

**Format for Online Annual/Final Report**

1. Project Title: **Documentation of fungal biodiversity through DNA barcoding and digitization**
2. Sanction No.: 1357/F/AS&FA(DARE/ICAR)/2014 dated 3-7-2014
3. Date of Start: 10.06.2015
4. Date of Termination: 31.03.2017
5. Actual Location(Location of research scheme to be carried out): Division of Plant Pathology, IARI, New Delhi
6. Principal Investigator  
Name: Dr. T. Prameela Devi  
Designation: Principal Scientist
7. Division/Section: Division of Plant Pathology
8. Address: ICAR-IARI, New Delhi
9. Co-Investigator  
Name: Dr. Deeba Kamil  
Designation: Scientist (S.S.)
10. Division/Section: Division of Plant Pathology  
Address: ICAR-IARI, New Delhi
11. Duration of Project: 2 Years
12. Total amount sanctioned: (in case of extension) 88.10 Lakhs
13. Total amount spent: 10.50 Lakhs
14. Result of Practical/Scientific Value: (200 chrs)
  - Diseased specimens of plants and soil samples from Meghalaya state (East Khasi Hills district) were collected.
  - The fungi from soil and diseased samples were isolated and purified. The identifications were done based on morphological characters (cultural and microscopic) and DNA sequence based analysis was done where the morphological characters were not enough for species identification.
  - Diseased specimens at HCIO and pure cultures at ITCC were deposited for enrichment and for further use.

- Isolation of DNA was done from 43 ITCC and 14 newly collected isolates belonging 21 species of *Penicillium*. All these species were identified using the combined approach of morphology and ITS region analysis.
- DNA barcodes were developed for 57 *Penicillium* isolates.
- 5000 fungal specimens of *Cercospora*, *Alternaria*, *Bipolaris* and Smut fungi at HCIO and 9 species of *Chaetomium*, five species of *Bipolaris* and 20 species of *Trichoderma* of ITCC cultures were digitized and documented.

### **Papers Published: (300 chrs)**

#### **Papers published in peer reviewed journal (NAAS rating may be given):**

1. Chandra Sekhar V, Prameeladevi T and Deeba Kamil 2015. A combined morpho-molecular approach towards identification of *Chaetomium* species of India *Journal of Pure and applied Microbiology* 9(3):2479-2490. (NAAS - 6.00)
2. Deeba Kamil, Prameeladevi T, N. Prabhakaran, R.K. Sharma 2015. NADH Dehydrogenase Sub unit 6: A suitable secondary Barcode for speciation of Genus *Fusarium* *Journal of Pure and applied Microbiology* 09: 545-551. (NAAS - 6.00)

#### **Papers presented at scientific meetings:**

T.Prameela Devi and Deeba Kamil. Biodiversity, Taxonomy, Conservation and Documentation of fungi of India.

The International conference on “Advances in Plant and Microbe Research” organized at Acharya Nagarjuna University, Guntur (A.P) during 6<sup>th</sup> to 8<sup>th</sup> January 2016.

T.Prameela Devi, N. Prabhakaran and Deeba Kamil. Morphological and molecular systematics of genus *Trichoderma*.

6th International Conference on “Plant, Pathogens and People” to be organised at I.A.R.I, New Delhi, India from February 23-27, 2016

Deeba Kamil and T. Prameela Devi. Development of DNA Barcoding system at Indian Type Culture Collection (ITCC), a National repository for authentic identification of fungal species.

6th International Conference on “Plant, Pathogens and People” to be organised at I.A.R.I, New Delhi, India from February 23-27, 2016

#### **First prize**

Rubin Debbarma, Deeba Kamil, T.Prameela Devi, Dama Ram, R. Sudeep Toppo and Akansha Tyagi. Morpho-molecular approach for species delineation of genus *Penicillium*  
6th International Conference “Plant Pathogens and People”, Feb. 23-27, 2016, New Delhi, India.

***Second prize***

Dama Ram, T.Prameela Devi, Deeba Kamil, Vikram P. Sharma, Rubin Debbarma and O.P. Singh. A combined morpho – molecular approach towards identification of *Curvularia species* 6th International Conference “Plant Pathogens and People”, Feb. 23-27, 2016, New Delhi, India

***Third Prize:***

Priti Sonavane, T. Prameela Devi, Deeba kamil, Robin Gogoi and A. Kumar. Phylogenetics analysis and selection of candidate DNA barcode for *Bipolaris* sp. 6th International Conference “Plant Pathogens and People”, Feb. 23-27, 2016, New Delhi, India

Manuscripts under preparation:

Prameela Devi T.,<sup>1</sup> Ravi Mehndiratta, Deeba Kamil and N. Prabhakaran (2012). Molecular and Morphological Diversity of *Rhizoctonia bataticola* Causing Dry Root Rot disease from India (Under review in Plant Pathology Journal)

Patents and products developed: (300 chrs): nil

Detailed Progress Report (to be annexed): (400 chrs): Attached as Annexure I

15. Signature:

Name:

Designation:

Principal Investigator:

Date Director or Head of Institution/Station:

16. Comments of the Lead Centre Platform Coordinator:

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17. Remarks of the SMD:

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