Detailed Academic profiles

Dr. Narottam Dey
Associate Professor in Biotechnology
Department of Biotechnology, Visva-Bharati, Santiniketan-731235 (W.B), India
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Educational Qualification:

M.Sc. (University of Burdwan, Burdwan, India)
Ph.D. (Bose Institute, Kolkata, India)
Post-Doc (Oregon State University, USA)

Fellowship/ Awards received:

i. INSA-Visiting Scientist, Centre for Agricultural Research, Martonvásár, Hungarian Academy of Science (Hungary)-2012
ii. SGRF-Genomics Project Grant 2017 in the area of Plant Sciences, Sci Genome Research Foundation, India-2017
iii. DBT-international travel grant for presenting and attending ISRFG meeting at Montpelier, France-2016
iv. SERB-international travel grant for presenting and attending ISRFG meeting at Seol, South Korea-2017
v. INSA-Visiting Scientist, Institute of Plant and Microbial Biology, Academia Sinica, Taiwan-2019
vi. ARNF international travel grant for presenting and attending the 3rd ICRF in Thailand- 2024

Areas of Teaching:

Genetics, Biostatistics, Plant Biotechnology (M.Sc. course)
Rice Biotechnology (Ph.D. coursework)
Inheritance Biology, Plant System Biology (As guest teacher at Integrated Science Education and Research Centre (ISREC), Visva-Bharati

Current Fields of Research:

i) Exploration of promising natural rice genetic resources for quality traits and abiotic stress tolerance through molecular breeding
ii) Transcriptomics and miRNAome study for drought, salinity and submergence tolerance in rice
iii) Study on combinatorial activity and simultaneous introgression of *Sub1A* and *SK* loci in rice

Google Scholar Citation (as on May, 202)

	All	Since 2020
Citations	1038	550
h-index	16	13
i10-index	29	17

List of Publications (last 5 years)

1. Mondal K, Panja, Halder R, Ganie SA, Dey PC, Chakraborty A and **Dey N** (2026) Salinity stress responses of soak-n-eat soft bora rice (*Oryza sativa* L.) Genotypes: Morpho-Physiological, Biochemical and Molecular Approach. *Journal of Soil Science and Plant Nutrition*. https://doi.org/10.1007/s42729-026-03212-w (Springer publication, **IF 3.1**)

2. Samanta P and **Dey N** (2026) Decoding Ethylene-driven Molecular Mechanism in Deepwater Rice Carrying Sub1 and SK Genes Together: An In-Silico Perspective. *Tropical PlantBiology* https://doi.org/10.1007/s12042-026-09472-1 (Springer publication, **IF 1.4**).

3. Pal P, Mondal S, Ghosh SK, Pal D, Chakraborty A, Ghosh PK, **Dey N**, Dam B and Maiti TK (2026) Genomic insights into *Pseudomonas wayambapalatensis* DGI-4-mediated lead (Pb^{2+}) biosorption to alleviate rice phytotoxicity via redox homeostasis and gene regulation. *Journal of Hazardous Materials* 502: 140962. https://doi.org/10.1016/j.jhazmat.2025.140962 (Elsevier publication, **IF- 11.3**)

4. Panja S, Patra AK, Kar RK, Chandra Dey and Dey P and **Dey N** (2026) Cooking and eating quality of ethnic Bora rice (Oryza sativa L.): machine learning-based prediction of resistant starch content in ready-to-eat products. *J Sci Food Agric. DOI 10.1002/jsfa.70457* (Wiley publication, **IF 3.6**)

5. Ghosh SK, Gosh PK, Pal P, Mondal S, Pal D, **Dey N** and Maiti TK (2025) Halotolerant *Staphylococcus* sp. MCC 5340 confers salinity tolerance in rice through the regulation of ion homeostasis and stress-responsive genes. *International Microbiology* (Springer publication, **IF 2.7**). https://doi.org/10.1007/s10123-025-00729-5 (Published on 31st October, 2025)

6. Mondal K, Singh RK, and **Dey N** (2025). The quest for taste: *OsGATA7-SMOS1-OsGluA2* module controlling rice grain taste quality. *Functional & Integrative Genomics* 25: 207 (Springer Publication **IF-3.9**). https://doi.org/10.1007/s10142-025-01715-w (Published on 10th October, 2025).

