Dr. Nihar Ranjan Chakraborty

Assistant Professor, Genetics and Plant Breeding

Contact Address : Department of Genetics and Plant Breeding, Palli Siksha Bhavana (Institute of Agriculture), Visva Bharati, Sriniketan, Birbhum, West Bengal 731 236
E mail : nrchakraborty@gmail.com
niharranjan.chakraborty@visva-bharati.ac.in
Fax : 91(03463) 262672 / 261156
Phone number :
Google scholar: https://scholar.google.co.in/citations?user=VmYDFo8AAAAJ

Educational qualification:

- Ph.D. (Agriculture) in Genetics and plant Breeding from Visva-Bharati, West Bengal
- M.Sc (Agriculture) in Genetics from Bidhan Chandra Krishi Vidyalaya , Mohanpur, West Bengal
- B.Sc. (Agriculture) Hons. from Palli Siksha Bhavana (Institute of Agriculture), Visva-Bharati, Sriniketan, west Bengal

Fields of Teaching:

- Teaching "Crop Improvement I (Kharif)" "Crop Improvement II (Rabi)", "Principles of Biotechnology", "Commercial Plant Breeding", "Fundamental of Plant Breeding", Fundamental of Genetics and "RAWE" courses to the UG students.
- Teaching "Principles of Genetics", "Breeding for Biotic and Abiotic Stress Resistance", "Principles of cytogenetics", "Hybrid Breeding", to the post graduate students.
- Teaching "Advances in Plant Breeding System" and other course like "Research Methodology and Techniques in Genetics and Plant Breeding , at Ph. D. level.

Research area :

Mutation Breeding, Breeding of cereals specially Rice, Oilseeds and Vegetable improvement, Molecular Breeding program targeting rice quality traits (low glycemic load and high antioxidants)

Foreign Visit : Bangkok, Thailand; for attending international seminar organized by International Rice Research Institute (IRRI) during 2014

Teaching/Research/Extension/Training experience

- Intense research exposure for seventeen years in the field of Plant breeding
- Teaching experience for more than fourteen years

Academic Distinctions gained:

- ➢ Member of BOS, Department of Environmental Studies, 2016 to 2019
- ➢ Guest lecturer for diploma course in Horticulture under community college, Visvs-Bharati, Sriniketan.
- ✓ Acted as Organizing Secretary of National seminar
- ✓ Acted as Speaker in the workshop
- ✓ Serving as Teacher-in-Charge, Games and Sports of Palli Siksha Bhavan.(From 2012-2015)
- ✓ Act as Teacher Warden, P.S.B. Boys' Hostel, Palli siksha Bhavana (From 2015 to 2017)
- ✓ Participated on live phone- in radio programme
- ✓ Reviewer of different research journals
- ✓ Paper setter/examiner of different undergraduate and post-graduate courses of Genetics, Plant Breeding, Biotechnology in several SAUs like BCKV, Mohanpur; UBKV, Coochbehar; IRDM, RMA, Narendrapur etc.
- ✓ Life member of two professional societies

Research projects

- As **Principal Investigator** in the research project entitled "Induced mutation for early maturing, semi dwarf and high yielding lines in Aromatic rice Badshabhog" sanctioned by Govt. of India, Department of Atomic Energy (DAE), Board of Research in Nuclear Sciences (BRNS), Bhabha Atomic Research Centre (BARC), Trombay, from April'2016 to March'2019 (amount sanctioned around Rs. 28 lac).
- As Co-**PI** in the research project entitled "Genetic improvement of sesame through induced mutation" sanctioned by Govt. of India, Department of Atomic Energy (DAE), Board of Research in Nuclear Sciences (BRNS), Bhabha Atomic Research Centre (BARC), Trombay, from April'2014 to September'2018 (amount sanctioned Rs. 30 lac).

