



# Mechanisms and Applications in Plant Pathology

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## ABOUT THE STUDY

Plant pathology is the scientific study of plant diseases caused by pathogens and environmental conditions. Organisms that cause infections include fungi, eggs, bacteria, viruses, viroids, virus-like organisms, phytoplasmas, protozoa, nematodes and parasitic plants. It does not contain ectoparasites such as insects, mites, vertebrates, or other pests that affect plant health by eating plant tissue. Plant pathology also includes studies of pathogen identification, etiology, disease cycle, economic impact, plant disease epidemics, plant disease resistance, plant disease effects on humans and animals, pathophysiology, and plant disease management.

Phytopathogens overcome all active sources of disease treatment due to their rapid spread and adaptability in variable domains. The practice of monoculturing and the intensive use of pesticides serve as a selective pressure for the adaptation and evolution of pathogens. Therefore, with an understanding of the dynamic nature of plant diseases, outsmarts management approach needs to be consistent with environmental sustainability and general agricultural and market conditions. Monitoring plant health and diagnosing various plant diseases are essential for disease control in agriculture. Technological advances related to computer vision technology have facilitated the monitoring of plant diseases and the study of pathogenic conditions.

As such, plant pathology is challenging, interesting, important and worth studying on its own. But it is also a science with a practical and noble purpose of protecting the food available to humans and animals. Due to their presence, plant diseases impede the cultivation and growth of food crops in some areas or you can grow and grow

food crops, but plant diseases can affect them, destroy some or all of the plants, and destroy many of their produce i.e., food before harvesting or consuming. The combination of diseases, insects and weeds is conservatively estimated to affect or destroy 31% to 42% of all crops produced worldwide each year. Losses tend to be lower in more developed countries and higher in developing countries, the countries that need the most food. It is estimated that of the average 36.5% of total losses, 14.1% is due to disease, 10.2% is due to insects, and 12.2% is due to weeds.

Parasites are called pathogens when they cause recognizable and persistent illness. The most serious pathogens are mistakenly imported from other continents, causing serious problems for native populations and crops. The severity of plant disease is determined by three factors known as the disease triangle, which consists of host, pathogen and environmental interactions. For these pathogens, general approaches for selecting specific known DNA target fragments are available and techniques based on screening for random regions of DNA have been developed.

Plant pathologists work around the world and in international collaboration that benefits agricultural production, livelihoods, food safety and nutrition. Your job improves the stability and productivity of your production system and the quality of your products. The work of pathologists is inherently dynamic as plant pathogens migrate and evolve to create new challenges within existing systems. As production systems are affected by changes in the global environment, plant pathologists play an even more important role in the treatment of new plant diseases.

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