B.Sc. Botany – 3rd SEM

by Dr. Raman Kumar Ravi

Host-Pathogen Relationship

The host-pathogen relationship is the dynamic interplay between a host and an invading pathogen. It's a complex process that occurs at the molecular, cellular, and population levels.

In plant pathology, the host-pathogen relationship is the complex interaction between plants and microbes or viruses that cause disease.

There are seven steps-

1. Inoculation

In this process pathogen come in contact with its host.

2. Penetration

In this process the pathogen enters in the host.

3. Infection

Pathogens like bacteria, viruses, fungi, and nematodes can penetrate plant cells through wounds, stomata, or by using enzymes.

4. Invasion

The spread of pathogens into the host is called invasion.

5. Reproduction

Multiplication of pathogens inside the host.

6. Dissemination

It refers to transfer of inoculum either passively or actively.

7. Survival

Factors that affect this relationship

- **Host resistance**: Different plant hosts have different levels of resistance and tolerance to infection.
- **Pathogen virulence**: Different pathogens have different abilities to grow on or within hosts.
- **Environmental factors**: Soil temperature, moisture, alkalinity, and acidity can affect the development of disease.