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RESIDENCE:
"Professor House"
Dakshin Goalpara, Debinagar
(Near Bondhan bank), Raiganj-
733134, Uttar Dinajpur, West
Bengal, Bharat (India)

Parimal Mandal, M.Sc., Ph. D.

Associate Professor

Department of Botany, Raiganj University
Mycology and Plant Pathology Laboratory [MPPL]

Academic Qualification

Ph. D. (Science) in Botany, January 8th, 2010

[Induction of defense in Tea (*Camellia sinensis* (L.) O.Kuntze) by biotic and abiotic inducers against *Lasiodiplodia theobromae* (Pat.) Griffon & Mauble for management of diplodia disease]

University of North
Department of Botany

Joint UGC-CSIR NET, 2002

M. Sc. in Botany, 1999 [Specialisation- Mycology and Plant Pathology]

University of North
Department of Botany

B. Sc. (Hons.) in Botany, 1997

University of North Bengal
Balurghat College

Professional Experience

- Raiganj University [Associate Professor (Stage-IV)]
November 9th, 2018 – to present
- Raiganj University [Assistant Professor (Stage-III)]
November 9th, 2015 - November 8th, 2018
- Raiganj University [Assistant Professor (Stage-II)]
February 3rd, 2015- November 8th, 2015
- Raiganj College (University College) [Assistant Professor (Stage-II)]
December 2nd, 2014 – February 2nd, 2015
- Shyampur Siddheswari Mahavidyalaya [Assistant Professor (Stage-II)]
November 9th, 2010 - December 1st, 2014
- Shyampur Siddheswari Mahavidyalaya [Assistant Professor (Stage-I)]
November 9th, 2006 - November 8th, 2010

Career Objective

Dedicated academician and researcher with expertise in Botany, Plant-Microbe Interactions, Macro fungal study and Mushroom Cultivation, Mycology, and Sustainable Agriculture, committed to advancing scientific knowledge, guiding young researchers, and contributing to institutional growth through quality teaching, research, and administration

Research Team Members

- Dr. Zerald Tiru, Assistant Professor in Department of Botany, Raiganj University
 - Ms. Archita Singha, Ph. D. Research Scholar
 - Ms. Subhra Chakraborti, Ph. D. Research Scholar
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Research Guidance

Ph.D. Supervised:

1. Screening, isolation and identification of Plant Growth Promoting Fungi (PGPF) of rice and antagonistic microorganisms from rhizosphere and study of their potential effects against major fungal pathogen of rice of Uttar Dinajpur, West Bengal - by **Mrs. Monalisha Sarkar** (May 11th, 2023)
 2. Promotion of growth and management of rot disease of maize (*Zea mays* L.) Caused by *Fusarium moniliforme* with biotic and abiotic agents - by **Mr. Zerald Tiru** (June 13th, 2024)
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Teaching Responsibilities

- Mycology and Plant Physiology, Phycology, Ecology, Plant Breeding, Biotechnology, Plant Tissue Culture, Plant Reproduction Biology, Research Ethics
 - Guidance of UG, PG, and Ph.D. students
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Administrative & Academic Responsibilities

- Member, Board of Studies (Botany), Raiganj University
 - Chairman of Departmental Committees, Department of Botany, Raiganj University
 - Chairman of UG Council, Department of Botany, Raiganj University
 - Chairman, of PG Council, Department of Botany, Raiganj University
 - Secretary, Ph.D. Committee, Department of Botany, Raiganj University
 - Member, Board of Research Studies, Department of Botany, Raiganj University
 - In-Charge, AASM Medicinal and Aerometric Plant Garden, Raiganj University
 - Additional Director, AASM Medicinal and Aerometric Plant Garden, Raiganj University
 - Member, Bio safety Committee, Raiganj University
 - Centre In-charge, Examination Committee
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Project and Grants

1. **Technical Assistant** for the project entitled “Demonstration and promotion of Mushroom Cultivation for the sustenance of SC, ST & Weaker Section of North Bengal’ funded by Department of Biotechnology, Govt. of India [25th May 25th, 2001 -April 1st, 2002
 2. **JRF and SRF** for the project entitled “Induction of Systemic Resistance in *Camellia sinensis* by biological inducers against *Lasiodiplodia theobromae*’ ad-hoc Research project funded by CSIR [April 1st, 2002 – March 31st, 2006]
 3. **Principal Investigator** for the project entitled “Workshop, promotion and sustainable development of Mushroom Cultivation for rural women and youths’ funded by UGC [January 25th, 2012 – January 24th, 2014]
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Membership of Society/Association

