

Emerging Trends in Plant Pathology and Crop Protection

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Preface

Plant diseases continue to pose a major challenge to global agriculture by reducing crop productivity, affecting food quality, and threatening food security. Rapid changes in climate, intensive farming practices, globalization of trade, and the emergence of new pathogens have further increased the complexity of crop protection. In this context, the field of plant pathology is undergoing a remarkable transformation with the integration of modern technologies, innovative management strategies, and sustainable approaches.

The book *“Emerging Trends in Plant Pathology and Crop Protection”* has been prepared to provide comprehensive and updated information on recent advancements in plant disease diagnosis, pathogen biology, integrated disease management, biological control, precision agriculture, molecular breeding, nanotechnology, and digital tools used in crop protection. The chapters included in this volume highlight both fundamental concepts and practical applications that can support researchers, academicians, students, extension workers, and agricultural professionals.

Special emphasis has been given to eco-friendly and sustainable disease management practices that minimize environmental hazards while improving crop health and productivity. The book also addresses emerging challenges associated with climate change, pesticide resistance, and evolving pathogen populations.

We sincerely hope that this book will serve as a valuable reference source for understanding modern developments in plant pathology and will encourage further research and innovation in sustainable crop protection. We express our heartfelt gratitude to all contributors, reviewers, and well-wishers whose support and dedication made this publication possible.

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Dr. Shabir Ahmad Wani
Dr. Ankur Mukhopadhyay
Dr. Brajesh Kumar Namdev
Dr. Sushree Suparna Mahapatra

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CONTENTS

S. NO.		PAGE NO.
1.	Advances in Plant Disease Diagnosis and Detection Techniques <i>Shahin Khan, Sushree Suparna Mahapatra</i>	1-14
2.	Molecular Plant Pathology and Host-Pathogen Interactions <i>Shabir Ahmad Wani, Sushree Suparna Mahapatra</i>	15-26
3.	Role of Climate Change in Plant Disease Dynamics <i>Ankur Mukhopadhyay, Sridhar Krishnaswami, Sarita Dubey, C. Mabel Joshaline, Aniket</i>	27-40
4.	Integrated Disease Management Strategies in Modern Agriculture <i>Brajesh Kumar Namdev</i>	41-56
5.	Biological Control and Biopesticides in Crop Protection <i>Bangi Deepthi, Sandhya. M, Vaishali Chaturvedi, Harish Kumar, Akhilesh Sharma</i>	57-68
6.	Emerging Plant Pathogens and Their Global Impact <i>Prashant Vinod Gawande, Satya Narayan Saini, Prajakta Vijay Shelke, Abhishree Suryawanshi, Suman</i>	69-82
7.	Nanotechnology Applications in Plant Disease Management <i>Prem Shanker, Ajeet Singh, Jarpula Vinay, Vikram Singh, Nandini Sarathi</i>	83-94
8.	Precision Agriculture and Digital Tools in Crop Protection <i>Manish Maharania, Snehal Prashant Gadewad, Sandhya. M, Shantanu Singh, Shahin khan</i>	95-106
9.	Resistance Breeding and Genetic Engineering for Disease Control <i>Vaishnavi Pramod Kharbadkar, Sridhar Krishnaswami, R. S. S. H. G. Alapati, S Bhavya Ratna Madhuri, D.Lakshmi Lavanya</i>	107-118

- 10. Sustainable and Eco-Friendly Approaches in Plant Protection** 119-134
Harsh Harilal Maru, Sridhar Krishnaswami, Chirag V Khambhu, C H Rajeshwari, Alka Kumari
- 11. Silk in Traditional and Modern Textiles Exploring Heritage and Innovation** 135-144
Bisma Gulzar, Khursheed Ahmad Sahaf, Shabir Ahmad Wani, Khalid Zaffar Masoodi, Yawer Ahmad Dar, Ishfaq Ahmad Malla Aabid Ahmad Bhat.
- 12. Eco-Marketing: Aligning Business with Nature** 145-166
Sumaira A. Malik, Shabir A. Wani, Sabiha Ashraf
- 13. Conservation and Sustainable Management of Natural Resources: Pathways to the Future** 167-186
Sadaf Rashid, Shabir A. Wani, Arbeena Manzoor, Nazakat Hashim, Yawer A. Dar
- 14. Climate-Resilient Strategies for Sustainable Agriculture: Conservation and Adaptation Approaches** 187-206
Shabir A. Wani, A.K. Tantray, Yawer A. Dar, Lubna Altaf, Sadaf Rasheed Malik, Sabhia Ashraf
- 15. Artificial Intelligence in Sericulture: A new Era of Smart and Sustainable Silk farming** 207-224
Yawer A. Dar, Shabir A. Wani, Sabhia Ashraf, Sadaf Rashid Malik, Bisma Gulzar
- 16. Biopesticides and Their Role in Sustainable Sericulture Production** 225-236
Sabiha Ashraf, Shahina A. Nagoo, S. A Wani, K. A. Dar, Masarat Bashir, Z. I Buhroo, Vaseema Yousuf, H. A. Malik, Nasreen Fatima, Irram Iqbal, Sreekanth P, M. F. Baqual
- 17. Role of Endophytic Microorganisms in Sustainable Management of Plant Diseases** 237-250
Mamta, Man Mohan, Pooja, Aakash
- 18. Nanobiotechnology Approaches for Next-Generation Plant Disease Management** 251-264
Mamta, Man Mohan, Pooja, Aakash