कृषि पादप रोग ⑥

NEW SYLLABUS AS NEW EDUCATION POLICY (NEP) 2020
(NEW AND RESTRUCTURED)

UNDER GRADUATE CURRICULA & SYLLABUS

B.Sc. (Hons.) Agriculture 2020

Semester System as per ICAR Vth Deans Committee Report

DEPARTMENT OF PLANT PATHOLOGY

Minutes of Board of Studies (BoS) held on 24.05.2021

A meeting of Board of Studies (BoS) of Plant Pathology was held on dated 24.05.2021 at 11.00 AM via online mode (Google Meet).

The following members were present:

1.	Dr. Brijesh Kumar	Associate Professor & Head Department of Plant Pathology SDJ PG College, Chandeshwar, Azamgarh	Member
2.	Dr. S.N. Singh	Associate Professor & Head Department of Plant Pathology PG College, Ghazipur	Member
3.	Dr. Yogesh Kumar	Senior Assistant Professor, Department of Pathology P.G. College, Ghazipur	Member
4.	Dr. Dharmendra Kumar	Associate Professor Department of Plant Pathology BUA&T, Banda	External Member
5.	Dr. Ramesh Singh	Associate Professor & Head Department of Plant Pathology T.D.P.G .College, Jaunpur	Convenor

Convener

The above said meeting of Board of Studies (BoS) of Plant Pathology was organized to consider and approve the Curricula & Syllabus developed as per *New Educatlon Policy (NEP) 2020* for the ***Department of Plant Pathology*** under B.Sc. (Hons.) Agriculture Programme in compliance of letter-1065-3-2021-16(26)2011, 20.04.2021 and -1073a-3-2021-8(20)2020, 30.04.2021.

After detailed discussion, the proposed Curricula & Syllabus developed as per *New Education Policy (NEP) 2020* for the ***Department of Plant Pathology*** under B.Sc. (Hons.) Agriculture Programme have unanimously approved with some suitable modifications but not more than 30 per cent.

Dr. (Brijesh Kumar)
Member

Dr. (S.N. Singh)
Member

Dr. (Yogesh Kumar)
Member

Dr. (Dharmendra Kumar)
External Member

Dr(Ramesh Singh)
Convener

PLANT PATHOLOGY

Course Code	Course Title	Credit Hours
AG-206	Fundamentals of Plant Pathology	4(3+1)
AG-307	Principles of Integrated Disease Management	3(2+1)
AG-506	Diseases of Field and Horticultural Crops & their Management–I	3(2+1)
AG-605	Diseases of Field and Horticultural Crops & their Management-II	3(2+1)

1. Fundamentals of Plant Pathology 4(3+1) AG-206

Theory

Introduction: Importance of plant diseases, scope and objective of Plant Pathology. History of Plant Pathology with special reference to Indian work. Terms and concept in Plant Pathology. Pathogenesis. diseases triangle and tetrahedron and classification of plant diseases. Important Plant pathogenic organism fungi. bacteria. fastidious vesicular bacteria. Phytoplasmas, Spiroplasmas, viruses. viroids, algae. protozoa, phanerogamic parasite and nematodes with example of diseases caused by them. Diseases due to abiotic causes.

Fungi: general character, definition of fungus, somatic structures, type of fungus thalli, fungal tissues. modifications of thallus, reproduction (Asexual and Sexual). Nomenclature, Binomial system of nomenclature. rules of nomenclature, classification of fungi, key to divisions, sub-divisions. orders and classes. Study the life cycle of following genera *Phytophthora, Albugo, Erysiphae, Puccinia, Mucor, Alternaria, Colletotrichum, Ustilago and Fusarium.*

Bacteria and mollicutes: general morphological characters, basic methods reproduction. **Viruses**: nature of properties, structure and transmission. Study of

phanerogamic plant parasites. **Nematodes:** General morphological characters and importance of plant nematodes (*Heterodera, Meloidogyne, Anguina*).

