



## Addition of new *Staphylotrichum Indicum* species in fungal diversity of aeromycoflora of Thaluk Hospital, Thiruvalla, Pathanamthitta district of Kerala, India

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### ABSTRACT

Aerobiology is a scientific and multi disciplinary approach focused on the transport of organisms and biologically significant materials. Fungi are remarkable for their antiquity, diversity, ubiquitous distribution and longevity. Fungal spores have long been known as one of the important environmental bio-particles causing dermatitis, respiratory and cardiac diseases along with allergic manifestation in human beings. In the present investigation, a new species of genera of fungus, *Staphylotrichum* was isolated and identified in October, 2013 as the dominant aero mycoflora from aero mycoflora of Thaluk Hospital, Pathanamthitta district, Kerala. The fungal culture was taxonomically identified and characteristic features were described.

### INTRODUCTION

An investigation of indoor atmosphere of Thaluk Hospital fungal flora was carried out in Thiruvalla, Kerala, India using Gravity Petri plate Method from July-2013 to October-2013. A total 11 Different Fungi were recorded during the above period. Out of these, *Staphylotrichum indicum*, a new fungus has been recorded which has been named at species level after the country of origin and has been described taxonomically.

### EXPERIMENTAL SECTION

In the present investigation fungal spores were isolated by using the gravity petridish method [1, 2]. Ten sterilized petriplates containing PDA medium were exposed for 10 minutes at different places at one meter height above the ground level. The exposed plates incubated at 28 °C in culture room for seven days. Fungal colonies having growth in the Potato Dextrose agar (PDA) plates were further sub cultured in the potato dextrose agar slant on which they were maintained for longer duration without any contamination or deterioration of vigor.

### RESULTS

Identification Features- *Corynespora aerea*; NCFT-5830 (Swapana and Neeta Nair) *Staphylotrichum indicum* sp nov.

Colonies reaching 3.5 cm in six days at 25<sup>0</sup> C on Potato Dextrose Agar (PDA), effuse velvety or cottony, yellow orange. Mycelium partially superficial partially immersed. *Stroma*, *setae*, *hyphopodia*, aleurospores or chlamydo spores not formed. Conidiophores up to 800 x 5-10 um size, thin walled, un-pigmented to light brown,

macronematous, straight or flexuous sometime micronematous. Apical end bifurcating into two branches or into subglobose to globose head bearing monoblastic and with small cylindrical conidigenous cells. Conidia solitary, dry, acrogenous, simple, spherical, thin walled, minutely spinose, bright golden color, with very small apical pore, 0-septate, Conidia 10-15  $\mu\text{m}$  diameter [3].

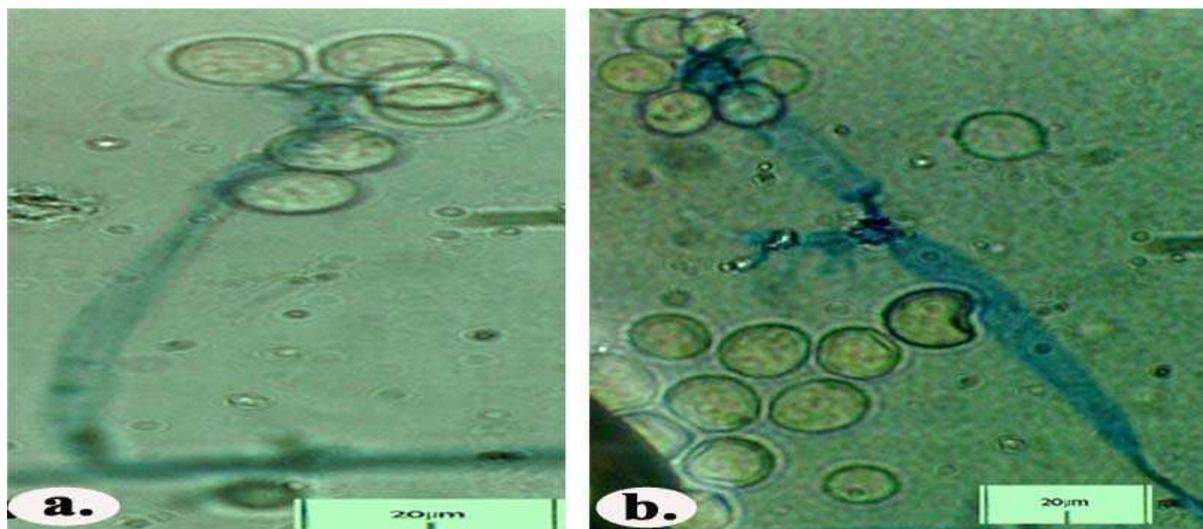
*Pervenientes usque 3.5 cm in colonias sex dies, ad 25 gradus Celcius in Potato Dextrose Agar (PDA) effusae cottony velutinae vel flavi coloris aurei. Mycelium partim superficiale ex parte baptizati estis. Stroma, setis, Immixta, aleurospores chlamydo spores sive non natus. Conidiophora usque ad 800 x 5-10  $\mu\text{m}$  magnitudine, tenuibus, un pigmentatus usque laete brunneis, macronemata, recta vel aliquando micronematous. Globosis vel subglobosis vel in fine; alter apicalibus bifurcating monoblastic portans in capite, et minor ad cylindricum conidigenas cellulis. Conidia solitaria, arida, acrogenous, simplex, sphaericum, tenuibus, minute spinosis aureo colore fulgent dumtaxat, cum ipsa in apice in cumulo, 0, septatis, Conidia 10-15  $\mu\text{m}$  diametro.*

