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Title of PhD thesis: **Studies on Diversity and Activity of Microfungi Associated with Indigenous Palms of Western Ghats, India.**

Guided by. Prof. D. J. Bhat, Submitted to: Department of Botany, Goa University, Goa. December 2011

Area of Specialisation: Mycology (Fungal taxonomy)

Worked as:

- **Scientist** at Nurture Earth R & D Pvt. Ltd., Aurangabad from July 2013 to Aug, 2014. **'Scaling up of lab scale thraustochytrids fermentation.'**
- **Scientist** at Mykotech Pvt. Ltd. from June 2012 to June 2013. Project **'Screening of marine thraustochytrids for omega -3 fatty acids production.'** guidance of **Dr. S. Raghukumar**
- **Junior research fellow** in Department of Botany, Goa University from February 2008 to October 2011 on **'All india Co-ordinated Project on Taxonomy of Fungi'** Under the guidance of **Prof. D. J. Bhat**
- **Project assistant** in Department of Botany, Goa University from June 2005 to May 2006 on a Planning commission sponsored project **'Digital documentation of Flowering plants of Goa'** under guidance of **Prof. M. K. Janarthanam**

FUNGAL BIO-DIVERSITY RESEARCH LABORATORY, HERBARIUM AND CULTURE COLLECTION, BSI-ERC, Shillong

CURRENT PROJECT: Taxonomy, phylogeny and ex-situ conservation of Micro-fungal diversity from north-east India with special emphasis on fungi associated with endemic and threatened plants of Meghalaya

•Objectives of project

➤ Taxonomic documentation of micro-fungi with special emphasis on fungi associated with Endemic and threatened plants of Meghalaya, India.

Nepenthes khasiana Hook. F.

Paramignya micrantha Kurz.

Zanthoxylum khasianum Hk. f.

Citrus latipes (Swingle) Yu. Tanaka

Pinanga griffithii Becc.

Persea parviflora (Meissn) Haridasan et Rao

Aquilaria khasiana H. Hallier

Calamus khasianus Becc.

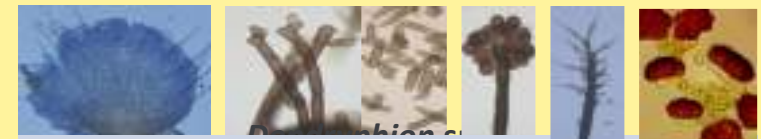
Calamus latifolius Roxb.

Wallichia nana Griff.

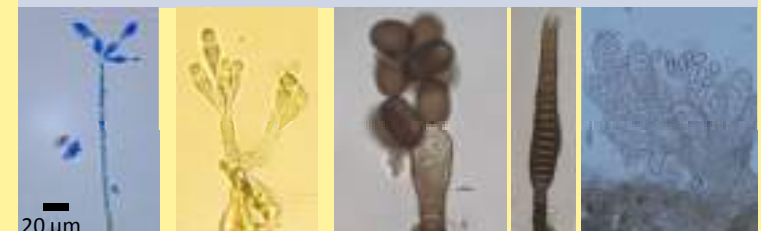
Calamus meghalayensis A.J. Hend.

➤ Maintenance of the isolated fungi in *ex situ* culture collection. Deposition of important cultures in National repositories.

➤ Revisiting already described fungi with latest tools of molecular phylogeny.



