

## Smut

This is a major fungal disease, caused by the fungus *Sporisorium scitamineum* and observed on almost all the varieties commercially cultivated in India. High temperature in April–May, dry weather and acute shortage of water leading to high incidence of smut. Ratoon crops are suffering more than the plant crops. This disease brings down the cane yield substantially.

### Symptoms

- ❖ The patent symptom of the disease is the production of a black whip like structure from the central core of the meristematic tissue. This flagelliform appendage, commonly called the whip, is straight when young and irregularly curved when it grows more. A thin, white and papery membrane covers the whips when young, this is the epidermis of the host. When it matures, the millions of black spores (teliospores) liberated and disseminated by the wind after rupturing the epidermis.
- ❖ On infection, the stool gives short canes having thin & stiff leaves and produce more tillers than the healthy ones.
- ❖ After the production of a terminal whip, the lateral buds begin to sprout and may produce shoot smut whip smutted side shoots can also occur on normal cane by secondary infection (aerial infection).
- ❖ Affected canes after whip emergence dies and withered.



### Transmission

The primary transmission of the disease is through diseased seed pieces, while the secondary transmission is through wind blown spores. In addition, spores or sporidia, present in or on the soil surface, are also carried to different fields through rain or irrigation water.

### Management

- ❖ Use of resistant variety and planting of healthy disease free setts.
- ❖ Use of heat therapy. (Moist hot air treatment at 54°C for 150 minutes or Hot water treatment at 50°C for 120 min) for the production of breeder seed.
- ❖ Inspection and roguing of smutted clumps / stools in the field to be done regularly.
- ❖ Avoid ratooning of diseased crop if incidence is more than 20%.



**Smut Disease Incidence**