

Subject-Botany
Class-Bsc-III
Paper-I (Pathology)

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Topic- Red Rot Of Sugarcane Disease

Red rot of sugarcane was first reported from Java (now Indonesia) by Went in 1893.

During 1895-1900 the disease assumed epidemic proportion in the Godavari Delta of Andhra Pradesh, India (Barber 1901). Butler(1906) published a detailed account of this disease from PUSA, Bihar and gave it the name 'Red rot'

The disease is caused by the fungus *Colletotrichum falcatum* Went (imperfect state); perfect /ascigerous state = *Glomerella tucumanensis* (Speg.) von Arx and Muller).

The disease is the number one problem of sugarcane in India and entire cane breeding in India is geared around this disease. Today, no sugarcane variety is released for cultivation without resistance to red rot.

Causal Organism: *Colletotrichum falcatum*

It is the most dreaded fungal disease of sugarcane. The pathogen is both sett and soil borne. However, primary spread is mainly through infected setts.

Symptoms:

The disease starts with yellowing of leaves from top except crown leaves, after rainy season followed by considerable shrinkage of the stalk.

Presence of reddish discoloured patches or lesions interspersed with white horizontal patches on the internal tissue i.e. pith.

As the disease progresses the internal tissues become darker in colour and dry resulting in longitudinal pith cavities. The fungal mycelium may be seen in these dry cavities.

On splitting open the cane of such affected plants, interrupted red and white patches (white spot) along with sour alcoholic odour are observed.

In later stage numerous acervuli develop on the rind. The pathogen mainly spreads during the rainy season and if environment favours it can wipe out entire sugarcane plantation.



Internal symptoms

Yellowing of crown

Spindle infection

Colletotrichum falcatum

Control of Red Rot of Sugarcane:

Physical method:

Removal of the affected clumps at an early stage and soil drenching with Carbendazim 50 WP (1 gm in 1 litre of water)

The cut ends and entire setts should be dipped in a fungicide solution, such as one per cent Bordeaux mixture.

If the disease is noticed in the field, the leaves and canes should be collected and destroyed by burning.

Chemical method:

Adopt sett treatment with Carbendazim before planting (Carbendazim 50 WP (0.5 gm in 1 litre of water) or Carbendazim 25 DS (1gm in 1 litre of water) along with 2.5 kg of Urea in 250 litre of water

Use fungitoxic chemicals like Bavistan, Benomyl, Topsin and Aretan at 0.1 per cent for 18 min. at 52°C for dipping setts which gave almost complete elimination of rot infection.