

# Puccinia

1994

Q.2 What is Rust? Give a detail account of life cycle of *Puccinia graminis* and also suggest control.

OR,

Describe the structure and function of various spores found in the life cycle of *Puccinia graminis*.

OR,

Describe the life history of any heterocyclic fungus making special reference to haploid and diploid phases?

15-; Systematic Position →

Class - Basidiomycetes ✓

Subclass - Protobasidiomycetes

Order - Uredinales

Family - Pucciniaceae ✓

Genus - *Puccinia*

species - *graminis* ✓

The colour of the spores are rusty. So they are known as Rust disease. *Puccinia graminis* is heterothallic heterocyclic and obligate endoparasite. The name of *Puccinia* has been given in honour of T. Puccini. The famous Indian anatomist in the year 1738. Earlier it is believed that rust is nothing but one type of insect. Which after feeding on wheat plant left black spot of its excreta, But it was Indian botanist Pursoon (1797) first recognize it is not insect but it is a one type of fungus. Black rust is found in all the wheat growing areas of the world. In India it is common both in southern and northern.

The causal organism is *Puccinia graminis tritici*. It is black rust which is heterocyclic and completes its life cycle in two

alternate host. That is wheat and Barberry plant. But some rust disease are red or brown in colour. Butler and Bisby (1958) reported that 262 species of Puccinia from India.

**Structure of Thallus** → The plant is much branched and each branch is known as hypha and union of hypha is known as mycelium. Which is septed and inter into the host either inter cellular or intra cellular. So they are known as obligate parasite. Inside the host cell they form small, round, branched haustoria which is binucleate and absorb food from the host cell.

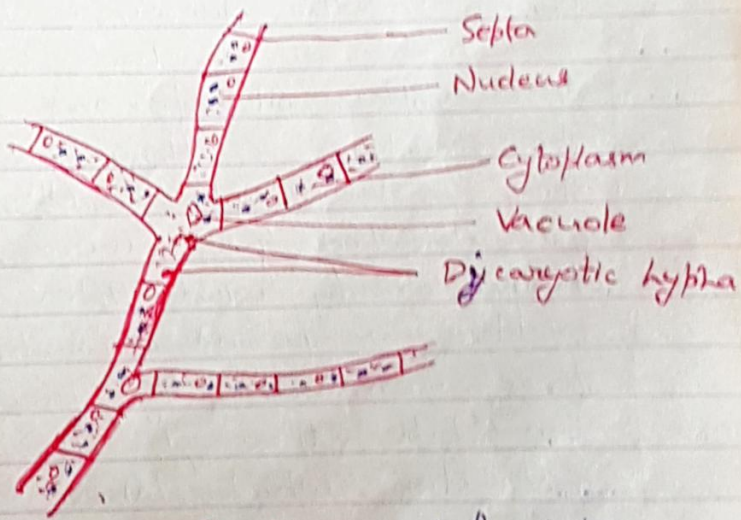


Fig - Structure of Thallus of Puccinia.

It is heterocyclic which completes its life cycle in two host. This phenomenon completes with the help of five types of spores. They are -

1. Uredosporae (Uredial stage (2x) - On wheat
2. Teleutospores (Telial stage (2x) - On wheat
3. Basidiospores (Basidial stage (x) - On soil
4. Pycnidiospores (Pycnidial stage (x) - On Barberry leaf
5. Aecidiospores (Aecidial stage (2x) - On Barberry leaf