NAME: DR. MADHUSMITA BARIK

Designation: Assistant Professor

Qualification: M.Sc., Ph.D

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Digital signature IDs

(Scopus-ID/Web of Science-ID/OrCid-ID/Bidwan-ID)

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ABOUT ME

Dr. Madhusmita Barik holds a doctoral Degree (Ph.D.) in Biotechnology from Ravenshaw University, Odisha. She has worked at the Crop Physiology and Biochemistry Division of ICAR-National Rice Research Institute, Cuttack, as a Research Fellow in several International Projects led by the International Rice Research Institute, Philippines, and the University of York, UK. She has been working for Sustainable Crop Production Research for International Development (SCPRID) and National Innovation on Climate Resilient Agriculture (NICRA). Her research primarily focuses on multiple abiotic stresses, combining molecular biology, genetics, plant physiology, root biology, and advanced imaging techniques to unravel the intricate mechanisms underlying stress tolerance in rice. She has developed four rice germplasm registered by the Plant Germplasm Registration Committee (PGRC) of the Indian Council of Agricultural Research (ICAR), and her research work has been published in several prestigious Journals. Her unwavering commitment to advancing the understanding of abiotic stress biology continues to drive transformative advancements in agricultural science. She has been working as an Assistant professor in the Department of Botany, School of Applied Sciences, Centurion University of Technology and Management, Bhubaneswar Campus, Odisha, India since November 2022 and actively engaged in teaching undergraduate and postgraduate students of Botany.

AREA OF INTEREST:

Plant phenotyping, Root biology, stress physiology, molecular marker and gene expression study

COURSES TAUGHT:

Biomolecules & Cell biology (CUTM1456)

Plant Biotechnology (CUTM1468)

Plant Biotechnology (CUTM1439)

Genetic Engineering and its Application (CUGE2271)

TEACHING EXPERIENCE: Two years

RESEARCH EXPERIENCE: Twelve years

ADMINISTRATIVE/EXECUTIVE EXPERIENCE:

- Career Coordinator of Botany Department, Bhubaneswar Campus School of Applied Sciences, Centurion University of Technology and Management, Odisha, India.
- NPTEL Course Mentor for Botany Department, Bhubaneswar Campus School of Applied Sciences, Centurion University of Technology and Management, Odisha, India.

AWARDS & HONORS: Nil

RESEARCH GUIDANCE:

Guided 13 M.Sc. Domain students and 01 Ph.D student (Continuing)

RESEARCH GRANTS: Nil

PUBLICATIONS

JOURNAL PUBLICATIONS:

- Hari N, Kumar U, Chowdhury T, Swain P, **Barik M**, and Nayak AK (2024) Effect of salinity stress on growth, chlorophyll, antioxidant enzymes and nutrient content in Azolla spp." Aquatic Botany 192 (2024): 103750 (IF-2.14).
- **Barik M**, Pattnaik A, Dash GK, Pandit Elssa Dash SK, Baig MJ, Mohanty J N , Swain*P (2023) Root attributes governing drought stress adaptation and the associated molecular markers in chromosome segment substitution lines in rice (*Oryza sativa* L.). Journal of Experimental Biology and Agricultural Sciences (2023) 11(6):947–963.

- Chakraborty, K, Roy S, Jena P, Dash GK, **Barik M**, Behera M, Sar P, Senapaty J, Baig MJ and Swain P (2023) Identification of multiple abiotic stress tolerant donors for climate-resilient rice (*Oryza sativa*) development." The Indian Journal of Agricultural Sciences 93, no. 3 (2023): 258-262. (IF-0.39).
- Kumar A, Dash GK, **Barik M**, Panda PA, Lal MK, Baig MJ, Swain P. Effect of Drought stress on Resistant starch content and Glycemic index of rice (*Oryza sativa* L.). Starch-Stärke. 2020 Nov;72(11-12):1900229. (IF-2.74).

BOOK CHAPTER PUBLICATIONS:

- Dash GK, Sahoo SK, **Barik M**, Parida S, Baig MJ, Swain P. Perspectives and challenges of phenotyping in rice research. Applications of Bioinformatics in Rice Research. 2021:171-95.

- Dash GK, Sahoo SK, Jena J, **Barik M**, Parida S, Baig MJ, Swain P. Drought and high-temperature stress tolerance in field crops. In Response of Field Crops to Abiotic Stress 2022 Dec 15 (pp. 103-109). CRC Press.

PARTICIPATION IN CONFERENCE & SEMINARS (AS INVITED/PLENARY/CHAIR):

- Plenary Speaker in the "National Conference of Plant Physiology (NCPP)" held at Kerala Agriculture University (KAU), THRISSUR, KERALA from 19th-21th December, 2019.

OTHER INFORMATIONs:

- Developed four rice germplasm -AC42997, AC43012, AC43025, and AC43037 registered by the Plant Germplasm Registration Committee (PGRC) of the Indian Council of Agricultural Research (ICAR)