

Course Code : PLP 302

Course Title : Crop Diseases and their Management

Credit Hours : 3(2 + 1)

Full marks: 75

Theory: 50

Practical: 25

OBJECTIVES

Upon the completion of this course, the students will be able to identify major diseases of crop plants and suggest proper management practices for them.

I. SYLLABUS

Causes, symptoms, epidemiology, disease cycle and management practices of major diseases of cereals crops oil seed crops, industrial crops, vegetable crops, pulse crops, fruit crops, plantation crops and spices.

II. COURSE OUTLINE

A. Lecture

S. N.	Topics	No. of Lecture
1.	Powdery mildew diseases of cucurbits, pea, apple, citrus, etc	1
2.	Downy mildew diseases of cucurbits, crucifers, maize, etc	1
3.	Damping off of seedlings and Rhizoctonia diseases of vegetables and jute	1
4.	Purple blotch and stemphylium leaf blight of onion and garlic, stemphylium blight of lentil	1
5.	Root knot of vegetables and cereals, ear cockle of wheat	1
6.	Sclerotinia disease of beans, mustard and other crops	1
7.	Alternaria leaf spot, club root and white rust of crucifers	1
8.	Fusarium wilt of cotton, lentil, arhar, and chickpea	1
9.	Fusarium wilt of guava and banana, and red rot of sugarcane	1
10.	Bacterial wilt of solanaceous crops and banana, black rot of colecrops	1
11.	Early and late blights of potato and tomato, Phytophthora blight of Colocasia	1
12.	Viral diseases of tomato, potato, beans, soybean,	1
13.	Little leaf of brinjal, yellow vein mosaic of okra, and chirki and furki disease of cardamom	1
14.	Pome fruits: Apple scab, fire blight, root rot and crown gall.	1
15.	Collar rot of citrus, apple and papaya	1
16.	Citrus root rot, canker, tristeza and greening	1
17.	Anthracnose of mango, guava and papaya, and malformation of mango	1
18.	Red rust of litchi and tea, rust of guava, pea, beans and maize	1
19.	Papaya ring spot, banana bunchy top and stem gall of coriander	1
20.	Sigatoka leaf spot of banana and leaf spot and blight of strawberry	1
21.	Anthracnose of bean, chilli and tomato, leaf spot of chilli, brinjal and ground nut	1
22.	Ginger and turmeric: rhizome rot, blast and leaf blotch	1
23.	Rice: blast, leaf spot and false smut	1
24.	Rice: bacterial leaf blight and bacterial leaf streak	1

25.	Wheat: spot blotch, tan spot and loose smut	1
26.	Wheat: brown, yellow and black rusts	1
27.	Maize: Northern and Southern leaf blights and gray leaf spot	1
28.	Maize: banded leaf and sheath blight	1
29.	Deficiency/disorder diseases (black tip of mango, tip burn and khaira disease of paddy, browning, whiptail and buttoning of cauliflower, black heart of potato and blossom end rot of tomato)	1
30.	List of major diseases and their causal agents of major ornamental plants with major control measures to the point	1
Total		30

B. Practical

S.N.	Topics	No. of Practicals
1.	Field visit: to identify fungal, bacterial, viral, nematode and nonpathogenic	1
2.	Collection, identification and preservation of disease specimens.	1
3.	Teasing of disease samples and identification of causal organism.	1
4.	Transverse section cutting of disease samples to study host-parasite relationship of: Helminthosporium and Pyricularia Puccinia, Uromyces and Protomyces Alternaria and Cercospora Fusarium and Colletotrichum Phytophthora and Peronospora	5
5.	Preparation of temporary slides of fungi.	1
6.	Microscopic and ooze test of disease samples for detection of bacterial infection.	1
7.	Identification of plant parasitic and nonparasitic nematodes.	1
8.	Extraction and observation of various stages (eggs, juveniles and adult female) of root knot nematode.	1
9.	Dilution of chemicals.	1
10.	Handling and calibration of sprayers.	1
11.	Preparation of Bordeaux mixture and Bordeaux paste.	1
Total		15

REFERENCES

- Singh, R. S. 2005. Plant Diseases, 8th Edition. Oxford and IBH Publishing Co. Pvt.Ltd. New Delhi.
- Mehrotra, R. S. and A. Aggarwal. 2003. Plant Pathology. 2nd Edition. Tata McGraw-Hill Publishing Co. Ltd, New Delhi.
- Verma, L. R. and R. C. Sharma Edition 1999. Diseases of Horticultural Crops: Vegetables, Ornamentals and Mushrooms. Indus Publishing Co. New Delhi.
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- Agrios, N. George 2008. Plant Pathology Elsevier Academic Press, New York, USA/London, U.K.