1. Indian phytopathological society [**Life Member**] from August 02, 2018.
2. Academy for Advancement of Agriculture Science [**Life Member**] from 2018

Award & Honor

1. A. Saha, **P. Mandal** and S. Dasgupta (2003): Jasmonic acid induced systemic resistance of tea to *Botryodiplodia theobromae* Pat. This paper was Adjusted the **Second** during the 25th annual conference and symposium, Indian Society of Mycology and Plant pathology at A.R.S. Durgapura, Jaipur at October, 8 to 10, 2003.

Patent

1. **PROCESS OF PREPARING GANODERMA LUCIDUM BASED HEALTH PROMOTING TEA COMPOSITION [Patent No. 570147] - 2025**

Selected Publications

1. Chakraborti, S., Dutta, S., Behera, V. *et al.* Molecular characterization, protein and amino acid profiling of *Pleurotus* species using ITS sequencing, SDS-PAGE and HPLC techniques. *Vegetos* (2025). <https://doi.org/10.1007/s42535-025-01329-4>.
2. Zerald Tiru and Parimal Mandal Subhra Chakraborti, Surajit Khalko. Comparative Analysis of Cultivation and Morphological Features of Four *Pleurotus* Species on Agro Waste. *J. Agric. Technol.* 2025/3
3. Chowhan, P., Das, D., Mandal, P., & Chakraborty, A. P. (2023). Studies on variability in mode of infection by the isolates of leaf pathogens isolated from diseased leaves of *Musa paradisiaca* from Uttar Dinajpur District, West Bengal. *Nelumbo*, 65(2), 142-146.
<https://doi.org/10.20324/nelumbo/v65/2023/172997>
4. Swarnakar, Shambhu, Papan Chowhan, Zerald Tiru, Parimal Mandal, and Arka Pratim Chakraborty. "New Report on *Fusarium equiseti* Causing Yellow Leaf Disease of *Brassica juncea* (L.) Czern from Karandighi, Uttar Dinajpur, West Bengal, India." (2022). <https://doi.org/10.55734/nbujps.2022.v14i01.003>
5. Monalisha Sarkar, Zerald Tiru, Ayon Pal, Parimal Mandal. Screening of Plant Growth Promoting Fungi (PGPF) for Sustainable Cultivation of Tulaipanji, an

Endemic Aromatic Rice Variety of Uttar Dinajpur, West Bengal, India. Agricultural Science Digest. <https://arccjournals.com/journal/agricultural-science-digest/D-5561>.

6. Monalisha Sarkar, Zerald Tiru, Ayon Pal, Arka Pratim Chakraborty, Parimal Manda. Screening of heavy metal stress tolerant fungal isolates for bioremediation and restoration of soil health. Vegetos. <https://doi.org/10.1007/s42535-022-00417-z>
7. Monalisha Sarkar, Zerald Tiru, Ayon Pal and Parimal Mandal. Antagonistic role of fungal biocontrol agents for sustainable Management of rice blight caused by *Curvularia lunata*. *Applied Biological Research* 24(2): 191-202; (2022). <http://dx.doi.org/10.5958/0974-4517.2022.00023.4>
8. Zerald Tiru, Monalisha Sarkar, Ayon Pal, Arka Pratim Chakraborty and Parimal Mandal. Three dimensional plant growth promoting activity of *Trichoderma asperellum* in maize (*Zea mays* L.) against *Fusarium moniliforme*. Archives of Phytopathology and Plant Protection. <https://doi.org/10.1080/03235408.2020.1860420>
9. Zerald Tiru, Monalisha Sarkar, Arka Pratim Chakraborty, Ayon Pal, Parimal Mandal. *In Vitro* Antagonistic Study of Maize Root Colonizing Fungal Isolates Against *Fusarium moniliforme* Causing Ear Rot Disease of Maize. Journal of Tropical Life Science 2021, Vol. 11, No. 2, 133 - 139. <http://dx.doi.org/10.11594/jtls.11.02.02>
10. Zerald Tiru, Monalisha Sarkar, Arka Pratim Chakraborty, Ayon Pal, Parimal Mandal. Effect of different vegetable-grains media on variability in mycelial growth pattern and sclerotia formation of *Rhizoctonia solani*. Journal of Advanced Scientific Research.
11. Nandi PS, Mandal P, Pal A and Chakraborty K. Morphological and molecular characterization of fungi associated with mango mealy bug secreted honey dew in mango tree leaves and twigs. International journal of scientific & technology research. volume 9, issue 03, March 2020.
12. Jayanti Saha, Monalisha Sarkar, Parimal Mandal, Ayon Pal. Comparative Study of Heavy Metal Uptake and Analysis of Plant Growth Promotion Potential of