PUBLICATIONS:

- Research paper: 57 *(Some of the papers in year wise descending order)*

S.No.	Author(s)	Title	Name of Journal	Volume	Page	Year
1.	Kole, P.C., Chakraborty, N.R. and Mallick, R.B.	Evaluation of gamma ray induced mutants of aromatic rice (Oryza sativa L.)..	*Tropical Agriculture (Trinidad)*	89(4)	205-210	2012
2.	Kole, P.C. and Chakraborty, N.R.	Assesment of genetic divergence in induced mutants of short grain aromatic non-basmati rice (Oryza sativa L.).	*Tropical Agriculture (Trinidad)*	89(4)	211-215	2012
3.	Singh Sarnam, Prakash Aruna, Chakraborty N. R., Wheeler Candac, Agarwal P. K, Ghosh Arup	Genetic variability, character association and divergence studies in Jatropha curcas for improvement in oil yield..	*Trees structure and function*	29	DOI 10.1007/s00468-016-1354-0	2016
4.	Singh Sarnam , Prakash Aruna, Chakraborty, N.R., Wheeler Candace, Agarwal P.K., Ghosh Arup	Trait selection by path and principal component analysis in Jatropha curcas for enhanced oil yield..	*Industrial Crops and Products*	86	173–179	2016
5	Lakshman,S.S, Chakraborty, N. R. and Kole, P.C.	Study on the combining ability and gene action in sunflower through line x tester matting design.,	*Electronic Journal of Plant Breeding*	10 (2)	816-826	2019
6	Seth,Snigdhamaye e, Debnath, S. Chakraborty, N.R.	In silico analysis of functional linkage among arsenic induced MATE genes in rice.	*Biotechnology Reports*	26	e00390	2019
7	Lakshman,S.S, Chakraborty, N. R. and Kole, P.C.	Economic heterosis in sunflower (Helianthus annuus L.): Seed yield and yield attributing traits in newly developed hybrids.,	Electronic Journal of Plant Breeding	11(2)	461-468.	2020
8.	Kant A; Chakraborty NR*; Das BK	Immediate radiation effects and determination of optimal dose of gamma rays on non-basmati aromatic rice (oryza sativa l.) Of eastern india.	Journal of Experimental Biology and Agricultural Sciences	8(5)	586-604.	2020
9.	Lakshman,S.S, Chakraborty, N. R*, Debnath, S. and Kant A	Genetic variability, character association and divergence studies in	African Journal of Biological Sciences	3(1)	129-145	2021

		Sunflower (Helianthus annus L.) for improvement in oil yield.				
10	Kant A and Chakraborty NR*	Induction of mutation through gamma irradiation in non-basmati aromatic "Badshabhog" rice (Oryza sativa L.).	Applied Biological Research	23(1)	50-59	2021
11	Acharjee S*. Chakraborty N. R., Das S. P.	Screening of rice landraces for potential drought tolerance through comparative studies of genetic variability and principal component analysis	Electronic Journal of Plant Breeding	12(4)	1091-1101	2021
12	Sunny A, Chakraborty N R, Kumar A, Singh BK, Paul A, Maman S, Sebastian A and Darko D A.	Understanding Gene Action, Combining Ability, and Heterosis to Identify Superior Aromatic Rice Hybrids Using Artificial Neural Network.	Journal of Food Quality	2022	16	2022
13	Margam BK, Chakraborty NR and Sadhu A.	Assessment of genetic diversity based on agro-morphological traits in Indian mustard [Brassica juncea (L.) Czern. & Coss.] germplasm.	Electronic Journal of Plant Breeding	13(3)	1-5	2022
14	Chakraborty, N. R, Lakshman,S.S, , Debnath, S. and Rahimi M	Yield stability and economic heterosis analysis in newly bred sunflower hybrids throughout diverse agro-ecological zones	BMC Plant Biology	22	579	2022
15	Margam BK and Chakraborty NR	Study on gene action, combining ability and heterosis for different traits in Indian mustard (Brassica juncea L. Cxern & Coss).	Electronic Journal of Plant Breeding,	15(3):	782-793	2024
16	Kalpataru Nanda, Nihar Ranjan Chakraborty, Debarchana Jena, Diptibala Rout, Ramlakhan Verma	Gene action of yield and its contributing traits in wide-compatible elite rice (Oryza sativa L.) restorer lines.	Journal of Experimental Biology and Agricultural Sciences	12(6)	850-859	2024
17	Kumar Anurag, Sahoo Pratishruti and Chakraborty Nihar Ranjan	Genetic variability, character association and divergence studies of F_6 families of aromatic rice	*Plant Archives*	25(Supplementary 2):	871-880	2025

Books/Reports/Chapters/General articles etc.