7. Shubham K, Pal D, Pal S, Samanta P, Dutta S, and **Dey N** (2025). Regulatory role of *Osa-miR6245* on *Sub1A* loci of rice (*Oryza sativa* L.) -experimental validation. *South African Journal of Botany* 186: 546–554 (Springer publication, **IF-2.7***).* https://doi.org/10.1016/j.sajb.2025.09.044 (Published on 2nd October, 2025).

8. Mondal K, Singh RK, and **Dey N** (2025). Combined drought and heat stress affect starch synthesis and grain quality-related traits during the grain-filling stage of rice (*Oryza sativa* L.). *Journal of the Science of Food and Agriculture.* (Wiley publication, **IF- 3.5**) http://doi.org/10.1002/jsfa.70096 (Published on 31st July, 2025)

9. Panja S, Bhowmik AD, Chattopadhyay A, Kar RK, Dey PC and **Dey N** (2025) Genetic exploration and molecular breeding of unique ready-to-eat soft rice. *The Journal of Cereal Science 124 (2025) 104202* (Elsevier publication, **IF- 3.9**) https://doi.org/10.1016/j.jcs.2025.104202 (Published on 9th May, 2025)

10. Samanta P, Jasrotia RS, Jaiswal S, Iquebal A and **Dey N** (2025) The transcriptome landscape of Kumrogarh, a unique rice landrace showing the simultaneous presence of *Sub1* and *SK* loci for submergence tolerance. *3 Biotech* **15**, 109. (Springer publication, **IF- 3.1**) https://doi.org/10.1007/s13205-025-04277-7 (Published on 2nd April, 2025)

11. Pal S, Pal D, Kar RK, Panda D, Dey PC and **Dey N** (2025) Coetaneous activity of *Sub1a* and *SK* for maintenance of underwater growth in rice genotypes. *Plant Gene* Volume 42 (Elsevier publication, **IF- 2.2**) https://doi.org/10.1016/j.plgene.2025.100502 (Published on Published on 21st March 2025)

12. Chatterjee A, Kumar M, Adak M, **Dey N** and Kar RK (2025) Insights into Mechanisms, Responses, and Strategies for Alleviating Drought Stress in Rice: A Current Synopsis, *Journal of Crop Health*, 77:39 (Springer publication,) https://doi.org/10.1007/s10343-024-01103-7 (Published on 30th January, 2025)

13. Mondal K, Singh RK and **Dey N** (2024) Breaking the yield-quality tradeoff: *OsNLP3* in rice*. Functional & Integrative Genomics* 24:218 (Springer Publication **IF-3.9**) https://doi.org/10.1007/s10142-024-01503-y (Published on 21st November, 2024)

14. Pal D and **Dey N** (2024) PCR compatible miniprep DNA isolation in rice using microwave and dry bath-based heating devices. *Braz. J. Bot* (Springer Publication **IF- 1.5**).(https://doi.org/10.1007/s40415-024-01023-w) (Published on 2nd July, 2024)

15. Mondal K, Kar RK, Chakraborty A and **Dey N** (2024) Concurrent effect of drought and heat stress in rice (*Oryza sativa* L.) physio-biochemical and molecular approach. *3 Biotech* (Springer Publication **IF- 3.1**) (https://doi.org/10.1007/s13205-024-03980-1) (Published on 19th April, 2024)

16. Mondal K, Singh RK, Prasad M and **Dey N** (2024) Newly identified Pijx gene: a weapon against both seedling and panicle blast in rice. *Plant Cell Reports* (Springer Publication **IF- 5.004**) (https://doi.org/10.1007/s00299-024-03198-8) (Published on 24th March, 2024)

17. Mondal K, Tiwari M, Singh RK, Prasad M and **Dey N** (2023) Feeding the future: role of *OsAUX5* in enhancing rice nutritional value. *Plant Cell Reports* (Springer Publication **IF- 5.004**) (https://doi.org/10.1007/s00299-023-03033-6) (Published on 21st June, 2023)

18. Panja S, Biswas R, Kar RK and **Dey N** (2023) Morpho-molecular characterization of ethnic Bora rice for conservation and breeding. *Genetic Resource and Crop Evolution* (Springer Publication **IF- 1.864**). (DOI:https://doi.org/10.1007/s10722-023-01541-8 (Published on 3rd February, 2023)