Multiple Heavy Metal-Resistant Bacteria Isolated From Arable Land. *Current Microbiology*. <https://doi.org/10.1007/s00284-021-02704-5>

13. Ayon Pal, Sukanya Bhattacharjee, Jayanti Saha, Monalisha Sarkar and Parimal Mandal. Bacterial survival strategies and responses under heavy metal stress: a comprehensive overview. *Critical reviews in microbiology*. <https://doi.org/10.1080/1040841x.2021.1970512>
14. Jayanti Saha, Sukanya Bhattacharjee, Monalisha Pal Sarkar, Barnan Kumar Saha, Hriday Kumar Basak, Samarpita Adhikary, Vivek Roy, Parimal Mandal, Abhik Chatterjee, Ayon Pal. A comparative genomics-based study of positive strand RNA viruses emphasizing on SARS-CoV-2 utilizing dinucleotide signature, codon usage and codon context analyses. *Gene Reports* 23 (2021) 101055. <https://doi.org/10.1016/j.genrep.2021.101055>
15. Saha J, Saha BK, Pal Sarkar M, Roy V, Mandal P and Pal A. Comparative Genomic Analysis of Soil Dwelling Bacteria Utilizing a Combinational Codon Usage and Molecular Phylogenetic Approach Accentuating on Key Housekeeping Genes. *Front. Microbiol.* 10:2896(2019). <https://doi.org/10.1016/j.genrep.2021.101055>
16. Saha D., Mandal P., Chakraborty P., Das S. and Saha A. Phenylalanine ammonia-lyase gene induction with benzothiadiazole elevates defence against *Lasiodiplodia theobromae* in tea in India. *Journal of Phytopathology* **165**:755-761(2017). <https://doi.org/10.1111/jph.12615>
17. Mandal P. and Sadhukhan S. Carbon dioxide the green-house gas and mushroom fruiting. *Review of Research*, **8** (4): 71-78 (2019).
18. Mandal P. Botanical based management of mustard aphid (*Lipaphis erysimi* kalt.) population causing major damage of mustard (*Brassica juncea* L.) plants at West Bengal, India. *Review of Research* **8**(4): 41-48 (2019).
19. Mandal P. Recycling of agriculture wastes through oyster mushroom cultivation to mitigate stubble burning problem and empower rural peoples. *Review of Research*, **8** (5):73-80 (2019).
20. Mandal P. Screening, isolation and documentation of pharmaceutical importance macro fungi of Kulik Raiganj Wildlife Sanctuary, West Bengal, India. *Review of Research* **8**(5):41-48 (2019).

