

Summary Report

Training Course on Microbial Resource Information Management for Developing Countries by WDCM

at

Institute of Microbiology, CAS, Beijing

Dr. Rajesh Kumar K.C. National Fungal Culture Collection of India,

Pune, INDIA

rajeshkumar@aripune.org, rajeshfungi@gmail.com

Contents

- Personal Introductions
- Abstract
- Keywords
- Brief Introduction about NFCCI WDCM 932, ARI Pune
- Benefits from the training courses
- Suggestions on WDCM work
- Comments or Suggestions on the training courses
- Suggestion on further cooperation between WDCM and your collections.

Personal introduction

Dr. Rajesh Kumar K.C., Currently working as a Scientist in National Fungal Culture Collection of India, Agharkar Research Institute Pune, INDIA. I have expertise is in fungal taxonomy and phylogeny and working on diversity, phylogeny, ex situ conservation of micro-fungal in the Western Ghats and Indian Himalayas. I have Published 01 new Genus, 7 new species and 2 new combinations of micro fungi. Previously I worked as a Post Doctoral Research Scientist with CABI UK (IMI) for one year, before Joining NFCCI in 2008.

***NATIONAL FUNGAL CULTURE COLLECTION OF INDIA
(NFCCI-WDCM 932) PUNE, INDIA***

ABSTRACT

The training course on Microbial Resource Information Management for Developing Countries by WDCM at Institute of Microbiology, CAS, Beijing gave great insight on the Basics of Culture Collection activities, Nagoya Protocols, WFCC, WDCM and modern tools and databases associated with Culture Collection Database management. The training sessions and presentations enhances to understanding the WDCM and

GCM and opportunities existing in the World of Microbiology research and Culture Collection activities.

Key words: WFCC, GCM, WDCM 932, NFCCI, FUNGI, ARI PUNE, INDIA

1. Brief introduction of your Culture Collection.

National Fungal Culture Collection of India (Acronym- NFCCI) is a unique national facility established in 2008 by Department of Science and Technology, Government of India, New Delhi at Agharkar Research Institute, Pune. It is an affiliate member of World Federation for Culture Collections (WFCC) and is registered with the World Data Centre for Microorganisms (WDCM-932). This facility has been established with the overall aims to conserve fungi as genetic resource pools for future research, capacity building in thrust area of taxonomy (HRD) and to provide service (s) in authentication of fungi. NFCCI is an exclusive repository holding over 3500 strains of different groups of fungi. The NFCCI has several competent scientific and technical staff who executes the responsibilities.

Pure cultures of fungi are becoming increasingly important in diverse fields such as agriculture, medicine and industrial biotechnology. Tropical fungal biodiversity deserves exploration and conservation in pure cultures

as a pre-requisite to advance researchers in areas such as diseases, control, exploration for novel bioactive molecules and industrial enzymes. Our knowledge of tropical fungal biodiversity as well as availability of pure cultures for R & D process needs greater emphasis to be laid for future scientific advances in fungal-based technologies. The national facility comprising of following activities:

Repository: Receipt, verification, preservation, maintenance and accession of cultures are the core activities which are undertaken on routine basis. Conservation of diverse fungal strains under optimal conditions is undertaken following standard protocols, viz., preservation in glycerol, mineral oil, sterile distilled water and in lyophilized form. In addition, authentic strains are also preserved in liquid nitrogen (cryopreservation). Inventories and databases are developed to store relevant information on cultures maintained in NFCCI.

Services: With the available expertise, services for morphological & molecular identification of fungal cultures, analysis for TVC/CFU, deposition and accession of fungal culture are provided. In addition, authentic fungal strains are also supplied to academia, research institutions and industries.

R & D: The facility is also a centre of active research focusing on diversity and taxonomy of fungi, which is a topic of great interest. Mycodiversity exploration, identification (by polyphasic approaches),

characterization and documentation of micro and macrofungi of diverse taxonomic groups (incl. lichenized fungi) are undertaken. Concerted efforts are being made to bring into pure culture of diverse fungi including rare and less investigated taxa for conservation and biotechnological applications. In addition, screening of fungi of different taxonomic groups for polyketide pigments production and in-silico analysis is also undertaken to understand the involvement of polyketide synthase (PKS) in different biological processes of pigment production.

Human Resource Development: National level workshop is conducted to capacity building in thrust areas of fungal taxonomy and ex-situ conservation. However, individual training is also imparted on request.

