

Date: 02/09/2023

To
The Principal
Shri. Mohatadevi Shikshan Sanstha
Pragati Mahavidyalaya
Sawkheda, Tq. Sillod
Dist. Aurangabad (Chhatrapati Sambhajanagar)

Subject: Application to Run the Certificate Course Entitled "*Plant Pathology*" for the Botany Department Students for the Academic Year 2023-24

Respected Sir/Madam,

I am writing to propose the introduction of a certificate course titled "*Plant Pathology*" for the students of the Botany department for the academic year 2023-24. This course aims to provide a comprehensive understanding of plant diseases, their causes, impacts, and management strategies, which are crucial for students pursuing a career in Botany.

The proposed course will consist of 32 hours of instruction and is designed to enhance the practical and theoretical knowledge of our students in the field of plant pathology. The curriculum will cover essential topics such as disease diagnosis, control measures, and the latest advancements in plant disease management.

Given the importance of plant pathology in agricultural and environmental contexts, I believe that this course will significantly benefit our students, equipping them with valuable skills and knowledge for their future endeavors.

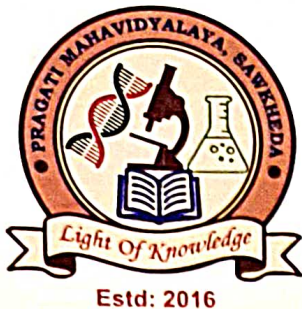
I kindly request your approval to run this certificate course for the upcoming academic year. I am confident that it will contribute positively to the academic development of our students and uphold the esteemed reputation of Pragati Mahavidyalaya.

Thank you for considering this proposal. I am available for any further discussion or clarification regarding this course.

Yours sincerely,



Dr. Pramod Shivajirao Fuke
Head of Department, Botany
Pragati Mahavidyalaya
Sawkheda, Tq. Sillod
Dist. Aurangabad (Chhatrapati Sambhajanagar)



Shri Mohatadevi Shikshan Sanstha, Aurangabad.

PRAGATI MAHAVIDYALAYA

Sawkheda, Tq. Sillod, Dist. Aurangabad.

Affiliated to: S.N.D.T. Women's University, Mumbai

College Code: 442 Exam. Center Code: 291

Website: www.pragatisawkheda.co.in

Email: pragatiiqac2016@gmail.com, pragatimahavidyalaya442@gmail.com

Contact: 9822021784, 8888611717



Mrs. Kaveri Palkar
President

Mrs. Archana Mukhekar
Secretary

Dr. Varsha Phalke
Principal

Ref No.: PMS/20 23-2024 / 06

Date : 06/09/2023

To
The Head of Department, Botany
Pragati Mahavidyalaya
Sawkheda, Tq. Sillod
Dist. Aurangabad (Chhatrapati Sambhajinagar)

Subject: Sanction for Running Certificate Course Entitled "*Plant Pathology*"

Dear Sir,

I am pleased to inform you that your proposal to run the certificate course entitled "*Plant Pathology*" for the Botany department students in the academic year 2023-24 has been approved.

This course is a valuable addition to our curriculum and aligns with our commitment to offering practical and relevant education to our students. Please proceed with the necessary arrangements for the course, including the preparation of the syllabus, scheduling, and coordination with faculty members.

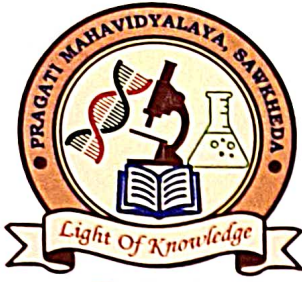
Kindly submit a report on the progress and outcomes of the course once it is concluded.

Thank you for your efforts in enhancing the academic offerings of our institution. If you have any further requirements or need additional support, please do not hesitate to contact the administration.

Best regards,

Varsha
PRINCIPAL

Pragati Mahavidyalaya
Principal, Sawkheda, Tq. Sillod,
Shri. Mohatadevi Shikshan Sanstha
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Ref No.: PMS/2023-2024/06

Date: 11/09/2023

Department of Botany

Notice

Subject: Certificate Course on "Plant Pathology"

Dear Students,

We are excited to announce the introduction of a new certificate course entitled "**Plant Pathology**" for the academic year 2023-24. This course is designed to enhance your understanding of plant diseases, their management, and the latest developments in the field.

