

Scientist C - Crop Management

Name of the post	Subject	Syllabus
Scientist C - Crop Management	Agriculture	General Agriculture-All basic courses (Agronomy, Genetics & Plant Breeding, Soil Science & Agricultural Chemistry, Plant Physiology, Plant Pathology, Agricultural Economics & Agricultural Marketing, Statistics, Plant Biotechnology, Plant Biochemistry)
	Agronomy	Principles of Crop Production: Tillage, planting, crop establishment, crop physiology, photosynthesis, respiration, and yield factors. Soil Fertility & Nutrient Management: Soil composition, essential nutrients, deficiency/toxicity, fertilizers (organic/inorganic), biofertilizers, nutrient dynamics, and balanced nutrition. Water Management: Soil-water-plant relationships, irrigation principles, drought management, water use efficiency, and watershed management. Weed Management: Weed identification, crop-weed competition, herbicide application, biological control, and integrated weed management. Crop Ecology & Geography: Agro-ecological zones, crop adaptation, climate effects, and remote sensing.
	Soil Science	Soil Science: Soil properties, moisture, fertility, nutrient management, organic matter. Soil Physics: Texture, structure, porosity, water (potential, infiltration), temperature, aeration. Soil Fertility & Plant Nutrition: Essential nutrients, fertilizer use, nutrient management, soil testing. Soil Microbiology: Microbial transformations, nutrient cycles, rhizosphere, biofertilizers, waste management. Problem Soils: Management of acidic, saline, alkali soils.
	Agricultural Chemistry	Soil Chemistry Soil Colloids & Surfaces: Diffuse double layer, zeta potential, point of zero charge, surface charge characteristics, clay-organic interactions. Ion &

		Water Chemistry : Cation/Anion exchange, adsorption isotherms, soil solution, thermodynamics, salt/acid soil chemistry. Organic Matter : Fractionation, humus formation, decomposition, soil enzymes.
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