

Personal Profile

Name: **DR. RITU RAI**
Designation: Assistant Professor
Department: Botany
Subject Specialization: Biochemistry
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Academic Profile

Degree	Year	Institute/University
B.Sc.	1999	St. Joseph's College, Darjeeling/ University of North Bengal
M.Sc.	2001	University of North Bengal
B.Ed.	2005	University of North Bengal
Ph. D	2017	University of North Bengal

Title of Ph.D Thesis: Diversity study of Rhizobium of North Bengal and Sikkim through biochemical and molecular characterization and exploration of their role as biofertilizer.

Details of Teaching/ Research/Academic Experience

Designation	Employer	From	To
Assistant Professor	Principal, Parimal Mitra Smriti Mahavidyalaya, Malbazar, Jalpaiguri	05/09/2019	Till Date
Assistant Teacher	Head Master, Naxalbari Nepali High School	25/09/2007	04/09/2019
Research Scholar (Part Time)	Dr. Arnab Sen (Supervisor)	07/01/2008	22/07/2017

Administrative Positions Held

Head, Department of the Botany

List of Publications

Articles in Journal

1. Bantawa, P., **Rai, R.**, & Mondal, T. K. (2024). Enhanced somatic embryogenesis and viable synthetic seeds in *Picrorhiza scrophulariiflora* Pannell: A conservation milestone. *Environment and Ecology*, 42(3B), 1287–1295. <https://doi.org/10.60151/envec/TRIK2405>
2. Gupta, S. K., Bantawa, P., Rai, S., Ali, S., Pradhan, J., Lama, S. B., & **Rai, R.** (2024). Enhancing citrus resilience: Strategies and advances in abiotic stress management: A review. *Indian Journal of Agricultural Research*, 58, 953–961. <https://doi.org/10.18805/IJARE.A-6270>
3. Sur, S., Ghosh, M., & **Rai, R.** (2023). *In silico* immunoinformatics-based prediction and designing of multi-epitope construct against human rhinovirus C. *Acta Biologica Szegediensis*, 67(1), 11–23. <https://doi.org/10.14232/abs.2023.1.11-23>
4. Majumdar, S., Kumar, A., & **Rai, R.** (2023). Range extension of *Salvia misella* (Lamiaceae): A taxon naturalized in West Bengal. *Nelumbo*, 65(1), 141–143. <https://doi.org/10.20324/nelumbo/v65/2023/172688>
5. Khawash, P., Sharma, U. B., Roy, S., Gyeltshen, S., Sapkota, P., Sunar, N., Chhetri, N., Rai, A., Gupta, S. K., Ali, S., **Rai, R.**, & Bantawa, P. (2023). Indigenous traditional knowledge of preparation of *Marcha* starter culture of *Jaanr* and *Raksi* by some of the local tribal communities of Kalimpong and Darjeeling districts of West Bengal, India. *NBU Journal of Plant Sciences*, 15, 60–64. <https://doi.org/10.55734/nbujps.2023.v15i01.009>
6. Bantawa, P., & **Rai, R.** (2022). Polyethylene glycol (PEG) induced water stress in four different genotypes of pea seedlings and evaluation of the induced defense mechanism. *NBU Journal of Plant Sciences*, 14, 68–74. <https://ir.nbu.ac.in/handle/123456789/5044>
7. **Rai, R.**, Ali, S., & Bantawa, P. (2022). Preliminary observation on the ecological amplitude of *Hypoestes phyllostachya* Baker in Darjeeling and Kalimpong Himalayas. *NBU Journal of Plant Sciences*, 14, 32–34. <https://ir.nbu.ac.in/handle/123456789/5039>
8. **Rai, R.**, & Majumdar, S. (2022). Review of the family Jubulaceae in India. *Biodiversity Online Journal*. <https://doi.org/10.31031/BOJ.2022.03.000556>

Book Chapters

1. **Rai, R.**, & Sen, A. (2003). Physiological characterization of indigenous *Rhizobium* strains from common bean root nodules of North Bengal and Sikkim. In T. K. Misra (Ed.), *Research in emerging field of biological sciences (multidisciplinary aspect)* (pp. 171–180). Astitva Prakashan. ISBN: 978-93-5838-000-2

2. **Rai, R.** (2023). Weed diversity of large cardamom (*Amomum subulatum* Roxb.) field in the district of Darjeeling, West Bengal. In P. Bantawa & B. B. Gurung (Eds.), *Current trends in the emerging fields of botanical research* (Vol. 1, pp. 10–18). Iterative International Publisher. ISBN: 978-93-5838-000-2
3. **Rai, R.** (2023). Host range and preference of *Cuscuta reflexa* Roxb. in Darjeeling and Kalimpong districts of West Bengal. In P. Bantawa & B. B. Gurung (Eds.), *Current trends in the emerging fields of botanical research* (Vol. 1, pp. 111–115). Iterative International Publisher. ISBN: 978-93-5838-000-2

