Novel Dermatophytes from Indian Soils

Rahul Sharma* and Yogesh S Shouche

National Centre for Microbial Resource (NCMR), National Centre for Cell Science (NCCS), NCCS Complex
University of Pune Campus, Ganeshkhind, Pune 411 007, Maharashtra, INDIA

*Email presenting author-rahulpremasharma@gmail.com

Introduction

As part of a project on exploration and conservation of keratinophilic fungi of Maharashtra state of India which is situated in west coast of the country we encountered 3 new dermatophyte species recognized on the basis of distinct morphological characters and molecular signatures. The three new spp. are shown here.

Methods

1. Collection of soil samples from selected habitats (**barber shops, chicken shops, garbage, cattle sheds, public places** etc) of various districts of Maharashtra in sealed polythene bags. 2. Isolation of keratinophilic fungi was done by **Vanbreuseghem's hair baiting technique** and subsequent culturing on Sabouraud dextrose agar by direct transfer or **microdilution drop trail method** (Sharma et al. 2002). 3. For identification of fungi morphological and molecular characteristics were studied. 4. Phylogeny analysis was carried out in MEGA5 using sequences of ITS and/LSU region of rRNA gene.

Results

In the present study we conducted soil survey of 24 districts of Maharashtra state, India (an area equivalent to that of UK) and recognized three new dermatophyte species; **two (2) are *Nannizzia* spp.** and **one (1) is *Arthroderma* sp.** *Arthroderma dehoogi* sp nov and *Nannizzia graeserae* sp nov are rare species while *N. kunerti* is fairly common. Both the *Nannizzia* species were able to grow at 37°C while *A. dehoogi* showed no growth at 37°C.

Total 580 soil samples analysed from 24 districts

RESULTS

NJ tree

NJ tree

Conclusion All the three dermatophytes species **known only from asexual state** are distinct from known species in morphology and molecular characters. The study showed that **scanning of a larger area** (with focus on keratin rich habitats) is **important in recovering rare forms** that might be missed in sporadic samplings. This is because **two of the species that we recovered were obtained from only one sample out of 580 samples.**

References-

Sharma R, Rajak, RC and Pandey AK (2002) Teaching Technique for Mycology 19: A micro-dilution drop-trail method for isolating Onygenalean ascomycetes from hair baits. Mycologist 16 (4): 153-157.

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