Course Details:


- **Title:** *Plant Pathology*
- **Duration:** 32 hours
- **Objective:** To provide practical and theoretical knowledge about diagnosing and managing plant diseases.

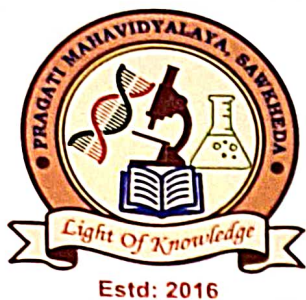
The course will offer valuable insights and hands-on experience, which will be beneficial for your academic and professional growth in the field of Botany.

Details regarding the registration contact HOD.

We encourage all Botany department students to take advantage of this opportunity to advance their knowledge and skills. For any further information or queries, please contact the Botany Department office.


Head of Department, Botany


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Certificate Course in Plant Pathology

Duration: 32 Hours

Course Overview: This course provides an in-depth understanding of plant diseases, their causes, effects, and management. It combines theoretical knowledge with practical applications to equip students with essential skills in plant pathology.

Week 1: Introduction to Plant Pathology (4 Hours)

- **Lecture 1: Overview of Plant Pathology**
 - Definition and Scope of Plant Pathology
 - Importance of Plant Pathology in Agriculture and Horticulture
- **Lecture 2: History and Development of Plant Pathology**
 - Milestones in Plant Pathology
 - Key Figures and Their Contributions

Week 2: Plant Disease Classification and Diagnosis (4 Hours)

- **Lecture 3: Classification of Plant Diseases**
 - Categories of Plant Diseases (Biotic vs. Abiotic)
 - Symptoms and Signs of Plant Diseases
- **Lecture 4: Techniques in Plant Disease Diagnosis**
 - Visual Inspection and Field Diagnosis
 - Laboratory Techniques (Microscopy, Molecular Methods)

Week 3: Pathogen Biology and Disease Cycle (6 Hours)

- **Lecture 5: Plant Pathogens**
 - Types of Pathogens (Fungi, Bacteria, Viruses, Nematodes)
 - Life Cycles and Reproduction
- **Lecture 6: Disease Cycle and Epidemiology**
 - Stages of Disease Development
 - Factors Influencing Disease Spread and Severity

Week 4: Disease Management Strategies (6 Hours)

- **Lecture 7: Prevention and Control Methods**
 - Cultural Practices (Crop Rotation, Sanitation)
 - Biological Control (Beneficial Organisms, Bioagents)
- **Lecture 8: Chemical Control and Integrated Disease Management**
 - Use of Fungicides and Antibiotics

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- Integrated Pest and Disease Management (IPM) Strategies

Week 5: Plant Disease Case Studies and Practical Applications (6 Hours)

- **Lecture 9:** Case Studies of Major Plant Diseases
 - Examples of Economic and Ecological Impact
 - Analysis of Disease Outbreaks and Management Approaches
- **Practical Session:** Hands-on Disease Diagnosis and Management
 - Sample Collection and Analysis
 - Field Visits (if possible)

Week 6: Emerging Trends and Research in Plant Pathology (4 Hours)

- **Lecture 10:** Recent Advances in Plant Pathology
 - Genetic and Genomic Approaches
 - Innovations in Disease Management
- **Lecture 11:** Future Directions and Career Opportunities
 - Research Areas and Opportunities
 - Career Paths in Plant Pathology

Week 7: Review and Examination (2 Hours)

- **Review Session:** Summary of Key Concepts
- **Final Examination:** Written Test and Practical Assessment

Teaching Methods:

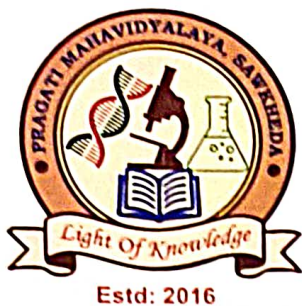
- Lectures and Presentations
- Practical Laboratory Sessions
- Case Studies and Discussions
- Field Visits (if feasible)

Evaluation:

- Participation and Attendance
- Practical Assignments and Case Studies
- Final Examination

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Final examination in Plant Pathology

Multiple Choice Questions (30 Marks)

