



MYCOFLORAL ENVIRONMENT WITH THEIR IMPACT ON HEALTH AND SACCHARUM OFFICINARUM LINN

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ABSTRACT: The present study deals with the nutrition of plant *Saccharum officinarum* Linn. In which fungal communities are associated with the leaf surface of sugarcane. The frequency of fungal diversity differed significantly between the wet and dry season. Morphologically fungal colonies create a variety of colour, stain and pathogenicity of diseases as well as demonstrated diversity of fungal diseases. Screening of phylloplane mycoflora shows variety, impact on nutrition of sugarcane, health on public society, galaxy of fungi and natural beauty of fungal ecosystems. The climate of Gondia district is tropical hot and constructive for growth of fungi. Sugarcane is made up of sucrose, fructose and glucose. Table sugar is just sucrose and calories.

Key words: - diversity, fungal, infection, juice, pigment, sugarcane.

INTRODUCTION:

Sugarcane is the most important cash crop of Gondia district. This was a traditional crop in a very little area of Gondia for jiggery production. Now the area is plus/minus regularly under sugarcane cultivation at commercial level for sugar production. Diversity of fungal diseases is most harmful for food and ecosystems. Number of other Colletotrichum species such as *C. gloeosporioides* (Verma 1973), *C. acutatum* (Kaur and Singh 1990) and *C. coccodes* (Oh et al. 1988) have been associated with the disease in different geographical areas. The use of fungi to control the disease will be helpful for future practices but some fungi are contagious that means spread from one person or organism to another, typically by direct contact.

METHOD AND METHODOLOGY:

Screening of phylloplane mycoflora on *Saccharum officinarum* for pathogen study by both direct and indirect methods.

Direct Method:

A) Field Observation: Survey has been carried out monthly to observe the disease and photographs

were taken with the help of Nikon Digital Camera (6.0 megapixels). It gives direct images of objects on screen.

B) Laboratory Observation: Infected leaves observed and collected in sterile segregate polyethylene bags as per infected morphological appearance from different areas randomly within a month interval. Laboratory section done by section cutting of infected yellow and green leaves. 1% aqueous solution of lactophenol cotton blue was used as stain and microscopic photographs also taken.

Indirect Method:

Infected leaf is cut into 2 cm pieces and washed with tap water then transferred into 0.1% mercuric chloride (HgCl₂). Infected leaf pieces transferred into flask containing 100 ml sterile distilled water and washed serially for 5 – 6 times with changing sterile distilled water in aseptic condition these small leaf pieces about 2 cm long were transferred on sterile filter paper so as the blot dried for inoculation. Result and Discussion: Total 63 species of fungi are identified by infected leaves of sugarcane. Some fungi are pathogenic as well as some are non-pathogenic. Sugarcane

juice is the liquid food of our life. Pathogenic fungi are very harmful to plants and our body during the time of intake food (juice) material. *Aspergillus niger*, *A. ustus*, *A. fumigatus*, *A. sydowii* and *A. oryzae* colonies spreading rapidly with their mycelium. These are not destructive to crops but quality of juice will tarnish during the time of extraction of cane stem.

Culture of Fungi:

Washed and blot dried leaf pieces transferred on to surface of culture media (Zapak Agar Dox) in Petri dishes by spot inoculation method (Adams,1990) were incubated at room temperature 25±2 °C.

Desired and Inadequate Impact: Anthracnose, Eye spot disease was very dangerous for production of good quality sugar because it secrete toxin. The toxin reduces the iron content of the leaf and affects chlorophyll as well as food synthesis. Extracted with chili, ginger (*Zingiber officinale*), padina pavonica and lemon from the sugarcane plant is healthy for health. As sugarcane juice reduces the bad cholesterol levels in the body and has natural sugars. It helps in reducing weight. Health benefits of sugarcane juice: 1. It cures acne, it prevents bad breath and tooth decay. 2. It combats cancer and acts as an instant energy booster. 3. It helps people suffering from diabetes and act as a digestive tonic. Variety and taste:

Sugarcane variety with healthy stem without mycoinfection better for health. Because myco extract mix during the time of rollaring of the machine. After this taste will be different than healthy cane. According to Sivasubramanian and Pal (1994). Good variety and best cultivation practices also affects the juice characteristics.