19. Show BK, Panja S, Ghosh Thakur R, Basu A, Koley A, Ghosh A, Pramanik K, Chaudhury S, Hazra AK, **Dey N**, Ross AB, and Balachandran S (2023). Optimisation of Anaerobic Digestate and Chemical Fertilizer Application to Enhance Rice Yield—A Machine-Learning Approach. *Sustainability.* 15, 13706 (MDPI publication, **IF-4.0**) https://doi.org/10.3390/su151813706 (Published on 14th September, 2023)

20. Chatterjee A, Galiba G, Kocsy G, Kar RK and **Dey N** (2023) Molecular insight into drought tolerance of CR Dhan 40, an upland rice line from Eastern India. *J. Crop Sci. Biotechnol* 27: 225–234 (Springer Publication, **IF-1.5)** https://doi.org/10.1007/s12892-023-00222-3 (Published on 7th October, 2024)

21. Samanta P and **Dey N** (2023) microRNA-marker based genetic diversity analysis for drought tolerance in rice (*Oryza sativa* L.). *Plant Physiology Reports.* (Springer Publication **IF- 1.5)** (DOI: https://doi.org/10.1007/s40502-023-00709-9, Published on 28th January, 2023)

22. Samanta P and **Dey N** (2022) miRNA-mediated regulation of *SK* locus in rice under induced submergence. *J. Crop Sci. Biotechnol.* (Springer Publication, **IF-1.5**) (DOI: https://doi.org/10.1007/s12892-022-00190-0, Published on 27th December, 2022)

23. Panja S, Kar RK, Dey PC and **Dey N** (2022) Underpinning the soft nature of soak-n-eat rice - A physicochemical and molecular approach. *Food Bioscience* (Elsevier **IF- 5.318**) (https://doi.org/10.1016/j.fbio.2022.102122 (Online published 21st October, 2022)

24. Panja S, Mondal K, Kar RK, Dey PC and **Dey N** (2022) Exploration of ready-to-eat soft Bora rice genotypes of Assam for submergence tolerance. Accepted in *Journal of Crop Science and Biotechnology.* 26: 87–95 (Springer publication, **IF 1.5**) (https://doi.org/10.1007/s12892-022-00164-2) (Online Published on 13th July, 2022)

25. Samanta P, Chakraborty A and **Dey N** (2022) Study on physiological responses with allelic diversity of *Sub1A* and *SK* loci in rice seedlings under complete submergence. *Plant Physiology Reports.* (Springer publication, **IF-1.5**) (https://doi.org/10.1007/s40502-022-00660-1). (Published on 27th May, 2022)

26. Samanta P, Chakrabarti A and **Dey N** (2021) Varied shoot growth in rice plants across different developmental stages under induced flooding. *Plant Science Today* 8(3): 704-711. (Horizon, India publication, **IF-0.9**) https://doi.org/10.14719/pst.2021.8.3.1186 (Published on 1st July, 2021)

27. Gyugos M, Ahres M, Gulyás Z, Szalai G, Darkó E, Mednyánszky Z, **Dey N**, Kar RK, Sarkadi LS and Kocsy G (2021) Light spectrum modifies the drought-induced changes of glutathione and free amino acid levels in wheat. *Acta Physiologiae Plantarum 43, 90* (Springer Publication, **IF- 2.983**) https://doi.org/10.1007/s11738-021-03253-x. (Published on 01 June 2021)

28. Chatterjee A, Dey T, Galiba G, Kocsy G, **Dey N** and Kar RK (2021) Effect of combination of light and drought stress on physiology and oxidative metabolism of rice plants. *Plant Science Today* 8(4): 762 -77. (Horizon, India publication, **IF-0.9)** https://doi.org/10.14719/pst.2021.8.4.1245 (Published on 19th August 2021)

29. Karmakar J, Goswami S, Pramanik K, Maiti TK, Kar RK and **Dey N** (2021) Growth promoting properties of *Mycobacterium* and *Bacillus* on rice plants under induced drought. *Plant Science Today* 8 (1):49-57. (Horizon, India publication, **IF-0.9**) DOI: https://doi.org/10.14719/pst.2021.8.1.965 (Published on 1st January, 2021)

30. Das, SP, Deb D and **Dey N** (2020) Expression study of five genes involved in floral organ development in multiple seeded rice. *J. Plant Biochem. Biotechnol*. 29, 348–351 (2020). (Springer Publication, **IF- 1.525)** https://doi.org/10.1007/s13562-019-00526-y (Published on June, 2020)

