EXPLORATION,BIOSYSTEMATICS AND EX SITU CONSERVATION OF INDIGENOUS FUNGI IN NFCCI(WDCM-932)WITH SPECIAL REFERENCE TO GLIOCEPHALOTRICHUM (HYPOCREALES)

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Abstract:

National Fungal Culture Collection of India (NFCCI) is established to conserve mycological heritage from diverse natural sources and their utilization in fungal biotech research and development of the country. Approx. 2000 fungal strains from natural substrates and ecological niches of diverse geographic regions of India have been maintained. Out of total, fungi belonging to Asco-mycota rank first(ca.45 families),followed by Basidiomycota (ca.10 families), Oomycota (ca.3), Zygomycota (ca.8 families)and Incertae sedis. During our ongoing efforts for discovering and preserving interesting and rare/unknown fungi from Western Ghats of India, more than 500 interesting fungi were coll-ected (2007-09) and studied from various substrates using selective tech-niques.Detail studies revealed three different species belonging to rare genus *Gliocephalotrichum* possessing distinct architectural features such as a whorl of sterile arms (setae) subtending penicillate branches bearing characteristics masses of elongated to ellipsoidal conidia along with characteristic morphology of chlamydospores.*In vitro*(cultural) studies on different nutrient media, PDA,V8,CMA,PCA identifying taxonomic characters noted were highly variable and same strain behaves differently on different media suggesting taxonomic criteria used for delimiting taxa are not tenable and taxonomy of this genus is still in state-of-flux. Present report describes in detail three species of *Gliocephalotrichum*out of 6 spp. recoded from all over the world using cultural characters, morphotaxonomic features, compar-ison of rDNA sequences (ITS1-5.8S-ITS2) and by deriving neighbor-joining trees of the known species. These are *G.longibrachium*, *G. simplex* and *G. bulbilium*. The former two spp.were turned out to be unknown from India, while latter is documented in detail. These taxa were isolated from partially degraded fruits of unknown host,*Terminalia chebula*,a plant used in medicines for centuries,and were subjected for preliminary extracellular enzyme screening in addition to the taxonomy. However,a cost effective strategy for in vitro conservation was standardized on natural substrates in addition to the methods like lyophilization,mineral oil,glycerol and DW preservation. This report also highlights the possibility of unveiling rare and undiscovered diversity of fungi using selective techniques for long term preservation and maintenance in NFCCI.

Key words: Fungal diversity, Nectriaceae, ITS sequence, Ex situ conservation, NFCCI, Western Ghats, India