DOCUMENTATION OF FUNGAL DIVERSITY



CULTURE COLLECTION



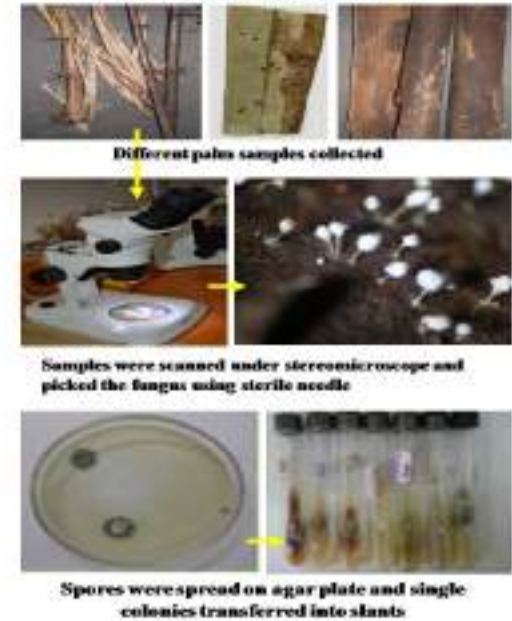
Materials and Methods



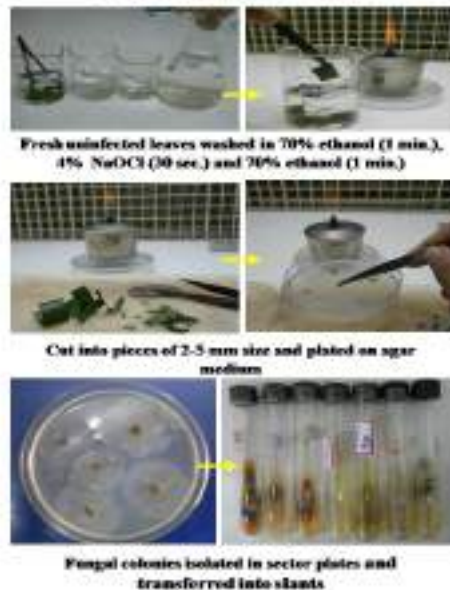
Moist chamber incubation method



Single spore isolation method



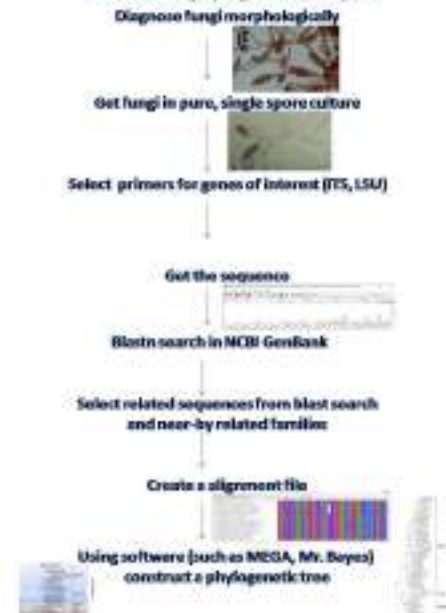
3-step sterilization technique



Particle plating technique



Molecular phylogenetic analysis



Amazing diversity of micro-fungi being documented: Total 210 species, 180 in culture



***Nepenthes khasiana* Hook. F.**



Sampled from: 3 locations
Isolated fungal strains: 21
Id till species level: 11



***Paramignya micrantha* Kurz.**



Sampled from: 1 locations
Isolated fungal strains: 5
Id till species level: 2



Haplotrichum sp.

***Citrus latipes* (Swingle) Yu. Tanaka**



Sampled from: 7 locations
Isolated fungal strains: 16
Id till species level: 8



***Pinanga griffithii* Becc.**



Sampled from: 2 locations

Isolated fungal strains: 13

Id till species level: 7



***Aquilaria khasiana* H. Hallier**



Sampled from: 1 location

Isolated fungal strains: 9

Id till species level: 2



Wallichia nana Griff.