31. Samanta P, Ganie SA, Chakraborty A and **Dey N** (2020) Study on regulation of carbohydrate usage in a heterogeneous rice population under submergence. *J. Plant Biochem. Biotechnol.* 30 (1): 138-146. (Springer Publication, **IF- 1.525**) DOI. https://doi.org/10.1007/s13562-020-00577-6 (Published on 4th August, 2020)

32. Das SP, Jasrotia RS, Deb D, Iquebal MA, Jaiswal S and **Dey N** (2020) Genomic analysis of polycarpellary rice (*Oryza sativa* L.) through whole genome resequencing. *J. Plant Biochem. Biotechnol.* 30: 364–372. (Springer Publication, **IF-1.525**) https://doi.org/10.1007/s13562-020-00602-8 (Published on 5th November, 2020)

Ph.D. Students Supervision with thesis title; Awarded-09, Continuing-03:

No	Student's name	Title of the Ph.D thesis with the title of research and role	Date of award	Shodhgangotri-inflibnet Link
1.	Dr. Joydip Karmakar	Molecular profiling of selected rice landraces for drought stress tolerance and characterization of associated plant growth promoting rhizobacteria. (As supervisor)	4th December, 2015	http://shodhgangotri.inflibnet.ac.in:8080/jspui/handle/123456789/6169
2.	Dr. Rajib Roy Choudhury	Genetic analyses in rice (*Oryza sativa* L.) with special reference to agro-morphology, quality and osmotic stress tolerance. (As supervisor)	16th April, 2016	http://shodhgangotri.inflibnet.ac.in:8080/jspui/handle/123456789/6165
3.	Dr. Anuj Mamgain	"Studies on cultural & morphological variability, management and development of PCR based molecular marker for leaf blight of rapeseed & mustard caused by *Alternaria brassicae.* (As co-supervisor)	21st December, 2016	Not available
4.	Dr. Showkat Ahmad Ganie	Studies of molecular genetic diversity in rice with reference to salinity tolerance. (As supervisor)	3rd Feb, 2017	http://shodhgangotri.inflibnet.ac.in:8080/jspui/handle/123456789/6168
5.	Dr. Sayani Goswami	Molecular and Genetic Study of Floral Organ Development in rice (*Oryza sativa* L.). (As supervisor)	23rd Sept, 2018	https://shodhganga.inflibnet.ac.in:8443/jspui/handle/10603/222432
6.	Dr. Soumya Prakash Das	Molecular genetic analysis of Submergence tolerance in rice (*Oryza sativa* L.) with Special references to landraces and wild species. (As supervisor)	5th April, 2019	https://shodhganga.inflibnet.ac.in/handle/10603/248461
7.	Dr. Pratyasha Samanta	Physiological, Biochemical and Molecular screening for submergence tolerance trait in deep water rice (*Oryza sativa* L.) land races of West Bengal under water logging. (As supervisor)	11th August, 2022	https://shodhganga.inflibnet.ac.in/handle/10603/398900
8.	Dr. Suraj Panja	Exploration and molecular breeding of soft rice with special reference to cooking and eating quality	September, 2023	https://shodhganga.inflibnet.ac.in/handle/10603/544704
9.	Kongkong Mondal	The combined effect of drought and heat stress in rice (*Oryza sativa* L") (As supervisor)	29th July, 2025	Not available