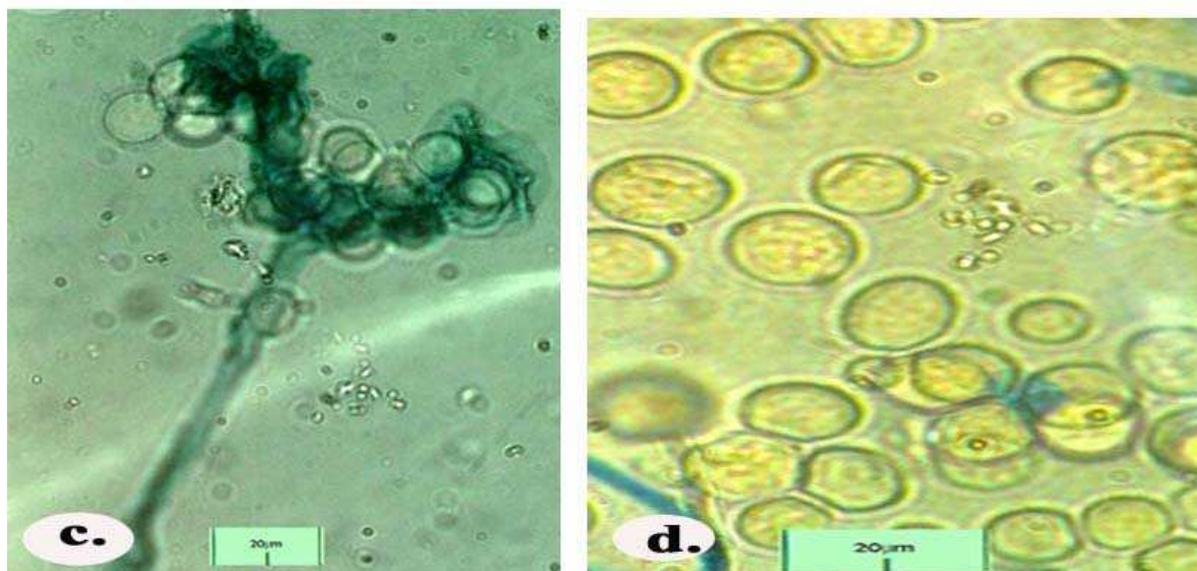
*Cultura aut ab Aere in sample, Thaluk Hospital Thiruvalla, Kerala by S. Swapna, July, 2013 et consecraverat ea in National Centre of Fungal Taxonomy, New Delhi, vide nullam accessionem 5830.*

To justify above new species, is being compared with *Staphylotrichum coccosporum* which is the monotypic species of genus *Staphylotrichum*.

The most distinct differentiating characters of *Staphylotrichum indicum* have uniform thin walled conidiophores, bifurcating terminally into two branches or into subglobose to globose head. Conidia are thin walled, minutely spinose, bright golden brown in color, with very small apical pore, while *Staphylotrichum coccosporum* have conidiophores are simple in upper fertile portion and conidia were slightly pigmented, smooth wall and often apiculate. Therefore, due to above differentiating character a new epithet *Staphylotrichum indicum* has been proposed (**Figure 1**).

Remark: Conidiophores of *Staphylotrichum* is well developed as compared with those of *Botryotrichum* of the similar fungi.





**Figure 1:** *Staphylotrichum indicum*

[a. Conidiophores, simple with upper fertile portion; b. Conidiophores apical end subglobose to globose; c. Conidiophores apical end bifurcating into two branches; d. Conidia minutely spinose, bright golden color, with very small apical pore].

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