizal association: types of mycorrhizal association, taxonomy, occurrence and distribution, phosphorus nutrition, growth and yield – colonization of VAM – isolation and inoculum production of VAM, and its influence on growth and yield of crop plants.

SUGGESTED READINGS

1. Vayas, S.C, Vayas, S. and Modi, H.A. 1998 Bio-fertilizers and organic Farming Akta Prakashan, Nadiad
2. John Jothi Prakash, E. 2004. Outlines of Plant Biotechnology. Emkay Publication, New Delhi.
3. Sathe, T.V. 2004 Vermiculture and Organic Farming. Daya Publishers.
4. Subha Rao, N.S. 2000, Soil Microbiology, Oxford & IBH Publishers, New Delhi.