***List of Extramural Research Projects Received*:**

Project title and role	Period	Ref. No.	Total Project cost (Rs.)	Funding agency

(i) Allele Mining for Stress Tolerance in Traditional and Wild Relatives of Rice (*Oryza sativa* L.) (As P.I)	01.02.2011 - 30.06.2014	F. No. 39-288/2010 (SR) dated 01.02.2011	10,560,00/- (completed)	UGC, Govt. of India
(ii) Biochemical and Molecular Profiling of West Bengal Folk Rice Germplasm with reference to Abiotic Stress Tolerance. (As P.I)	05.03.2011 - 31.03.2015	462(Sanc.)/ST/P/S&T/1G-11/2010 dated 27/11/2010	9,76,548/- (completed)	State DST, Govt. of W.B
(iii) Development of multiple-kernel rice through biotechnology (As P.I)	01.07.2014 - 31/08/2017	SB/YS/LS-187/2013	21,99,408/- (completed)	SERB, Govt. of India
(iv) Responses of crop plants (rice and wheat) to combination of light and drought stresses (DST-Indo-Hungarian international collaboration) (As co-PI)	04.11.2016 - 04.11.2019	DST-Indo-hung INT/HUN/P-08/2016	19,86,839/- (completed)	DST, Govt. of India
(v) Genetic improvement and popularization of Komal Chawl-a potential rice preparation for soldiers posted in remote places (As P.I)	04.07.2017 - 03.12.2020	LSRB-303/FSH-ABB/2017	24,85,653/- (completed)	DRDO, Govt. of India.
(vi) Development of SNP and miRNA based functional markers for abiotic stress (drought salinity and submergence) tolerance among selected West Bengal rice land races (As P.I)	27.07.2018 - 30.06.2023	233(Sanc.)/ST/P/S&T/1G-75/2017 dated 24/03/2018	11,99,800/- (Completed)	DST-DBT, Govt. of West Bengal
(vii) Assessment of combinatorial effect of *SUB1A* and *SK* loci in lowland indigenous rice lines for tolerance to flash flood followed by stagnation (As P.I)	01.03.2021 - 31.05.2024	CRG/2019/004567 dated 12/02/2021	37,89,588/- (Completed)	SERB, Govt. of India
(viii) A mechanistic understanding of rice varieties with both *SUB1A* and *SK* mediated tolerance to different flood regimes (As PI)	April, 2024 - April, 2026	DST/INT/JSPS/P-391/2024(G) dated 03/12/2024	14,58,000/- (Running)	DST-JSPS, Govt. of India & Japan

Research collaboration with other laboratories:

	External (Outside of Visva-Bharati)			
Sl No.	***Name of researcher***	***Area of research***	***Research Institute/University***	***Project/paper published***
1.	Prof. Takeshi Fukao	Submergence tolerance in rice	Fukui Prefectural University, Fukui, Japan	DST-JSPS Project-1
2.	Dr. Gabor Kocsy & Prof. Gabor Galiba	Effect of drought and light on Rice and Wheat plants	Agricultural Institute, Centre for Agricultural Research, ELKH, Martonvásár, Hungary	DST-Hungarian Project-1, papers-3
3.	Dr. Manoj Prasad	Crop Genetics and Genomics (review work)	NIPGR, New Delhi (Now at Dept. of Genetics, Delhi University)	Papers-2
4.	Dr. Tapan K Mandal	Study on salt tolerance in rice	ICAR-NBPGR, New Delhi, Now at ICAR-NIPB, New Delhi, India.	Papers-3
5.	Dr. Asif Iquebalal	Genomics and Bioinformatics study in rice	ICAR-Centre for Agricultural Research, Indian Agricultural Statistics Research Institute, Library Avenue, New Delhi, India	Papers-2
6.	Dr. Pradip Chandra Dey	Glycemic load and soft trait in Assamese rice	Regional Agricultural Research Station, Assam Agricultural University, Titabar, Assam, India	Papers-4
7.	Dr. Debal Deb	Flowering mutant in rice Rice hybridization	Centre for Interdisciplinary Studies, Basudha Biotechnology Laboratory for Conservation (Basudha Trust), West Bengal, India	Papers-4

8.	Dr. Tushar Kanti Maiti	PGPR study in rice	Department of Botany, The University of Burdwan, Burdwan 713 104, West Bengal, India	Papers-2
9.	Dr. Anupam Paul	Phenotyping and Breeding of West Bengal rice landraces	Agricultural Training Centre (ATC), Fulia, Nadia, West Bengal, India	Papers-3
10.	Mr. Abhra Chakrabarti	Submergence tolerance in West Bengal rice landraces	Fisheries Department, Govt. of West Bengal, India	Papers-2
11.	Dr. MK Adak	Abiotic stress tolerance in rice plants	Department of Botany, University of Kalyani, Kalyani, Nadia-741235, India	Papers-6
	Internal (Within Visva-Bharati)			
1.	Prof. Rup Kumar Kar (Retd.)	Abiotic stress tolerance in rice, Glycemic load and soft trait in Assamese rice	Department of Botany, Visva-Bharati, Santiniketan, India	WB-DST, DST, SERB, DRDO projects-3 Papers-6
2.	Dr. Debasish Panda	Submergence tolerance in rice	Department of Crop Physiology, Palli Siksha Bhavana, Visva-Bharati, Santiniketan, India	SERB, DST-JSPS Project-2 Paper-1
3.	Prof. Angshuman Chattopadhyay	Glycemic load and soft trait in Assamese rice	Department of Zoology, Visva-Bharati, Santiniketan, India	Papers-1