

Training Course on “*Microbial Resources Information Management and Utilization for Developing Countries*”, Beijing Sep 2-15th 2014

Personal introduction (less than 100 word) (Times New Roman, 14)

I'm Dr Dioumacor FALL, Soil Microbiologist, researcher at the Senegalese Institute of Agricultural Research (ISRA) in Dakar, Senegal. I got my PhD at the University of Cheikh Anta DIOP of Dakar (Senegal) in 2009 on Soil Microbiology. I recruited at ISRA in 2011 and I'm based at the Commun Laboratory of Microbiology IRD/ISRA/UCAD (LCM). My research activities focus on diversity, selection and use of symbiotic soil microorganisms (rhizobia frankia, PGPR and mycorrhiza) to improve growth, productivity and adaptation to adverse conditions of food and forestry plants. I have 20 publications (10 peer reviewed papers and 10 conference abstracts). I coordinate and I'm associated to many national and regional projects on the use of soil symbiotic microorganisms to improve plants productivity and the restoration of degraded lands. I participate to the supervision of Master and PhD students of our laboratory.

Name of your culture collection (Times New Roman,14)

Registered number in WDCM: 53

Acronym : MAO

Full name : MIRCEN Afrique Ouest

ABSTRACT

(Times New Roman, 14)

The training course includes 21 participants divided into 16 nationalities from Africa, America, Asia and Europe. After the opening ceremony by the Director of WDCM, Dr. Juncai Ma, the training course started with the presentations of the President of WFCC, Dr. Philippe Desmeth, on the Building TRUST Literally and Practically and Necessary Legal Policy for Culture Collections. After the presentation of Dr. Lyle Glowka on Evolving Perspectives on Marine Genetic Resources, the Management of biological resource in South Korea was presented by Dr. Tae-Eun Jin. The Nagoya Protocole was presented by Dr. Geoff Burton and the WDCM by Dr. Juncai Ma. After visiting the CGMCC, a meeting of revitalization of MIRCEN was organized between the participants, WDCM, UNESCO and WFCC. After the presentation of Dr. Juncai Ma on how can WDCM helps us, MIRCEN and culture collections, Hans Dencker Thulstrup gave a communication on UNESCO and the Basic Sciences from MIRCEN to IBSP.

After these introductory presentations, other communications focused on the data practices on the Annotation and retrieval of microbial genome (Prof. Hideaki Sugawara), Microbial genome analysis: SILVA/MLST (Dr. Chen Chen), WFCC Global Catalogue of Microorganisms (Dr. Wu Linhuan), WDCM databases: WFCC homepage, CCINFO and Reference strain (Ms. Zhang Jianyuan), Data Standards of Microbial resources (Dr. Wu Linhuan), WDCM Analysis of Bio-resources Citations (Dr. Wu Linhuan), Bold mirror (Dr. Liu Di) and Microbial genome annotation pipeline (Dr. Liu Li). Dr. Mamadou GUEYE presented the Microbiology Research CENTER (MIRCEN) and the Biodiversity: Management and Risk Assessment. During the training course, all the participants presented their culture collection.

Key words: (Times New Roman, 14)

, WDCM, WFCC, GCM, MIRCEN, CCINFO, Culture Collections, Microorganisms, Senegal, Nagoya Protocole

Contents (Times New Roman, 14)

1. Brief introduction of your Culture Collection.

Our culture collection was registered 53 in the WDCM, acronym MAO, full name MIRCEN Afrique Ouest. It was created in 1983, hosted by ISRA/CNRA-Bambey and directed by Dr Mamadou GUEYE. Now this collection is hosted by the Common Laboratory of Microbiology

IRD/ISRA/UCAD of Dakar (LCM). The LCM, created in 2004 and certified ISO 9001: 2008 in 2008, includes three institutions; the Institute of Research for Development (IRD, France), the Senegalese Institute of Agricultural Research (ISRA, Senegal) and the University of Cheikh Anta DIOP of Dakar (UCAD, Senegal).



Institute of Research for Development (IRD, France)



Senegalese Institute of Agricultural Research (ISRA)



University of Cheikh Anta DIOP (UCAD, Dakar)

The staff our laboratory is about 34 persons as followed:

- 12 researchers belonging to IRD, ISRA and UCAD
- 05 post-doc
- 06 technicians
- 08 PhD students
- 03 Master

However our laboratory receive trainees from the sub-region (Mali, Burkina Faso, Niger, Morocco, Benin,...) or France and produces yearly at least 15 peer reviewed papers.