Papers Presented in Seminar and Conferences

Sl. No	Title of the invited lecture /paper presented	Organized by	Whether International/ National/State level	Date
1	Characterization of Rhizobium strains as PGPR and its screening as biofertilizer	Department of Science and Technology and Biotechnology, Government of West Bengal	Regional	17 th and 18 th January, 2023
2	Molecular Characterization of French Bean Associated Rhizobia found in North Bengal and Sikkim	Agro-Environmental Development Society (AEDS)	International	11 th -13 th June, 2022
3	Study of heavy metals effects on growth of the <i>Rhizobium</i> strains	Gyan Jyoti College	National	13 th and 14 th February, 2020
4	First report of complete genome sequencing of <i>Rhizobium</i> sp. from Eastern India	The Department of Botany, North-Eastern Hill University, Shillong	National	29 th and 30 th June, 2017
5	Characterization of <i>Rhizobium</i> as PGPR in French bean isolated from North Bengal and Sikkim	Himalayan Scientific Society for Fundamental and Applied Research in collaboration with Kalimpong Science Centre, Kalimpong and UBKV	International	11 th and 12 th May, 2017

6	Genotypic characterization of indigenous <i>Rhizobium</i> from North Bengal and Sikkim	Department of Botany and Department of Zoology, Kalimpong College	National	3 rd and 4 th October, 2015
7	Morphological and biochemical characterization of <i>Rhizobium</i> strains from North Bengal and Sikkim	Department of Science and Technology, Govt. of West Bengal, West Bengal State Council of Science and Technology, and University of North Bengal	State	28 th and 1 st March, 2015
8	Biochemical characterization of <i>Rhizobium</i> isolates of North Bengal, India	Department of Botany and Bioinformatics facility, University of North Bengal	National	17 th to 19 th February, 2012
9	Ethnobotanical studies on the medicinal practices followed by traditional healers of Darjeeling District of West Bengal	Department of Botany, University of North Bengal	National	24 th and 25 th January, 2008

Participation in Seminar(s) / Conference(s)

1. Participated in two-day workshop on promoting Research Excellence in Academics across West Bengal by the Researcher Academy at West Bengal State Higher Education Council on 16th and 17th August, 2022.
2. Participated in the workshop on ‘Cultivation and Post-Harvest processing of Edible Mushrooms’ organized by Department of Botany, University of North Bengal on 29th December, 2014.
3. Participated in UGC & DST sponsored National Symposium on ‘Advances in Plant and Microbial Research’ organized by Department of Botany, University of North Bengal on 12th and 13th December, 2014.
4. Participated in a two day National workshop on Bioinformatics organized by Bioinformatics facility, Department of Botany, University of North Bengal on 29th and 30th March, 2014.
5. Participated in National Symposium on ‘Recent Trends in Plant and Microbial Research’ organized by DST (FIST)& UGC-SAP assisted DRS Department of Botany, University of North Bengal on 22nd and 23rd March, 2013.

6. Participated in National Seminar on 'Diversity Conservation and Sustainable Utilization of plants and traditional knowledge in Eastern Himalaya' organized by Department of Botany, University of North Bengal from 14th to 16th December, 2010.
7. Participated in Silver Jubilee National Symposium on Sustainable 'Utilization of plant and microbial resources' organized by DRS Department of Botany, University of North Bengal from 28th to 1st March, 2009.

Webinar

1. Participated in the one Day National Level Webinar on "The New Horizon: Omics in Microbial Research" organized by the Department of Botany, Kalimpong College, Kalimpong on 22nd August, 2020.
2. Participated in the National Webinar entitled "Modern History of Botany in India & Role of Botanical Survey of India" organised by Department of Botany, Basirhat College, North 24 Parganas, held on 20th August, 2020 (3:00- 5:00 p.m).
3. Participated in the National Webinar on Epidemic and Society organised jointly by the Department of History and Dept of Sociology of Kalimpong College, Kalimpong on 7th August, 2020.

Awards and Achievements

1. Awarded with the outstanding paper award in Botany (memento and a cash prize of Rupees five thousand only) in 5th Regional Science and Technology Congress on 17th and 18th January, 2023 in Cooch Behar Panchanan Burma University, organized by the Department of Science and Technology and Biotechnology, Government of West Bengal.
2. 3rd Prize in Oral Presentation in the 6th International Conference on 'Current Issues in Agricultural, Biological & Applied Sciences for Sustainable Development (CIABASSD-2022)' held on June 11-13, 2022 at Kalimpong Science Centre, Deolo, Kalimpong, West Bengal, India.

Area of work experience other than departmental work

Sl. No.	Academic year	College Committee
1.	2022-2023	Examination
2.	-do-	Cultural