1. What is the primary cause of plant diseases?

- a) Abiotic factors
- b) Biotic factors
- c) Soil composition
- d) Water availability

2. Which of the following is a biotic pathogen?

- a) Light
- b) Soil pH
- c) Bacteria
- d) Temperature

3. What type of pathogen is *Phytophthora infestans*?

- a) Fungus
- b) Bacterium
- c) Virus
- d) Nematode

4. The term 'symptom' in plant pathology refers to:

- a) The causal agent of a disease
- b) The visible effect of a disease
- c) The environmental condition causing the disease
- d) The process of disease development

5. Which method is commonly used for the molecular diagnosis of plant diseases?

- a) Microscopy
- b) PCR (Polymerase Chain Reaction)
- c) Soil testing
- d) Visual inspection

6. What is the primary function of a pathogen's spore?

- a) To produce food for the plant
- b) To initiate infection
- c) To repel herbivores
- d) To absorb sunlight

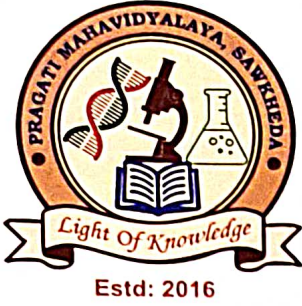
7. In plant pathology, what does 'IPM' stand for?

- a) Integrated Pest Management
- b) Individual Pathogen Monitoring
- c) Infection Prevention Measures
- d) Intensive Plant Maintenance

Varsha

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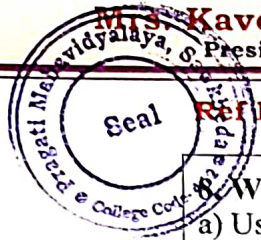
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8. Which of the following is a common method for cultural control of plant diseases?

- a) Use of fungicides
- b) Crop rotation
- c) Application of antibiotics
- d) Genetic modification

9. The disease cycle of a pathogen typically includes:

- a) Infection, incubation, and recovery
- b) Infection, growth, reproduction, and dispersal
- c) Germination, infection, and resistance
- d) All of the above

10. Which fungal structure is often used for the identification of fungi in plant pathology?

- a) Hyphae
- b) Spores
- c) Conidia
- d) All of the above

11. What is the main role of nematodes in plant diseases?

- a) Decomposing plant matter
- b) Breaking down toxins
- c) Parasitizing plant roots
- d) Enhancing plant growth

12. Which of the following is an example of a viral plant disease?

- a) Powdery mildew
- b) Rust
- c) Tobacco mosaic virus
- d) Downy mildew

13. Which chemical method is used to control bacterial plant diseases?

- a) Herbicides
- b) Fungicides
- c) Antibiotics
- d) Pesticides

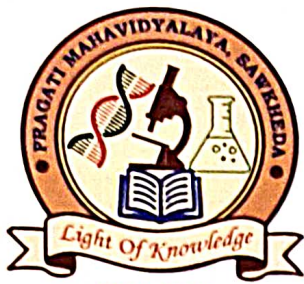
14. How do plant pathologists usually categorize diseases caused by environmental factors?

- a) Biotic diseases
- b) Abiotic diseases
- c) Fungal diseases
- d) Viral diseases

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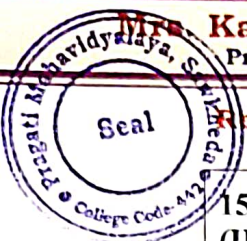
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15. What is the primary method of disease management in Integrated Pest Management (IPM)?

- a) Sole reliance on chemical pesticides
- b) Use of only biological controls
- c) Combining multiple management practices
- d) Ignoring the disease until it is severe

16. The term 'pathogenicity' refers to:

- a) The ability of a pathogen to cause disease
- b) The resistance of a plant to disease
- c) The survival of a pathogen in the soil
- d) The spread of disease across crops

17. What is the key feature of a plant disease caused by a virus?

- a) Rapid growth of fungal structures
- b) Visible lesions or spots on leaves
- c) Stunting and distortion of plant parts
- d) Root rotting

18. Which of the following is NOT a method of physical control for plant diseases?

- a) Soil solarization
- b) Pruning infected plant parts
- c) Application of neem oil
- d) Use of resistant plant varieties