21. Mandal P. Wild edible mushroom of Uttar Dinajpur, West Bengal, India: Potential Sources of food and pharmaceuticals. *Review of Research* 8(5):55-6(2019).
22. Mandal P. Diversity of forest tree rotting fungi: a positive impact for increasing cavity loving birds at Kulik Raiganj Wildlife Sanctuary, West Bengal. *Review of Research* 8(6):49-54 (2019).
23. Mandal P. *Hydrodictyon reticulatum* (L.) Lagerheim, a fresh water macro algae causing nuisance eutrophication on paddy field of West Bengal, India. *Review of Research* 8(6):61-66 (2019).
24. Mandal P. An overview of systemic acquired resistance (SAR), a Signal transduction pathway of plant defense. *Review of Research* 8(6):25-32 (2019).
25. Mandal P. An overview of PGPR/PGPF mediated induced systemic resistance (ISR) in plant defense. *Review of Research* 8(6):55-62 (2019).
26. Mandal P. Ancient Vedic ritual of anthill worship and termite-fungus symbiosis, a biological process behind it. Influence of Sanskrit on Indian culture, *The Banaras Mercantile Co.* 96-102 (2017).
27. Mandal P. *Hydrodictyon reticulatum* (L.) Lagerh (family Hydrodictyaceae), a newly reported rare water-net causing nuisance role in paddy field and irrigation ditches at Balurghat sub-division of west Bengal (India). Trends and developments in science, social science and humanities, *Progressive Publishers*. 117-125 (2016).
28. Roy A and Mandal P. Study of the parasitic behaviour of *Cuscuta reflexa* Roxb. on *Parthenium hysterophorus* L. to explore its biocontrol potential. Bishen Singh Mehendra Pal Singh Publishers and Distributors of Scientific Books. 77-90 (2017).
29. Mandal P. Bioconversion of agriculture wastes for food security with the help of edible mushroom and, to combat global climatic change. *The Banaras Mercantile Co.* 89-94(2018).
30. Saha A., Dasgupta S., Mandal P., Saha D. Influence of culture media and environmental factors on mycelial growth, sporulation and spore germination behavior of *Curvularia eragrostidis* (P. Hennings) Mayer. *NBU Journal of Plant Science* 2008, 2:77-85.

31. Saha A., Mandal P., Dasgupta S., Saha D. Influence of culture media and environmental factors on mycelia growth and sporulation of *Lasiodiplodia theobromae* (Pat.) Griffon and Maubl. 2008, **29** (3): 407-410.
 32. A Saha, P. Mandal, S. Dasgupta, D Saha. Screening of tea varieties for susceptibility to *Lasiodiplodia theobromae* by serological techniques and induction of resistance by botanicals. *XVI International Plant Protection Congress, 15-18 October 2007 Scottish Exhibition & Conference Centre, Glasgow, Scotland, UK, Congress Proceedings, Vol.2,*
 33. Saha, S. Dasgupta, P. Mandal and D. Saha. Reduction of Disease incidence in young tea plants against *Curvularia eragrostidis* by biotic and abiotic elicitors In *Stress Biology, 2005, 238-242.*
 34. A Saha, P. Mandal, S. Dasgupta, D Saha. Plant extract induced chitinase activity in tea seedlings challenged with *Lasiodiplodia theobromae*, causal pathogen of diplodia disease. International conference on integration of science and technology for sustainable development, Bangkok, Thailand, 2007, 122-128.
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Selected Book Chapter

1. Mandal, P., and Z. Tiru. "Plant Stress: Challenges and Management in the New Decade." (2022): 321-330. Springer Nature
 2. Mandal, P., and Z. Tiru. Sustainable Management of Environmental Contaminants pp 237-264, Springer Nature
 3. Tiru, Zerald, Parimal Mandal, Arka Pratim Chakraborty, Ayon Pal, and Sanjoy Sadhukhan. "Fusarium Disease of Maize and Its Management through Sustainable Approach." In *Fusarium-An Overview of the Genus*. IntechOpen, 2021.
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Selected Book Published

1. Mandal P. et al. (2022). Mushroom culture technology, HSRA Publications 2022 (ISBN: 978-93-90415-03-8)

2. Mandal P. et al. (2020). Mushroom cultivation techniques and applications, Kripa Drishti Publications, Pune, December 2020 (ISBN: 978-81-949998-6-7)
3. Mandal P. et al. (2021). Fundamentals of Molecular Plant Pathology, Kripa Drishti Publications, Pune, May 2021 (ISBN: 978-93-90847-77-8)
4. Mandal P. et al. (2021). Fundamentals of Mycopathology, Kripa Drishti Publications, Pune, September 2021 (ISBN: 978-93-90847-91-4)
5. Mandal P. et al. (2021). Basic Mycology and Mycotechnology, Kripa Drishti Publications, Pune, January 2021 (ISBN: 978-93-90847-13-6)
6. Mandal P. et al. (2021). Laboratory Manual Mycology and Plant Pathology, Kripa Drishti Publications, Pune, April 2021 (ISBN: 978-93-90847-49-5)

