

## **AGRICULTURE**

### **MANAGEMENT SYSTEMS FOR SUSTAINABLE AGRICULTURE**

#### **POST GRADUATE DEGREE STANDARD**

**PAPER -I CODE:011**

#### **UNIT I**

Weather and crop production - Agro-ecological zones and geographical distribution of crop plants in Tamill Nadu. Cropping systems - different types and their importance in food production- Package of practices followed for major crops and cropping systems in Tamil Nadu.

#### **UNIT II**

Water Management - Integrated water management - common area management-Different efficiencies in irrigation management-Irrigation management under constraints of irrigation water. Weed management- Important weeds and their distribution in Tamill Nadu-Integrated weed management.

#### **UNIT III**

Tillage and Dry land agriculture - Tillage Management under wet and dry land agriculture water harvesting techniques - Technologies for increasing agricultural production in rainfed agriculture. Agroforestry-Waste land development - Problems and Prospects in Tamilnadu - Farm forestry Agroforestry Social forestry, Natural forestry.

#### **UNIT IV**

Soil types of Tamilnadu and their important Physico-chemical properties and their management-problem soils - management-soil fertility management Integrated Nutrient management.

#### **UNIT V**

Seed production in Vegetatively propogated crops - Seed processing - Dormancy Seed treatment - Seed pelleting - Seed Certification Certified seed production -Seed Act, New seed policy-seed storage-seed industry-Management of Physiological disorders in crop plants.

#### **UNIT VI**

Germplasm-crop genetic resources-Mass selection-Hybridization and selection Mutation breeding- Production technologies for ornamentals, vegetables,fruits, spices,Plantation crops,indoor and Medicinal plants - Role of growth regulators in vegetables and fruit production.

#### **UNIT VII**

Pest - Definition - categories of pests-pest control - natural, artificial-pest management IPM - IPM for important pests and nematodes - Role of parasites, predators,pathogens (NPV,Bt,Fungus) in IPM - store grain pest management.

#### **UNIT VIII**

Disease - Surveillance - Assessment and forecasting integrated disease management for important plants - Role of antagonistic organisms. Biotechnological approaches in disease Management.

#### **UNIT IX**

Farming systems-Integrated farming systems Farm planning and budgeting. Farm business management - farm management-principles and decision making Management of resources - land, labour, capital and

machinery. Farm financial management - Agricultural marketing management - world trade concept economic liberalisation - GATT.

#### UNIT X

Use of modern agricultural information systems - Transfer of technology - importance in agricultural development - Principles of farm journalism - participatory technology development - Role of women in agriculture.

### PAPER -II

#### **ORGANIC AGRICULTURE AND COMMERCIAL AGRICULTURE**

##### UNIT I

Green revolution in India - After effects - Definitions of Natural Farming, Traditional farming - Their concepts and scope - Natural Farming - Institutions- their activities and role.

##### UNIT II

Environmental problems in developing countries - conflict between technology and environmental protection.

##### UNIT III

Pesticides consumption and hazards - emerging trends in their use.

##### UNIT IV

Role of biopesticides - Botanicals, Microbials, Pheromones, Parasitoids and predators in IPM.

##### UNIT V

Role of biofertilizers in IPM.

##### UNIT VI

Organic farming - concept and relevance in the present day agriculture - problems and remedies - Encouragement and dissemination for effective practicing of organic farming.

##### UNIT VII

Production and marketing of important biocontrol agents - Egg, larval and pupal parasitoids, Predators and Pathogens (NPV, BT, Fungus) - Antagonistic fungi (Trichoderma).

##### UNIT VIII

Production and marketing of important biofertilizers -production of mushrooms.

##### UNIT IX

Production Technology for important flower crops - vegetables and tree crops -Landscaping, Ornamental gardening - Biotechnology - Transgenic plants.

##### UNIT X

Agriculture and Sericulture.