Our laboratory has three missions:

- a) Basic and applied research on phenotypical and genotypical diversity of nitrogen-fixing bacteria (rhizobia and frankia), PGPR and mycorrhizal fungi.
- b) Training of students, technicians and farmers on isolation, selection, use and conservation of strains.
- c) Valorization and dissemination of our results.

Our services are to identify storage and distribute high effectiveness soils symbiotic microorganisms (rhizobia frankia, PGPR and mycorrhiza).

Our MIRCEN culture collection started in 1983 with 210 strains (200 bacteria and 10 algae) but now it gradually merges with the collection of the LCM. Currently, our culture collection (LCM+MIRCEN MAO) has increased with approximately more than 2400 rhizobial strains, around 10 mycorrhizal strains, and 5 PGPR strains. Most of strains are phenotypically characterized but for the genetic characterization, we do also the PCR-RFLP of IGS 16S-23S, 16S and 18S rDNA. For the sequencing, we send our strains to Europe. Most of rhizobial strains belong to *Rhizobium*, *Mesorhizobium*, *Sinorhizobium* and *Bradyrhizobium* genera et for the mycorrhizal strains, they belong to *Glomus*, *Gigaspora*, *Acaulospora*, *Pisolithus*, *Scleroderma*,... genera and the PGPR to *Pseudomonas* genus.



i. Research activities



ii. Training activities



iii. Valorization activities



Microscopy equipment



Microbial culture equipment



PCR-RFLP equipment



Fiche Signalétique d'une Souche Sauvage

LCM:

SOUCHE SAUVAGE

Autres Noms : <input type="text" value="Tha25, LMG11854"/>	Genre et espece : <input type="text" value="Rhizobium sp."/>
Plante Isolement : <input type="text" value="Sesbania rostrata"/>	Type Isolement <input checked="" type="checkbox"/> Directe sur plante <input type="checkbox"/> Piègeage tube Gibson <input type="checkbox"/> Piègeage sol <input type="checkbox"/> Autres
Lieu Isolement : <input type="text" value="LCM"/>	
Date Isolement : <input type="text" value="01/07/1991"/>	
Isole Par : <input type="text" value="L. Nassiri"/>	Pays : <input type="text" value="Sénégal"/> Profondeur: <input type="text"/>
Caractéristique du Sol : <input type="text"/>	Type Nodule : <input type="radio"/> Ronde <input type="radio"/> Tréfle <input type="radio"/> Allongée <input type="radio"/> Autre
Nod + sur : <input type="text"/>	

Mise en Collection le : **Age actuel** Ans

Destination: Date Sortie :

Remarques :
Colonies roses peu muqueuses sur YMA, croissance lente sur YL

Datasheet of each strain of our culture collection

2. Benefit from the training courses.

Before all, I would like to thank very much the WDCM, the WFCC and all the sponsors of the training course for given me the opportunity to participate to this important event. It's a pleasure for me to resume here the main benefit of the training course:

- Visiting, sharing and discussing with WDCM, WFCC, UNESCO staff
- Better knowledge of culture collection management,
- Collaboration with others cultures collections,
- Facilities to find a strain in GCM,
- Visibility of our institute and culture collection,

3. Suggestion on WDCM work.

I suggest the WDCM to assist the collections which are not sufficiently characterized and not yet registered to the GCM. I strongly suggest the WDCM to help African culture collections.

4. Comments or suggestion on the training courses.

- Accommodation conditions are excellent. However, it would be good to have a staff that welcomes participants to the airport.
- The presentations were clear, improving with many illustrations. For the database practice sessions, it would be nice to go slowly so that the participants can follow correctly. It will be good to have the electronic file of all the presentations. It would also be nice to set up a network between the different participants to better share information.

5. *Suggestion on further cooperation between WDCM and your collections.*

For the cooperation between WDCM and our collection, at first we need assistant to:

- well characterize (sequencing) some strains of our culture collection,
- join the Global Catalogue of Microorganisms (GCM),
- revitalize our MIRCEN center (WDCM 53, Acronym MAO) for West Africa.

We need also building capacity (training courses, workshops,...) on microbial data resources management and develop some visiting young scientists programs (bioinformatics knowledge and tools, Development and manipulation of microbiological informatics platform,...).

By

Dr. Dioumacor FALL, Soil Microbiologist, Researcher at ISRA

Adresse : Laboratoire Commun de Microbiologie IRD/ISRA/UCAD (LCM), Centre de Recherche de Bel-air, Route des Hydrocarbures, BP 1386, CP 18524, Dakar, Senegal.

E-mail: dioumacorfall@yahoo.fr / dioumacor.fall@isra.sn

Tel : +221 77 532 37 91

Skype : dioumacor.fall1