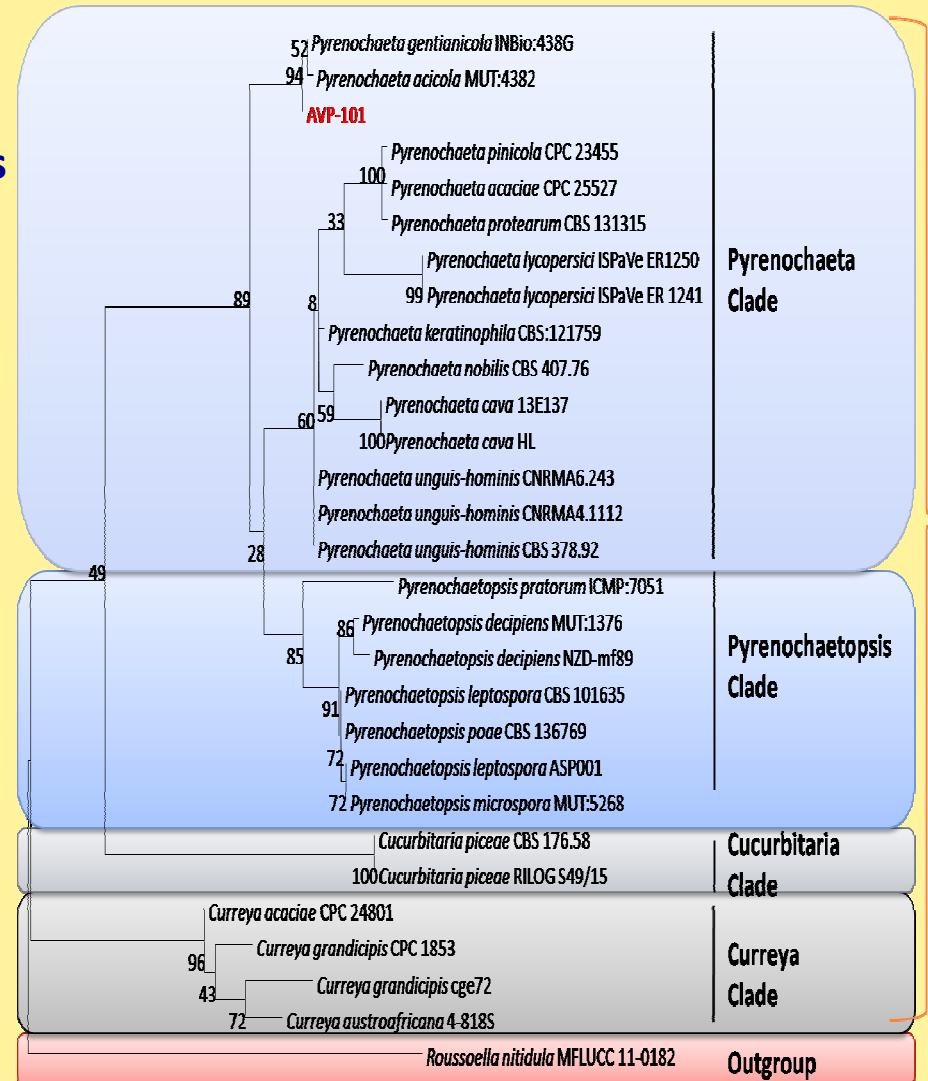
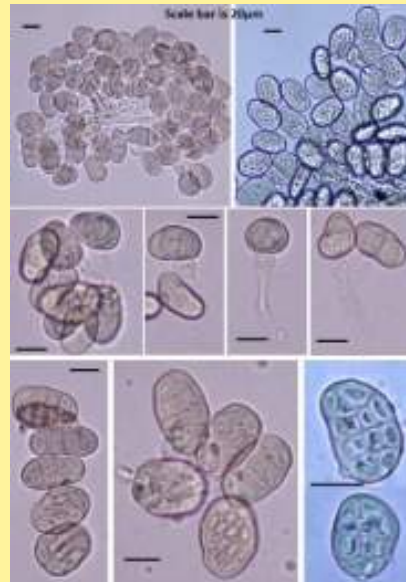


Sampled from: 1 location
 Isolated fungal strains: 4
 Id till species level: 2

Calamus latifolius Roxb.