Epidemiology: Factors affecting disease development.

Practical

Acquaintance with various laboratory equipments and microscopy. Collection and preservation of disease specimen. Preparation of media, isolation and koch's postulates. General study of different structure of fungi, study of symptoms of various plant diseases. Study of representative fungal genera. Staining and identification of plant pathogenic bacteria. Study of phanerogamic plant parasites. Identification of plant parasitic nematodes.

2. Principles of Integrated Disease Management 3(2+1) AG-307

Theory

Categories of diseases, IDM: Introduction, history, importance, concepts, principles and tools of IDM. Economic importance of. diseases and Methods of detection and diagnosis of and diseases. Calculation and dynamics of economic injury level and importance of Economic threshold level. Methods of control: Host plant resistance, cultural, mechanical, physical, legislative. biological and chemical control. Survey surveillance and forecasting of diseases. Safety issues in fungicide uses. Political, social and legal implication of IDM.

Practical

Methods of diagnosis and detection of plant diseases, Methods of plant disease measurement, Assessment of crop yield losses, calculations based on economics of IDM, Identification of biocontrol agents, different predators and natural enemies. Identification and nature of damage of important diseases and their management. Plan & assess preventive strategies (IDM module) and decision making, crop monitoring attacked by diseases Farmers fields visit.

3. Diseases of Field and Horticultural Crops & their Management–I 3(2+1) AG-506

Theory

Symptoms, etiology, disease cycle and management of major diseases of following crops: Field Crops: Rice: Blast, Brown spot, Bacterial Blight. Sheath

blight, false smut, Khaira and tungro; Maize: downy mildew.; Sorghum: smuts; Bajra: downy mildew and ergot; Groundnut: early and late leaf spots; Pigeonpea: wilt and sterility mosaic; Green gram: Cercospora leaf spot, web blight and yellow mosaic; Tobacco: Mosaic. Horticultural Crops: Guava: wilt and anthracnose; Banana: Panama wilt, and bunchy top; Papaya: foot rot and leaf curl. Cruciferous vegetable: Alternaria leaf spot and black rot; Brinjal: sclerotinia and little leaf; Tomato: late blight, leaf curl; Okra: Yellow Vein Mosaic; Beans: Anthracnose and bacterial blight: ginger: soft rot; Colocasia: Phytophthora blight.

Practical

Identification and histopathological studies of selected diseases of field and horticultural crops covered in theory. Field visit for the diagnosis of field problems. Collection and preservation of plant diseased specimens for herbarium Note: Students should submit 10 pressed and well-mounted specimens.

4. Diseases of Field and Horticultural Crops & their Management-II 3(2+1) AG-605

Theory

Symptoms. etiology. disease cycle and management of major diseases of following crops:

Field Crops:

Wheat: Rusts, loose smut and ear cockle.

Sugarcane: red rot, smut and grassy shoot.

Sunflower: Sclerotinia stem rot and Alternaria blight.

Mustard: Alternaria blight, white rust; Gram: wilt and Ascochyta blight; Lentil: Rust and wilt; Cotton: Vascular wilt and black arm; Pea: Downy mildew, powdery mildew and rust. Horticultural Crops: Mango: Anthracnose, malformation; Citrus: canker ; Grape vine: Downy mildew powdery mildew; Apple: scab and Fire blight; Peach: leaf curl; Cucurbits: downy mildew, powdery mildew; Onion and garlic: purple blotch and stemphylium blight; Chilli: anthracnose and leaf curl: Turmeric: leaf spot; Coriander; stem gall: Marigold: Botrytis blight; Rose: dieback. powdery mildew; Potato: Early and late blight, Common scab.

Practical

Identification and histopathological studies of selected diseases of field and horticultural crops covered in theory. Field visit for the diagnosis of field problems. Collection and preservation of plant diseased specimens for herbarium Note: Students should submit 10 pressed and well- mounted specimens.