Agharkar Research Institute (ARI) established in 1946 under the auspices of Maharashtra Association for the Cultivation of Science (MACS) has developed and sustained high level expertise in mycology and plant pathology. Reputed mycologists of yesteryears have pioneered extensive studies on Indian fungi for over 60 years, which has received national and international recognition.

Fungal resources of India are huge, and mycologists have been working on fungi since the turn of last century and numerous novel and interesting forms have been described and reported from India which accommodates

one of the largest biodiversity gene pools of the world. Application of fungi for biotechnological processes necessitates long term conservation of pure culture of wild strains, mutants and recombinants ensuring morphological and genetic stability. We wish to appeal to the community of research personnel involved in fungal biology and biotechnology in our country to deposit their valuable germplasm of fungi in this collection. We strive to conserve them under appropriate optimal conditions, and such deposits would contribute to the heritage of germplasm for future biological and biotechnological research in our country.

Department of Science and Technology (DST) Government of India has established a National Facility for Culture Collection of Fungi for Indian fungal germplasm collection, identification and conservation as a fitting recognition of established expertise in fungal biology at ARI.

The scientists of DST-National Facility are currently involved in research programmes related to diversity, systematic and bio-prospecting of fungi. The laboratory is well equipped with modern facilities and the research staff well trained in mycological research and in-vitro conservation of fungi.

2. Benefit from the training courses.

- NFCCI will become a future a partner of WCM of WFCC WDCM.
- We are benefited in a great way to get the visibility to our

Institution and Culture Collection through this training course

- Quality improvement of culture collection will happen through WDCM support in future through WCM statistics.
- This training provided complete information related to bacteria, fungi and database development.
- WDCM opened an opportunity for NFCCI to be an active partner from India and to support the functions of WDCM in India.
- GCM and ABC will be a future platform for establishing NFCCI in a global level from acting in a local level.
- Interactions with partner countries encouraged collaboration together for future culture collection related interactions, workshops and research and development plan.
- Talks from Dr. Philippe Desmeth regarding Nagoya Protocols were informative and will help to disseminate the role of such International treaties in India.
- Dr. Tae Eun Jin from KCTC elaborated the unified model of database management needed by every country for their biological diversity and data curation.
- Dr. Stephan talk help to understand the technical points related to Nagoya Protocols and compliances
- Dr. Man Cai provided in depth knowledge about the basic and applied aspects of bacterial taxonomy

- Dr. Wang Youzhi talk on fungi and informative but needed lot more updates as per modern polyphasic taxonomy standards in fungi.
- The group meeting with UNESCO Science office Beijing, WFCC President and WDCM Director was a great opportunity for NFCCI to represent and share the problems and discuss future perspectives and collaborative efforts to be developed for NFCCI Pune India.
- Prof. Hideaki Sugawara from NIG Japan opened the Pandora of informations related to annotations and integrated retrieval of genomic sequences and databases applicable for culture collections. His lecture was great and very informative for every culture collections in the world.
- Dr. Juncai Ma helped NFCCI to understand the WDCM and amazed with the quality of work WDCM performing as a world leader of culture collections and urged NFCCI become a long term committed member and partner of WDCM.
- Dr. Wu Linhuan was supportive and very good in communication that helped us to resolve all doubts related to WCM database use and upload of data. I appreciate Dr. Wu for her sincere suggestions and support for uploading and verifying the NFCCI data and supporting NFCCI to place in GCM.
- Ms. Jianyuan Zhang was supportive in coordinating all the activities related to the training program and helped in a great way

to understand WDCM webpage and also NFCCI admire all her service for making NFCCI a partner of WDCM-GCM.

- Mrs. Sun and other colleague supported NFCCI to more technical part of GCM that will help to work in these system better in future.

3. Suggestion on WDCM work.

WDCM is a professional team coordinated international standards in work culture, NFCCI sincerely appreciate the work ethics and etiquettes followed in CAS as well as WDCM. NFCCI expects WDCM to play a lead role and a platform for future development of culture collections all over the world and coordinated action for economic development of humanity.

1. Comments or suggestion on the training courses.

- I personally wish to have a larger audience from Institute of Microbiology, CAS during the participating countries presentations so that it will enhance the opportunity to collaborate Institute of Microbiology, CAS in research and development worldwide through WDCM.
- If it is possible, I request to keep a network of participants and

inform all the participants about the development of WDCM and future initiatives and programs through email. All the participants are enthusiastic to hear WDCM future vision that will help NFCCI and every country to upgrade and standardize the culture collection activities through mutual partnership.