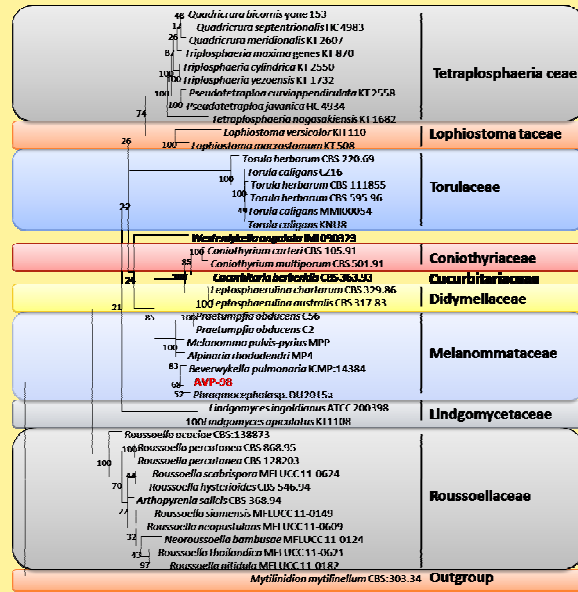


Sampled from: 2 locations
 Isolated fungal strains: 17
 Id till species level: 10



Cucurbitariaceae

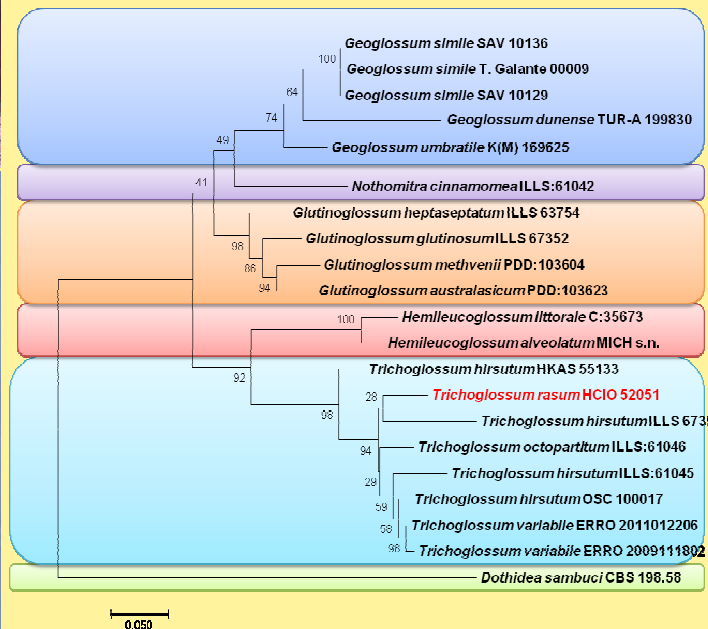
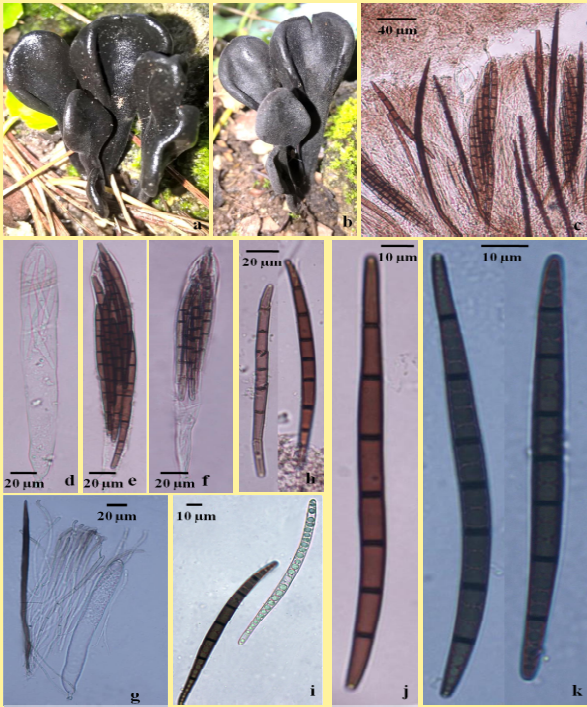
Other than action plan project



