

**VIVEKANAND COLLEGE, KOLHAPUR (EMPOWERED AUTONOMOUS)**

**Department of Botany**

**B.Sc. II**

**Plant Protection**

**Topic : Terminology in Plant Pathology**

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## Plant Pathology:

It is branch of agricultural, botanical or biological science which deals with the study of the causes, etiology, resulting losses and management or control of plant diseases.

**Objectives of plant pathology:** The science of plant pathology has four major objectives:

- **Etiology or aetiology:** Study of living and nonliving entities.
- **Pathogenesis:** Study of mechanism of disease development.
- **Epidemiology or Epiphytotic:** Pathogen multiplies and spread.
- **Control:** Development of suitable methods of controlling the disease.

## **Biological control:**

**In which one organism is used to eliminate or reduce the disease caused by an another organism.**

- **Host:** A plant or animal that is invaded by a parasite and from which the parasite obtains its nutrients.
- **Pathogen:** An entity that can incite disease (living organism).
- **Inoculum:** The portion of a pathogen which is transmitted to or contact a host and is capable of infecting the host.
- **Virulence:** Relative ability to cause disease, the degree of pathogenicity of a pathogen. (Virulence is used as a measure or degree of pathogenicity in a qualitative sense)

- **Parasite:** An organism that lives on or in any other living organism.
- **Pathogen:** An entity that can incite disease (living organism).
- **Pathogenesis:** The chain of events that occur from the time the pathogen enters the host until its effects become visible.
- **Pathogenicity:** The ability of a pathogen to cause disease.
- **Symptoms:** The external and internal reactions of the host to invasion of a pathogen, alteration in the plant due to infection, signs of infection.

**Predisposition:** It is the action of set of environments, prior to penetration and infection, which makes the plant vulnerable to attack by the pathogen. It is related to the effect of environments on the host, not on the pathogen, just before actual penetration occurs

**Infection:** The establishment of parasitic relationship of a parasite with the host.

**Incubation period:** The period of time between penetration of a pathogen to the host and the first appearance of symptoms on the plant.

**Etiology or aetiology:** Study of the cause of the plant disease and nature of the causal agent.

**Disease cycle:** The chain of event involved in disease development including the stages of development of the pathogen and effect of the disease on the host.

**Resistance:** is the ability of a host plant to resist the growth or establishment of a pathogen.

**Susceptible:** Lacking the inherent ability to resist disease or attack of a given pathogen, non-immune.

**Susceptibility:** is the inability of a plant variety to restrict the growth and/or development of a specified pest.

**Plant immunity** is the inherent or induced capacity of plants to withstand biological attack by pathogens.



**Hypersensitivity:** Excessive sensitivity of plant tissues to certain pathogens.

**Cross-protection:** the process by which a normally susceptible host is infected with a less virulent pathogen (usually a virus) and thereby becomes resistant to infection by a second, usually related, more virulent pathogen

**Phytoalexins** are low molecular weight antimicrobial compounds that are produced by plants as a response to biotic and abiotic stresses. As such they take part in an intricate defense system which enables plants to control invading microorganisms

**Siderophores** are organic compounds with low molecular masses that are produced by microorganisms and plants growing under low iron conditions. The primary function of these compounds is to chelate the ferric iron [Fe(III)] from different terrestrial and aquatic habitats and thereby make it available for microbial and plant cells.

**Inoculum:** The portion of a pathogen which is transmitted to or contact a host and is capable of infecting the host.

**Inoculum potential:** The number of infective particles present in the environment of uninfected host, or combined energy of propagules to cause infection

**Transmission or Dissemination or Dispersal:** The transport of

**Viruses** are extremely small (they can be seen only with the aid of an electron microscope), being composed of nothing more than a protein shell containing a small amount of genetic material.

**Mycoplasma** (plural mycoplasmas or mycoplasmata) is a genus of bacteria that lack a cell wall around their cell membranes.

❖ **Mycoplasma** are the smallest, wall-less free living prokaryotes belonging to class Mollicutes.

**Viroids** are single-stranded, covalently closed, circular, highly structured noncoding RNAs that cause disease in several economically important crop plants.

They replicate autonomously and move systemically in host plants with the aid of the host machinery.