Presentation of paper on conference/Seminar/Symposium

1. Raiganj University: an opportunity for socio-economical development of North and South Dinajpur of the state West Bengal on “Raiganj University: Challenges & Opportunities” at Raiganj University, Raiganj, Uttar Dinajpur, March, 2016
2. Mushroom Based organic farming on agro wastes for empowering peoples of northern part of state West Bengal on “Raiganj University: Challenges & Opportunities” at Raiganj University, Raiganj, Uttar Dinajpur, March, 2016
1. Phytoremediation: An approach for removing or detoxify environmental contaminants on “Current Trends in Plant and Microbial Research” at Department of Botany, Raiganj University, Uttar Dinajpur, March, 2016
2. Philosophical aspect of plant and pathogen interaction on “Philosophy, Religion and Society” at Department of Philosophy, Raiganj University, Uttar Dinajpur, March, 2016
3. Existence of a new domain, Archea to extreme environment and its contribution to Astrobiology on “Gravitational Wave: A recent vista to the universe” at Department of Mathematics, Raiganj University, Uttar Dinajpur, March, 2016

4. A scientific event behind “Anthill’ and Ancient Vedic Rituals on “Influence of Sanskrit on Indian Culture” at Department of Sanskrit Raiganj University, Uttar Dinajpur, March, 2016
5. A Newly reported water bloom of *Hydrodictyon reticulatum* causing wastage of chemical manures in paddy field of Balurghat of the state West Bengal, India on “Exploring Chemistry for the development of North Bengal” at Department of Chemistry Raiganj University, Uttar Dinajpur, March, 2016.
6. Use of Plants and Microbes to Clean our Surrounding on “Man and Microbes” at Department of Microbiology Raiganj University, Uttar Dinajpur, March, 2016
7. Reference to Medicinal Plants in Aboriginal Poetry on “Interface of Creative and critical – Exploring new Avenues” at Department of English Raiganj University, Uttar Dinajpur, March, 2016
8. Macro fungal diversity and their biomolecules as drug and chemicals in the Raiganj Wildlife Sanctuary, West Bengal, India on “Chemical Science Horizon” at Department of Botany, Raiganj University, Uttar Dinajpur, March, 2017
9. Ethno mycological study of Macro fungi of Raiganj Wildlife Sanctuary, West Bengal, India on “Current Trends in Plant and Microbial Research” at Department of Botany, Raiganj University, Uttar Dinajpur, March, 2017
10. Sustainable development of Mushroom cultivation for food safety on “Recent Trends in Life Sciences” at Department of Zoology, Raiganj University, Uttar Dinajpur, March, 2017
11. *Pleurotus sajor-caju* based agro waste management for food safety and global climate change on “Local issue global resolutions: Ecology, Environment, Climate & Economy” at Raiganj University, Uttar Dinajpur, January, 2018
12. Cultivation of mushroom on different agro residues to reduce global warming on “National Seminar on New Horizon in Botanical Research” at North Bengal University, 2020

Conference/Seminar/Symposium/ Workshop organized

1. Acted as **organizing Secretary** – One day National Seminar on “Current Trends in Plant and Microbial Research for Crop and Crop Health Management (CTPMR) – 2024” jointly organized by Department of Botany, Raiganj University, Raiganj and Indian Phytopathological Society, New Delhi.
2. Acted as Joint **Convener** – “Sir J. C. Bose Memorial Lecture Series – 2021” (03 episodes) organized by Department of Botany, Raiganj University
3. Acted as **Joint Secretary** - Two days National Level Seminar entitled “Current Trends in Plant and Microbial Research (CTiPMR) – 2017” organized by Department of Botany, Raiganj University and Department of Higher Education, Govt. of West Bengal.
4. Acted as **Joint Secretary** - Two days National Level Seminar entitled “Current Trends in Plant and Microbial Research (CTiPMR) – 2016” organized by Department of Botany, Raiganj University and Department of Higher Education, Govt. of West Bengal.

Invited Lectures/ Chairing the session or presentation for conferences/ symposia etc.

1. Chair the Technical Session as **Co-Chairperson** in the DBT & DST-SERB sponsored International Conference on “Advances in Plants, Microbes and Agricultural Sciences, Department of Botany, University of North Bengal scheduled from 2nd-4th March, 2023.
2. Chair the Technical Session as **Chairperson** of national seminar on Man and Microbes organized by Department of Microbiology, Raiganj University and Department of Higher Education, Govt. of West Bengal on March, 28-29, 2016.
3. **Invited lecture** on Mushroom Cultivation and its Importance in the Shyampur Block-II Krisi Mela organized by Agriculture, Govt. of West Bengal, 2013.