Gen. et. sp. nov. on *Mesua ferrua*



Documentation of Mushroom diversity



Trichoglossum rasum Pat. (1909) with first molecular phylogeny



Cyathus gayanus Tul. & C. Tu

•Research papers

Published after joining BSI : 6, Published before joining BSI: 8

- **Prabhugaonkar A.** and S. K. Singh. 2016 A disjunct birds nest fungus *Cyathus gayanus* newly recorded from Asia. Keanean journal of science 5, 13-16
- Pratibha J. and **Prabhugaonkar A.** 2016 – Distribution and phylogeny of *Mycosisymbrium cirrhosum*. Mycosphere 7(1), 44–50
- Pratibha J. and Bhat DJ, **Prabhugaonkar A.** 2016 – Molecular phylogeny of *Speiropsis pedatospora*. Mycosphere 7 (5), 679–686
- Pratibha J. and **Prabhugaonkar A.** 2015. Multi-gene phylogeny of *Pithomyces* with the sexual morph of *P. flavus* Berk. & Broome. Phytotaxa 218 (1): 084-090
- Pratibha J. and **Prabhugaonkar A.** 2015. New record of *Thysanorea papuana* from India. Mycosphere 6(4), 481–485

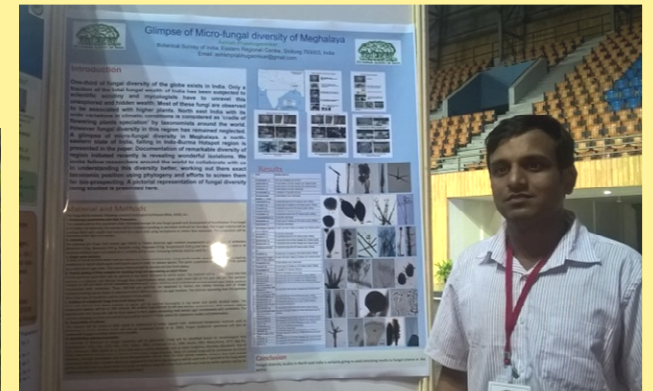
Conferences (2), Workshops (2) and Lectures (2)

- Member of local organizing committee ‘Asian Mycological Congress, 7-10 October 2015 at Goa University
- Workshop on “North east India Biodiversity portal” at NEHU from 23-25th September, 2015
- MSI conference ‘ETFPP-2016’, 16-18 February at Banaras Hindu University, Varanasi
- Talk on ‘Poisonous mushrooms’ geological survey of India on 30/11/2016.

•Administrative

- Maintained attendances register for employees.
- Liaison officer for filling up of NPR forms (Aadhar)
- Assisted HOO whenever required (eg. RCM).
- Completed store verification and submitted report
- सहायक हिन्दी अधिकारी
- Worked as member of various Internal committees and Interview panel at BSI-ERC
- DDO whenever required
- Guided visiting students

Memories of 2015-16 ...



Achivements

Novelties: 2 new Species (1 plant, 1 fungus), 1 new Genus (fungus)

New Reports: 46 (7 fungi to India, 39 plants to state flora of Goa)

First molecular phylogenies published: 10 (Epitypes designated 5)

Future plans

- **Survey of remaining host plants for associated fungal diversity**
- **Strengthening fungal culture collection**
- **Increasing collections of fungi in Herbarium**
- **Molecular phylogenetic analysis of rare and interesting fungi isolated**
- **Deposition of such cultures in national repositories**
- **Publication of research work**
- **Study of ‘Palm associated fungi of NE region’ project proposal under preparation.**

Acknowledgements

I take this opportunity to thank Director, Botanical survey of India and Head, Botanical Survey of India, Eastern Regional Centre, Shillong for support and encouragement. All senior scientists and co-workers at BSI-ERC for wonderful working environment.



Thank you