- I request WDCM to connect NFCCI webpage (other Culture Collections too, One having their own webpage) through GCM-WDCM to enhance the visibility and complete details regarding Individual Culture Collections and expertise to the world.
- NFCCI expect WDCM support in making the database accurate and standard and also expect WDCM support in developing Statistical Data for submitting to the Head office and funding agencies.

5. Suggestion on further cooperation between WDCM and yourcollections.

First of all, NFCCI wish WDCM Director Dr. Juncai Ma to visit Pune, The City with 3 Important Culture Collections of India and coordinate future collaborations in elaborative way.

NFCCI is a young and dynamic culture collection with 99% of Indigenous fungal cultures and application potential of these fungi must be explored for future development.

NFCCI got expertise in fungal taxonomy, especially polyphasic taxonomy of fungi and mycologists who has expertise in culture collections, a long term collaboration between NFCCI and WDCM will definitely makes the Asian Coordinated Activity in Culture Collection activities that can set as an example in world platform. India needed a Collective coordinated network of culture collections so that the biological diversity of microorganisms can to explore intensely for future biotechnological applications.

NFCCI conduct Human Resource Development Programs through training budding microbiologists/mycologists/plant pathologists in India, We need WDCM and WFCC participation to support NFCCI for future workshop training programs at NFCCI, Agharkar Research Institute, Pune. NFCCI also needs Dr. Juncai Ma and team to NFCCI to share their expertise to Indian young talents and researchers to enhance their understanding about WFCC/WDCM and CAS.

NFCCI understand the great contributions of Mycology Key Laboratories at Chinese Academy of Science and expect Dr. Juncai Ma 's support and advice to establish collaborative research programs with Professors like Prof. Lei Cai, and also with WDCM; Dr. Wu Linhuan and Mrs. Sun.

NFCCI is established with quality laboratories, repositories and service for more than 300 academic/research institutions and about 30 Indian companies; Guidance and support from WDCM will be grateful for coordinate efforts to make NFCCI a global standard ISO accredited institution in future

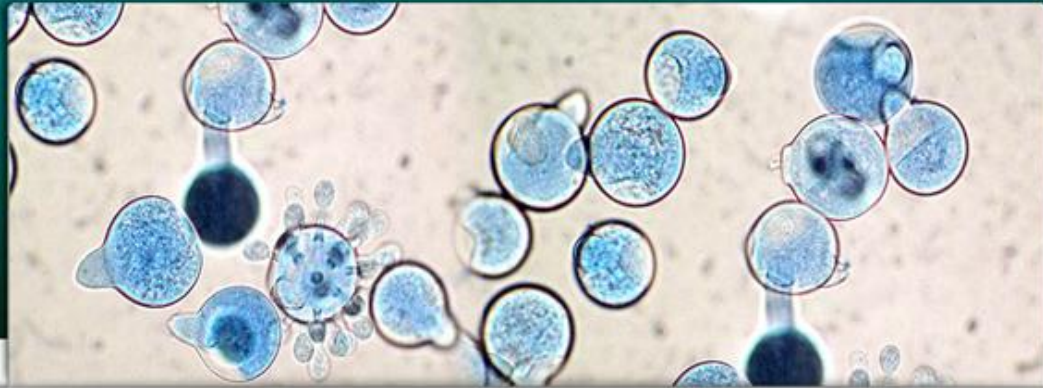




भारतीय राष्ट्रीय कवक संवर्धन संग्रह- एक राष्ट्रीय सुविधा
National Fungal Culture Collection of India
NFCCI-A National Facility



[Home](#) [About Us](#) [Services](#) [Catalogue](#) [Charges](#) [Resources](#) [Training & Workshop](#) [Scientific Staff](#) [Publication & Patents](#) [Photo Gallery](#) [Contact](#)



Welcome to National Facility

Agharkar Research Institute (ARI) established in 1946 under the auspices of Maharashtra Association for the Cultivation of Science (MACS) has developed and sustained high level expertise in mycology and plant pathology. Diverse myceliotype of organisms have discovered, isolated, studied as to their food for use as bioresources which has

National Fungal Culture Collection of India (NFCCI WDCM 932) organizes national level workshop on
'Taxonomy, Ex- situ Conservation and Bio-prospecting of Fungi'
for catering relevant training to young and budding researchers in thrust areas for sustainable utilization of indigenous mycological resources.

1st National Workshop [25th May to 8th June 2012]

2nd National Workshop [26th November to 10th December 2012]