S.No	Title	Author's Name	Publisher	Year of Publication
1.	Genetic Improvement of pulses through Induced Mutation. In: Essays on Indian Economic Problems, ed. Chattopadhyay Pranab Kumar,	Chakraborty N.R., Paul, A. and Duary B.	Renu Publishers, New Delhi, ISBN: 978-93-85502-07-1, pp. 129-136.	2016
2.	Conservation of Land Races and Wild Relatives of Crops for Sustainable Family Farming and Food Security. In: Family Farming: Challenges and Opportunities, ed. Mondal *et. al.*	Chakraborty N.R., Duary B., Debnath S., Paul A. and Bhattacharaya S.	Renu Publishers, New Delhi, ISBN: 978-93-85502-22-4, pp. 35-42.	2016
3.	Development of Climate Ready Crops for Food Security. In: Green Energy and Sustainable Environment, ed. Chaudhury *et. al.*	Chakraborty N.R., Duary B., Bhattacharya S., and Panda D	Akshar Prakashni, Bolpur, Santiniketan, Birbhum, ISBN: 978-81-922916-6-6, pp. 153-171.	2016
4.	Enhancement of pulses production through genetic improvement in lateritic belt of West- Bengal. In: Advance Technologies in agriculture for doubling farmer's income, ed. Swine *et al.*	Chakraborty N R and Panda D	New Delhi Publishers, New Delhi, ISBN: 978-93-86453-61-7, pp 261-269.	2018
5	Genetic diversity in agricultural plants. In: Futuristic Trends in Biotechnology,	Krishna Murari Prasad, Nihar Ranjan Chakraborty	IIP Proceedings; ISSN/ISBN:978-93-95632-83-6; Volume 2, Book 26, Chapter 8, page No.: 111-125;	2022
6	Innovative ways to breed plants with the goal of feeding the whole world. In: Futuristic Trends in Biotechnology	Jayasri V, Shaik Aisha, Nihar Ranjan Chakraborty	IIP Proceedings; ISSN/ISBN:978-93-95632-83-6, Volume 2, Book 26, Chapter 5,Page No.: 70-81	2022
7	Conservation of biodiversity: mitigating environmental challenges and threats.	Dr. Nihar Ranjan Chakraborty,Dr. Sandip Debnath, Neha Rajan, Dr. Brijesh pandey	Phoenix International Publication House, 978-93-5515-136-0 (ISBN).	2022
8	Application of Nuclear Techniques in Crop Improvement: A Review. In: Plant Mutagenesis and Crop Improvement,	Chakraborty N R, Kant A and Debnath S	CRC press, Taylor & Francis Group, Chapter 5, page no. 98-123, ISBN 9781003392897	2024
9	Single cell technology for studying plant growth and development. In: Guide to Plant Single-Cell Technology, Functional Genomics and Crop Improvement;	Biswajit Pramanik, Ankan Das, Sipra Paul, Sandip Debnath and Nihar Ranjan Chakraborty	Elsevier page No. 67-84, ISBN: 978-0-443-23736-2.	2025
10	Sunflower: Breeding for high yielding hybrids suitable for different agro-climatic situation in West Bengal	Chakraborty N R and Lakshman S S	International Publisher 'LAP LAMBERT Academic Publishing (Dodo Books Indian Ocean Ltd. And OmniScriptum S.R.L Publishing group) ISBN: 978-613-9-45621-5.	2025

11	Improvement of some aromatic rice: knowledge of genetics and breeding	Chakraborty N R and Bhattacharaya S	International Publisher 'LAP LAMBERT Academic Publishing (Dodo Books Indian Ocean Ltd. And OmniScriptum S.R.L Publishing group) ISBN: 978-620-7-46490-6	2025

Supervision of thesis research:

- ✓ M.Sc. :Awarded : 15; Working: 02
- ✓ Ph.D. :Awarded:-04; Working: -03

Vidwan: https://vidwan.inflibnet.ac.in/profile/155525

Orcid: https://orcid.org/0000-0002-5263-3366