

## Editorial note on Plant pathology.

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### Plant Pathology:

Plants, like animals and humans, can also become diseased. In fact, there are a much wider number of plant diseases than there are human or animal diseases simply because there are more plant species involved in agriculture, horticulture and forestry than in medical or veterinary medicine.

The science of plant diseases is called plant pathology, or phytopathology. There are a wide variety of microorganisms such as fungi, bacteria, viruses and nematodes that cause these diseases. Diseases caused by these pathogens are often called biotic diseases. Also, environmental conditions, such as winter damage or drought stress, can cause disease in plants. Diseases caused by these factors are often called abiotic diseases.

Plant pathologists are responsible for studying plant diseases, and their studies include various aspects of plant diseases, such as the organisms and environmental conditions that cause disease in plants, the mechanisms by which these factors cause disease, the interactions between these causal agents and the plant, and methods for managing or controlling plant diseases.

The science of plant pathology is closely allied with other sciences such as botany, mycology, microbiology, genetics, chemistry, horticulture, agronomy, and soil science. Plant pathologists integrate and use information from many of these sciences to develop insights into disease development and disease control.

### Types of Plant Pathogens

Plant pathogens are very similar to those that cause disease in humans and animals. Fungi, fungal-like organisms, bacteria, phytoplasmas, viruses, viroids, nematodes and parasitic higher plants are all plant pathogens.

### Fungi and Fungal-like Organisms (FLOs)

Collectively, fungi and FLOs cause the most plant disease than any other group of plant pathogens. These organisms cannot make their own food, lack chlorophyll, have filamentous growth, and may or may not reproduce by spores. Fungi and FLOs are able to overwinter in soil or on plant debris. However, some fungi and FLOs cannot overwinter in northern climates because of low winter temperatures. These pathogens overwinter in southern climates and then are transported by air currents back to northern climates. Disease movement from southern to northern climates can be monitored during the growing season.

### Bacteria:

Bacteria are single-celled microscopic organisms with cell walls that reproduce by binary fission (one cell splits into two). Introduction to the plant must occur through natural openings or wounds in the plant. Bacteria overwinter primarily in soil and in or on plant material that does not decompose, but some survive inside insect vectors.

### Viruses and viroids:

Viruses are intracellular (live inside the cell) nucleic acid particles with a protein coat that infect other living organisms and replicate in the hosts they infect. Viroids are virus-like particles but lack a protein coat. Viruses and viroids are primarily transmitted by vectors including insects, nematodes, and fungi, which introduce the virus or viroid during feeding. Viruses and viroids can also be transmitted through seed, vegetative propagation and pruning.

### Nematodes:

Nematodes are microscopic worm-like animals. The majority of nematodes are soil dwelling animals and move with soil. However, there are some nematodes that are transmitted through insects and infect above ground plant parts

### Parasitic Higher Plants:

Parasitic high plants are plants that contain chlorophyll but cannot produce their own food. They parasitize other plants to obtain nutrients and water. Examples include mistletoe and dodder.

### Plant Pathology:

Plants, similar to creatures and people, can likewise get unhealthy. Truth be told, there is a lot more extensive number of plant sicknesses than there are human or creature infections just on the grounds that there are more plant species engaged with farming, agriculture and ranger service than in clinical or veterinary medication.

The study of plant sicknesses is called plant pathology, or phytopathology. There are wide assortments of microorganisms like parasites, microbes, infections and nematodes that cause these illnesses. Illnesses brought about by these microorganisms are frequently called biotic infections. Likewise, ecological conditions, for example, winter harm or dry season pressure, can cause illness in plants. Sicknesses brought about by these components are frequently called abiotic illnesses.

Plant pathologists are liable for considering plant infections, and their investigations incorporate different parts of plant sicknesses, for example, the living beings and natural conditions that cause illness in plants, the instruments by which these elements cause illness, the connections between these causal specialists and the plant, and techniques for overseeing or controlling plant illnesses.

The study of plant pathology is firmly aligned with different sciences like organic science, mycology, microbiology, hereditary qualities, science, cultivation, agronomy, and soil science. Plant pathologists coordinate and use data from large numbers of these sciences to form experiences into infection advancement and infectious prevention.

## **Kinds of Plant Pathogens**

Plant microorganisms are fundamentally the same as those that cause sickness in people and creatures. Growths, contagious like living beings, microscopic organisms, phytoplasmas, infections, viroids, nematodes and parasitic higher plants are all plant microbes.

## **Parasites and Fungal-like Organisms (FLOs)**

On the whole, growths and FLOs cause the most plant sickness than some other gathering of plant microbes. These life forms can't make their own food, need chlorophyll, have filamentous development, and could conceivably replicate by spores. Growths and FLOs can overwinter in soil or on plant garbage. Be that as it may, a few organisms and FLOs can't overwinter in northern environments due to low winter temperatures. These microorganisms overwinter in southern environments and afterward are shipped via air flows back to northern environments. Infection development from southern to northern environments can be checked during the developing season.

## **Microorganisms:**

Microorganisms are single-celled infinitesimal organic entities with cell dividers that recreate by double splitting (one cell parts into two). Prologue to the plant should happen through characteristic openings or wounds in the plant. Microbes overwinter essentially in soil and in or on plant material that doesn't disintegrate, yet some make due inside creepy crawly vectors .

## **Infections and viroids:**

Infections are intracellular (live inside the cell) nucleic corrosive

particles with a protein coat that taint other living creatures and reproduce in the hosts they contaminate. Viroids are infection like particles yet come up short on a protein coat. Infections and viroids are principally communicated by vectors including bugs, nematodes, and organisms, which present the infection or viroid during taking care of. Infections and viroids can likewise be communicated through seed, vegetative engendering and pruning.

## **Nematodes:**

Nematodes are minuscule worm-like creatures. Most of nematodes are soil abiding creatures and move with soil. In any case, there are a few nematodes that are communicated through bugs and contaminate over the ground plant parts

## **Parasitic Higher Plants:**

Parasitic high plants will be plants that contain chlorophyll yet can't deliver their own food. They parasitize different plants to acquire supplements and water. Models incorporate mistletoe and dodder.

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