CONCLUSION:

The Fungal population varied according to the cropping season. Morphology of the fungal body and colony shows the fungal diversity during isolation. Fungal pathogenesis showing relation with rainfall, humidity and temperature, when

there was rainfall is higher and temperature is low, that time fungal population is increased. Maximum temperature and dry atmosphere did not favor fungal population.

If we intake pathogenic juice so ultimately our health will be weak and illness. Population was generally less at the seedling stage of sugarcane. Disease free canes are most beneficial for health and our digestive system. Healthy Juice quality increases body metabolism. So always choose good food (solid or liquid) for the receiver. Choose good, stay safe with food.

ACKNOWLEDGEMENT:

The authors gratefully acknowledge the laboratory facilities of Hislop College, Nagpur and Jagat Arts, Commerce and Indiraben Hariharbhai Patel Science College, Goregaon as well as some fungus identified with the help of NFCCI by Agharkar Research Institute (An Autonomus Grand in Aid Institute under the Department of Science and Technology, Govt. of India) during the course of this research.

| Sr. No. | Culture | NFCCI Accession | Identification Remark |
|---------|---------|-----------------|---|
| 1 | 'A' | NFCCI- 3376 | Cladosporium cladosporioides (Fersen.) De Vrise |
| 2 | 'B' | NFCCI- 3377 | Leptoxyphium sp. |
| 3 | 'C' | NFCCI- 3378 | Fusarium aff. Fusarioides (Frag. & Cif.) Boot |
| 4 | 'D' | NFCCI-3379 | Penicillium oxalicum Curri. & Thoom. |

REFERENCES:

- Adams, P.B.(1990): The potential of mycoparasites for biological control of plant disease. Ann. Rev. Phytopathology vol. 28: Pp. 59-72.
- Kaur, S. and Singh, J.(1990): Colletotrichum acutatum a new threat to Chilli crop in Punjab, Indian phytopathology vol. 43: Pp. 103-110.

Oh, I.S., In, M.S., Woo, T.S., Lee, S.K. and Yu, S. H.(1988): Anthracnose of Pepper seedling caused by *Colletotrichum coccodes*, Korean J Mycology vol. 16: Pp. 151-156.
Sivasubramanian, C.G., and Pal, J.S., (1994): Effect of Heat Treatment on the Quality

of Sugarcane Juice. Indian Food Packer. vol.48(2): Pp. 51–54.

Verma, M.C., (1973): Comparative Studies on Virulence of isolates of Four species of *Colletotrichum* Parasitic on Chillies. Indian phytopathology. vol. 24: Pp. 28-331.

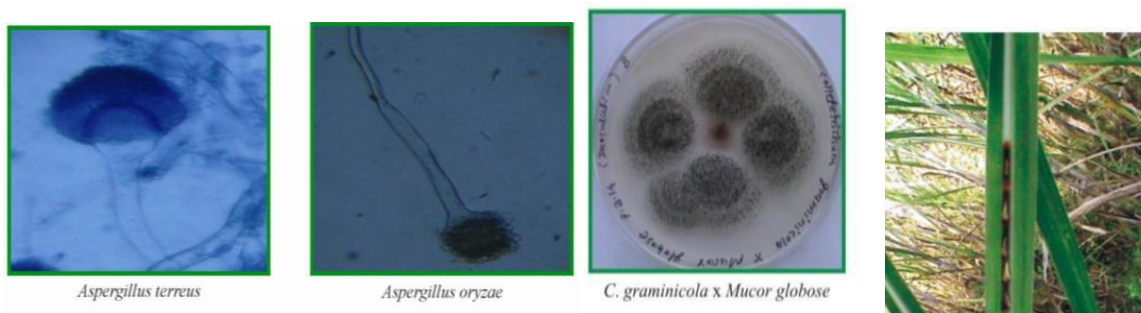


Fig. Some Culture of Fungi, Anthracnose disease and Antagonistic plate