

MICROBIOLOGY, PLANT PATHOLOGY AND IMMUNOLOGY

Unit-I: MICROBIOLOGY

Five kingdom system by Whittaker (1969) - Prokaryotic and Eukaryotic microbes - General features of Viruses - Classification, characteristics and ultrastructure, isolation, purification, chemical nature - replication, transmission, economic importance, virions and prions, phytoplasma (including mycoplasma).

Unit-II: MICROBIOLOGY

Bergey's system of Bacterial classification (1984-1991) - Eubacteria, Archibacteria, Cyanobacteria and Actinomycetes. General account, ultrastructure, nutrition, growth, reproduction, bacterial culture technique and economic importance.

Unit-III: PLANT PATHOLOGY

Plant pathology - Organisms and causal factor responsible for plant diseases - methods of studying plant diseases - Koch's postulates - common terminologies used in plant pathology - symptomology, Etiology, Epidemic disease, Control measures - Host parasite interactions - Mycotoxins - Aflatoxins, Defense mechanisms in plant - integrated disease management.

Unit-IV: PLANT PATHOLOGY

Common plant diseases of India (Tobacco Mosaic, Cucumber mosaic, Little leaf disease of Brinjal, Citrus canker, Rice blight, Tikka disease of groundnut, Anthracnose of mango, Wilt of Cotton, Downy mildew of grapes, White rust of Mustard, Damping off disease of seedlings, Rust of wheat, Root knot of tomato).

Unit-V: IMMUNOLOGY

Immunology - General account of immune systems and immunology - innate and acquired immunity - Antigen and antibody (types, structure, requirements and antigen-antibody interactions) - Detection of antibody (immunoelectrophoresis, ELISA and RIA) - Application of immunology in plant systems with special reference to immunocytochemistry.

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Immunology

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