

Agro-climatic zones of U.P. and geographical distribution of agronomical and horticultural crops. Climate change, its impact on agriculture and appropriate management.

Concept of crop rotation, mixed cropping, Inter cropping, Relay cropping, multiple cropping, strip cropping and multistoried cropping. Package of practices for improved Cultivation of cereals, pulses, oilseeds, fibre Sugar and fodder crops. Dry farming and rainfed agriculture, Agro forestry, organic farming.

Major tropical and Subtropical fruit crops of U.P. and their package of practices, High density planting of fruit crops. Cultivation of Cole crops. Cucurbits, Solanaceous and legume Vegetables. Nursery rising, Cultivation of protected crops. Post harvest technology of Fruits and Vegetables.

Pests and diseases of major agronomical and horticultural crops. Integrated Pest Management. Herbicides and weed management.

Use of plant growth regulators and hormones. Role of nutrients, diagnosis of nutrient deficiency symptoms and their amelioration Biotic and abiotic stresses and their management. Quality of crop produce and their evaluation.

Classification and Characteristics of U.P. soils. Physical. Chemical and biological properties of soil. Essential and beneficial plant nutrients and their requirement. Problem soils and their reclamation. Manufacturing and efficient use of organic, inorganic and biofertilizers. Integrated nutrient Management (INM) . Quality of irrigation water.

Importance of Genetics and plant Breeding in improvement of agronomical crops. Development of Hybrids and Composites. Mutagenic agents and polyploidy. Methods of Plant breeding in self and cross-pollinated crops. Genetic engineering and application of biotechnological tools. Genetically modified crops. seed production.

Role of Milched animals, poultry farming, fisheries and apiculture in agricultural economy. Milk production, processing and marketing Management of common diseases of cattles and poultry.

Agricultural implements, machinery, Plant protection and post harvest technology equipments, their importance and uses in agriculture, Types of soil erosion, methods land practices of its control. Water harvesting and watershed management, Zero tillage.

Principles of economics in relation to agriculture. Farm planning. budgeting and resource management system and types pfarming. Marketing of agricultural inputs and produces. Role of co-operatives and regulated markets in increasing marketing efficiency. Rural credits. Minimum support price and its importance, Problems of agricultural labourers and their welfare.

Rural development projects and their role in increasing agriculture production and rural employment, Training and its methodology. Role of KVKs. Women empowerment.

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