19. What does the term 'epidemiology' in plant pathology refer to?

- a) The study of plant anatomy
- b) The study of the causes of plant diseases
- c) The study of the distribution and control of plant diseases
- d) The study of plant growth patterns

20. How does crop rotation help in disease management?

- a) It reduces the pathogen load in the soil
- b) It increases the pathogen's resistance
- c) It improves soil fertility
- d) It promotes pathogen growth

21. Which of the following is an example of a non-chemical control method for plant diseases?

- a) Fungicide application
- b) Soil fumigation
- c) Biological control agents
- d) Insecticides

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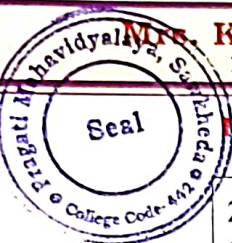
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22. What type of plant disease is caused by excess moisture?

- a) Powdery mildew
- b) Root rot
- c) Leaf spot
- d) Mosaic virus

23. The term 'resistance' in plant pathology refers to:

- a) The pathogen's ability to mutate
- b) The plant's ability to withstand disease
- c) The environmental factors that affect disease spread
- d) The chemical methods used to control disease

24. Which method is used to study the interaction between a pathogen and its host plant at the cellular level?

- a) Field surveys
- b) Laboratory culturing
- c) Electron microscopy
- d) Soil analysis

25. What role do beneficial microorganisms play in plant disease management?

- a) They increase pathogen virulence
- b) They decompose plant tissue
- c) They suppress pathogenic microbes
- d) They enhance soil acidity

26. What is a common symptom of a bacterial plant disease?

- a) White powdery patches
- b) Water-soaked lesions
- c) Distorted leaves
- d) Root knotting

27. The primary method of disease spread in viral infections is:

- a) Soil
- b) Airborne spores
- c) Infected plant material
- d) Water

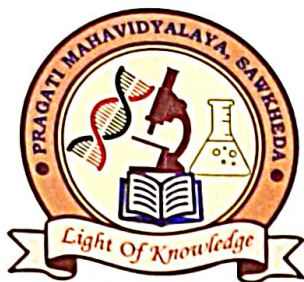
28. What is the purpose of using resistant plant varieties?

- a) To enhance pathogen growth
- b) To prevent soil erosion
- c) To reduce disease incidence and severity
- d) To increase plant nutrient uptake

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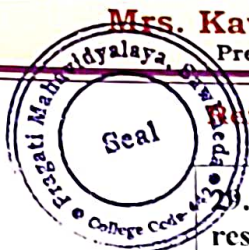
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29. Which type of plant pathology research focuses on genetic modifications for disease resistance?

- a) Epidemiological research
- b) Molecular plant pathology
- c) Soil microbiology
- d) Agricultural engineering

30. The process of 'sanitation' in disease management involves:

- a) Applying chemical treatments
- b) Removing and destroying infected plant debris
- c) Changing soil pH
- d) Increasing irrigation frequency

Answer Key

- 1. b) Biotic factors
- 2. c) Bacteria
- 3. a) Fungus
- 4. b) The visible effect of a disease
- 5. b) PCR (Polymerase Chain Reaction)
- 6. b) To initiate infection
- 7. a) Integrated Pest Management
- 8. b) Crop rotation
- 9. b) Infection, growth, reproduction, and dispersal
- 10. d) All of the above
- 11. c) Parasitizing plant roots
- 12. c) Tobacco mosaic virus
- 13. c) Antibiotics
- 14. b) Abiotic diseases
- 15. c) Combining multiple management practices
- 16. a) The ability of a pathogen to cause disease
- 17. c) Stunting and distortion of plant parts
- 18. d) Use of resistant plant varieties
- 19. c) The study of the distribution and control of plant diseases
- 20. a) It reduces the pathogen load in the soil
- 21. c) Biological control agents
- 22. b) Root rot
- 23. b) The plant's ability to withstand disease
- 24. a) Electron microscopy

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- 25. c) They suppress pathogenic microbes
- 26. b) Water-soaked lesions
- 27. c) Infected plant material
- 28. c) To reduce disease incidence and severity
- 29. b) Molecular plant pathology
- 30. b) Removing and destroying infected plant debris

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