

SRI KRISHNADEVARAYA UNIVERSITY: ANANTAPUR
DEPARTMENT OF SERICULTURE

CURRICULUM FOR B.Sc Z.S.C (Zoology, Sericulture & Chemistry) COURSE
(SEMESTER PATTERN)

(Effective from the Academic Year 2015-2016)

B.Sc ZSC II Semester

60 Hours

Paper -2 CYTOGENETICS, BREEDING, BIOTECHNOLOGY, PATHOLOGY OF
MULBERRY AND RESOURCE MANAGEMENT FOR MULBERRY CROP
IMPROVEMENT

Unit 1: **EMBRYOLOGY:** 10 hrs

1.

Unit 2: **CYTOLOGY, GENETICS, BREEDING OF MULBERRY:** 13 hrs

1. Cytological aspects of Mulberry;
2. Brief account of Mendelian genetics, selection, scope and methods.
3. Collection and maintenance of Germplasm Bank.
4. Breeding of Mulberry;
5. Plant introduction and acclimatization.
6. Hybridization- Scope, application and limitations
7. Polyploidy- Euploidy, Aneuploidy, Introduction of Polyploidy and their significance.
8. Mutations-Natural, Induced-Techniques, applications, Limitations.

Unit 3: **BIOTECHNOLOGY IN MULBERRY:** 13 hrs

1. Introduction and Scope of biotechnology in mulberry improvement
2. Biofertilizers –Bio-fertilizers and their application in mulberry cultivation, methods of application, scope and limitation.
3. VermiTechnology.
4. Mulching: Mulches and their significance in soil conservation.
5. Tissue Culture – Tissue culture techniques in mulberry anther/ pollen culture, callus culture, somoclonal variants, somatic, hybrid in *in vitro* screening, cryopreservation.

Unit 4: **DISEASES & PESTS OF MULBERRY, INTEGRATED PEST MANAGEMENT**
(IPM): 14 hrs

1. Introduction to Plant diseases

1. Foliar Diseases- A. Powdery mildew; B. Rust; C. Leaf Spot; D.Tukra.
2. Stem Diseases- A. Trunk rot; B. Dogare blight; C. Dwarf; D.Stem Canker
3. Root Diseases- A. White root-rot; B. Violet root-rot C. Root-Knot.
4. Prevention and Control of Mulberry Diseases

2. Pest Attack on Mulberry:

1. Identification of different types of leaf eating caterpillars, Jassids, Mealy Bugs, Thrips, Scale Insects, Beetles, Nature of damage, Preventive and control measures.
2. Common Pesticides, Chemical nature, Mode of action.
3. Integrated Pest Management methods.

Unit 5: **RESOURCE MANAGEMENT & ECONOMICS OF MULBERRY** 10 hrs

1. Water management and Watershed management concept – significance of water recharging technologies.
2. Intercropping and uses for soil management.
3. Economics of mulberry cultivation
4. Bye – products of mulberry and their industrial use

PRACTICALS

45 Hours

1. Identification of different mulberry genotypes
2. Bio – Fertilizers – Identification, Preparation of panchagavya & Jeevamrutha.
3. Vermin Technology
4. By – Products of Mulberry and their utilization – Fruit jam preparation
5. Identification of mulberry diseases and pests Identification,
6. Submission of Herbarium Sheets