

HORTICULTURE

POST GRADUATE DEGREE STANDARD

PRINCIPLES OF HORTICULTURE

Scope and importance of horticulture in the economy of India and Tamil Nadu - Horticultural geography (regions and zones)-Role of climate, Soil and water in relation to horticultural crop production - Integrated nutrient management (INM), Integrated, management of pests and diseases, Management of water, weeds, mulches, pruning and training.

Crop systems - protected cultivation - off season production - crop manipulation - Hydroponics - Nutrient Film Technique - Crop forcing - use of growth regulators.

Environmental Horticulture - Commercial Horticulture - organic Horticulture.

Advances in conventional plant propagation - Mist propagation - Micro propagation.

Role of bio-technology in crop improvement and rapid clonal propagation in horticultural crops.

Breeding systems and methods in Vegetatively and Sexually propagated crops - Breeding for hybrid vigour, processing and resistance to biotic and abiotic stresses - Mutation and polyploidy breeding - somaclonal variation and its application - development of haploids - protoplast fusion - somatic cell fusion - in vitro mutation - transgenic plants.

Landscaping designs for house gardens, institutional and industrial gardens - Bioaesthetic planning of rural gardens, recreational grounds, avenue planting in highways and near railway lines, establishment and maintenance of lawns and different types of gardens - Interior plant scaping - Bonsai.

Pre-and Post - Harvest losses in horticultural crops - Maturity indices - ripening - storage methods of storage - Extending the storage life - use of chemicals, growth regulators and skin coatings in regulating ripening and storage life - control of spoilage - Handling, packaging, packing and Methods of transport.

Processing and preservation - Different horticultural products - Establishment of horticulture based industries - Biproduct utilisation.

PAPER -II

PRODUCTION TECHNOLOGY OF HORTICULTURAL CROPS

Present status and prospects - climatic and Soil requirements in different zones - Propagation techniques and nursery technologies - cropping systems - Planting systems - varieties and crop improvement - Nutrient uptake, requirement and Management - Irrigation methods, water requirement and Management - pruning and training - Mulching - weed management - use of plant growth regulators - Maturity indices - harvesting - grading - packaging methods and packing - storage - ripening methods - Industrial and Export potential - seed production techniques including F1 seed production.

Fruit Crops :

Mango, Banana, Citrus, grapes, Papaya, guava, Sapota, Pine apple, pomegranate, anonas, ber, amla, tamarind - apple, pear, plum, peach, strawberry, jack, mangosteen, avocado, other minor fruits.

Vegetable Crops:

Tomato, brinjal, hot and sweet, Peppers, Bhendi, Leguminous vegetables (Beans, Peas, cluster beans - cowpea, soya beans - dolichos bean); bulbous vegetables (Onion, garlic) Tuber crops - (Tapioca, sweet potato, yams); cucurbitaceous vegetables (cucumber, musk melon, water melon, gourds, coccinea, pumpkin and squashes, chow-chow), cruciferous vegetables (Cabbage, Cauliflower, minor crucifers), root vegetables (Carrot, radish, beet root, turnip, knol-kohl); Leafy vegetables (Spinach, chekurmanis, palak, amaranthus), Drumstick, asparagus, Potato, Curry leaf.

Flower Crops:

Jasmines, roses, tube rose, chrysanthemum, dahlia, marigold, crossandra, cut flowers (cut roses, orchids, carnations, gladioli, chrysanthomum, Gerbera, anthurium, aster, lilies, dry flowers).

Spice crops:

Pepper, cardamom, turmeric, ginger, Tree spices (clove, nutmeg, cinnamon, All spice, coriander, fenugreek, fennel, cumin, herbal spices).

Plantation crops:

Tea, Coffee, Rubber, Cocoa, Coconut, Oilpalm, Cashew, Palmyrah, Arecanut, Oilpalm and nut crops.

Medicinal Plants:

Catharanthus, Senna, dioscorea, Solanum, gloriosa, coleus, pyrethrum, digitalis, atropa, Ipecac, Isabgol, withania, Rowolfia

Aromatic Plants:

Geranium, Mentha, Ocimum, Maruvu, Marikolundu grasses (Cymbopogons, citronella, palma rosa, vetiver), patchouli.