

AGRICULTURE

Cell as structural and functional unit, protoplasm, cytoplasm, plastids etc. colloids, permeability osmosis etc. absorption of water and its movement inside plants, factors, affecting solute - absorption and transpiration. Vapo-transpiration, mineral nutrition, role of major and minor elements. In growth and developments enzymes and enzyme activity in different physiological process carbon assimilation, respiration and photo respiration, nitrogen and fat metabolism growth hormones and their importance in agriculture.

Properties and uses of nitrogen, phosphorus potassium, calcium, magnesium, sulphur, iron, copper zinc, manganese boron, molybdenum, cobalt, mercury, aluminium antimony, lead silicon, arsenic and sodium in relation to agriculture with reference to soil plant and animal.

Amino acids, proteins carbohydrates, fats oil their concurrence. Classification, properties and functions nuclei, composition and types, properties, structure and biological of RNA and DNA chemistry of photosynthesis pigments calvin cycle.

Role of microorganisms in soil fertility management, efficient uses of fertilizer acid soil management physical and chemical properties of soil, important biological process in soil - ammonification, nitrification identification and nitrogen fixation, soils of Indian and Arunachal Pradesh, factors affective loss of plant nutrients from soil effect of soil on nutrient availability.

Scope, aim, importance of horticulture in Arunachal Pradesh, influence of soil and climate in horticulture crops, principles of plants propagation by seen, cutting layering and grafting use of growth regulations in propagation, planning and management of nurseries. Orchard management practices. Types of vegetables crops, vegetables seed production, processing and preservation, cultivation of apples, pear, peach, plum papaya, pineapple, banana etc.

Concept of chromosome and gene, RNA and DNA, Mandelian principles of inheritance, plant ; breeding methods heterosis its utilization of crop improvement concept of new plant type architecture and production breeding steps in release of varieties.

Basic concept of wants, goods, welfare, utility, property, value price, demand, supply factors of production, consumption, exchange incomes national income and per capital income, farming systems and types of farms, factors of production land use etc. farm management principles of co-operation, different types of co-operative institutions, agricultural marketing structure of agriculture credit in India.

A brief historical review of development of agriculture in India and Arunachal Pradesh, factors effecting distribution of crops, classification of crops, physiology of reproduction of major crops, crops rotation and cropping intensity, Multiple relay and mixed cropping, cropping system, water management, weed control fertilizers and manures, bio-fertilizers, green manuring factors affecting quality of seeds, seed production, techniques, seed certification, procedures of Indian seed act.

Classification of insects of economics importance up to orders with examples, identification, nature of damage, life history and management of major insect post of field crops, vegetables fruit trees, stores grains and domestic animals. Beneficial and productive insects with special reference to sericulture, apiculture and lac-culture, classification of pesticides, their formulation and hazards, integrated pest management.

Bacteria, fungi, actinomycetes, algae protozoa and viruses their role in natural process in soil, milk, water, food, industry and disease, symbiosis and ambiosis, process of infection and disease development, principles of plant disease, control fungicides and chemotherapy, major diseases of crops with emphasis on symptoms ethology, spread, perpetuation and control.

Plant parasite nematodes, their pathogenicity, relationship with other micro-organism, methods of nematode control.

Meaning and importance of rural sociology, social change group dynamites and leadership, extension education philosophy, teaching methods. Extension programme planning.

Control of soil erosion-contouring, strip cropping, terracing, gully control structure etc. Soil and water conservation planning and application.
