

Agriculture

DEGREE STANDARD

CROP IMPROVEMENT AND CROP PROTECTION

CROP IMPROVEMENT:

General Principles of breeding - breeding methods - selection of crop varieties - Modern tools in crop improvement - Hybrid production in Tamil Nadu.

Application of biotechnology in Agriculture - Tissue culture and its importance - Transgenic plants.

HORTICULTURAL CROP IMPROVEMENT

Physiological disorders in crop plants and their management - use of growth regulators in Agriculture and Horticulture - Drought tolerance mechanisms in crop plants and their management.

Seed - importance of quality seeds in Agriculture - Methods of seed production including hybrid seed production - Seed certification techniques and seed certification processes in Tamil Nadu - Seed testing - Seed villages

CROP PROTECTION:-

Pests and disease surveillance and forecasting - effect of weather on pests and disease incidence - knowledge about important pests and diseases of Agricultural and Horticultural crops of India and Tamil Nadu - Symptoms and damages of pests and diseases and their management - Economic threshold levels and economic injury levels for major pests and diseases.

Integrated pest and disease management in Agricultural and Horticultural crops.

Pests and diseases of store grains - symptoms, damage and their management - vector borne diseases and their management.

Pesticides - insecticides, fungicides, rodenticides, nematicides - mode of action - LD 50 - residues in soil, water and plants - safety precautions in the usage of pesticides - plant protection equipments - aerial spraying - legal control of pests - phytosanitary certificate.

Weeds - classification - important weeds in Agricultural and non-agricultural areas - weed control - methods - Integrated weed management - herbicides - classification - mode of action - herbicide residues.

PAPER -II

Crop production and Agricultural Development Processes

Crop Production:

Weather and Climate - vagaries of weather - measurement of weather factors - effect of weather factors on crop production - different agroclimatic zones of India and Tamil Nadu.

Soils of Tamil Nadu - classification - suitability of different soils for different crops - soil sampling, soil and tissue testing and its importance in crop production - maintenance of soil organic matter - management of problem soils - importance of soil fertility management.

Nutrients - macro and micro nutrients - secondary elements - their balanced usage - manures, fertilizers, green manuring - biofertilizers - fertilizer control order - fertilizer recommendation for different crops and fertilizer use efficiency - integrated nutrient management.

Agriculture

Package of practices for important crops - cereals, pulses, oilseeds, fibre crops, sugar crops, tuber crops, fruits, vegetables, spices, narcotics, plantation crops, flower crops.

Dry farming - rainfed agriculture - conservation of soil and water - water harvesting techniques - importance of tillage - drought tolerant varieties and seed hardening - rainfall distribution and dry land agriculture in Tamil Nadu.

Water management - quality parameters of irrigation waters - irrigation methods - sprinkler and drip irrigation - water potentials - water use and water resource development and utilisation in Tamil Nadu - Water use efficiency - irrigation management for different agricultural crops in Tamil Nadu - different command areas and their management in Tamil Nadu.

Farming systems - different types - cropping systems and cropping schemes - management of monetary and non-monetary inputs - integrated farming systems - recycling of agricultural wastes - mushroom cultivation, agro industries, silkworm rearing, Bee keeping, poultry, goat rearing - agro forestry.

Energy in agriculture production - conventional and non conventional energy sources - renewable and non renewable energy - solar, wind, animal, biomass energies and biogas.

Agricultural Development Processes: Importance of Agriculture in Indian economy - Land - size and distribution of holdings and land use pattern in Tamil Nadu - demand and supply of labour - farm mechanisation - agricultural credit systems in India and Tamil Nadu - agricultural marketing and pricing policy of agricultural commodities - agri business activities - global trade policies - World Trade Organisation.

Extension methods - farmers' participation in agriculture - Tamil Nadu women in agriculture - Experimental techniques in farmers holdings - different types of demonstration - modern information technology.