

Brief Profile

Dr. Padmanabh Dwivedi

Professor & Ex-Head,

Department of Plant Physiology, Institute of Agricultural Sciences, B.H.U., Varanasi

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[Ex-Member, Executive Council of 'Ganga Samagra'- Kashi Prant as Head,
Educational Institutions; "Sarankshak" Kashi Dakshin, Ganga Samagra]

Homepage: https://www.bhu.ac.in/Site/FacultyProfile/1_23?FA000611

Educational Background:

Schooling from Kendriya Vidyalay, BHU Campus, Varanasi

B.Sc (Hons.) 1991 Banaras Hindu University, Varanasi, India (Topped, *Malviya Medal*)

M.Sc. (Botany) 1993 Banaras Hindu University, Varanasi, India (Topped, *Gold Medallist*)

Ph.D. (Plant Science) 1999 University of Cambridge, U.K.

Teaching Experience: More than 26 years

S. No	Position	Duration		Total Duration in years	Remarks, if any
		From	To		
1.	Lecturer	Sept 1999	Sept 2005	06	Rajiv Gandhi University (formerly Arunachal University), Itanagar
2.	Reader	Sept 2005	Nov 2006	01 (Reader)	Rajiv Gandhi University (formerly Arunachal University), Itanagar
3.	Reader/ Associate Professor	Nov 2006	Sept 2011	05	Banaras Hindu University (Inst. of Ag. Sci., Department of Plant Physiology)
3.	Professor	Sept 2011	Till date	More than 14½ years as Professor	Banaras Hindu University (Inst. of Ag. Sci., Department of Plant Physiology) Professor w.e.f. 07.09.2011

Research Experience: Over 31 years

Specializations: Stress Physiology, Plant tissue culture, plant-microbe interaction, Biodiversity Management, nitric oxide signalling in plants

Done research work in 04 Overseas Laboratories spanning for a period around 05 years (Univ. of Cambridge, U.K.; Univ. of Wales, Bangor, U.K.; Instt. of Microbiology, Czech Academy of Sciences, Prague, Czech Republic; Univ. of Wurzburg, Germany)

Guided 18 Ph.D. and 47 M.Sc. theses

Significant research contributions

Stress Physiology: Contributed significantly in the field of physiology of abiotic stresses – a global issue (heat, drought, salinity, heavy metal, waterlogging) under both field and *in vitro* conditions, and mitigating these stress effects through use of elicitors such as salicylic acid, brassinosteroid, polyamine, nitric oxide, and PGPM, conferring stress tolerance – all these established through studies at physiological, biochemical and molecular level – the work is of

paramount importance in agriculture sector in the era of global climate change, conferring the plants stress tolerant with better yield of secondary metabolites of interest.

Commercially Important Medicinal plant's conservation, phytochemistry and pharmacognosy: Successfully evolved micropropagation protocols of some important and endangered medicinal plants (*Rubia, cordifolia, Oroxylum indicum, Elaeocarpus sphaericus* (Rudraksh), *Tylophora asthmatica*, and anti-diabetic plants *Gymnema sylvestre* and *Stevia rebaudiana*) as well as commercially important orchids from North East India, leading to effective conservation strategies of the germplasm, maintaining bioactive compounds and genetic fidelity of the regenerants.

Diabetes Menace: An International health issue - demonstrated that gymnemic acid (principle bioactive compound in *Gymnema sylvestre* plant having anti-diabetic property) has immunomodulatory property, stimulating lymphoid components of immune system. The traditional knowledge of anti-diabetic property of *G. sylvestre* is scientifically supplemented with its immunomodulatory properties. *These findings have bearing in R&D sector and drug industries; For the first time demonstrated* the effectiveness of micronutrients like boron and zinc in increasing stevioside content in *Stevia rebaudiana*, a highly valued anti-diabetic plant, maintaining genetic fidelity at the same time. *This finding has implications in zero calorie sweetener production by health/pharma sector worldwide*, helping in curbing diabetic menace through high production of diterpene glucosides like stevioside from stevia plants. Giving/offering such *in vitro* raised plants as well as consultancy to farmers coming from various parts of UP, Bihar, Chattisgarh which has added to larger cultivation of these medicinal plants adding to their livelihood.

Plant-PGPM interaction: *Work which is of paramount importance worldwide specially in agricultural fields where variations in nitrate nutrition occurs.* Demonstrated the stimulatory effects of Nitrate/Ammonium nutrient in the root traits differentiation, crop production and plant immunity against *Xanthomonas oryzae* and *Aspergillus niger* using tobacco mutants and pea, and *Trichoderma asperellum* T4 as a PGPF. We established the regulatory mechanism of nitrate and nitric oxide with signaling agents (Ca^{2+} , ROS, SA) which up or down-regulates several nuclear genes that help in plant's development and immunity, thereby demonstrating mechanistic pathway involved in nitric oxide mediated responses in respect to enhanced nitrogen use efficiency. *Provided Mechanistic model for role of Trichoderma asperellum T42 regulating nitric oxide mediated root growth and development in plants through enhanced uptake of nitrogen nutrition – a boost for agriculture sector and boon for biopesticide industries/companies:* Studies done on the molecular events associated with root growth and architecture provide evidence that NO production in roots depend on nitrate/ammonium root transporters and expression of nitrate reductase (NR) gene. NRT2.1 and AMT genes accelerated nitrogen uptake by roots, and expression level of plasma membrane bound nitrate reductase gene was responsible for enhanced secondary root growth, mediated through NR led conversion of N to NO. All these have implications on sustainable production of crop and hence the agriculture sector.

Completed/Ongoing projects: funded by DBT, NMPB, UGC, CST(UP), UPCAR, SERB-DST, BHU-IoE

Publications: Res. Papers In Natl and Intl Journals (150 in no.), book chapters (70 in no.), abstracts (more than 110 in no.). *Research publications in reputed journals with high impact factors such as* J Exp. Botany, J Ethnopharmacology, Phytotherapy Res, Plos One, RSC Advances, Frontiers Plant Sci., BMC Plant Biology, Appl Microbiol Biotech, Current Sci, Indian J Biotech, Indian J Exp. Biol., Acta Physiologia Plant, Vegetos, J Soil Sci Plant

Nutrition, South African J Botany, Industrial Crops Products, 3Biotech, Sugar Tech, J Carb Chem, Physiol Mol Biol Plants, J Plant Growth Regulation, Env. Res., Env. Pollution, Chemosphere, Biocatalysis Agric Biotech, Env Geochem Health, Biotech Genet Eng Reviews, J Polymer & Env, Fron Microbiol, Intl J Env Sci Tech, Env Tech Innovations, Plant Physiology Biochemistry, etc. **Research work cited** in International Research Journals with high impact factor like: J Exp Bot, New Phytologist, J Ethnopharmacology, Physiologia Plantarum, European J Soil Biology, Applied Microbiology, Tetrahedron Letters, J Biotech, Appl Microbiol Biotech, J Plant Protection Research, Biotechnology, J Phytopathology, European J Exp Biol., 3Biotech, Intl Res J Pharmacy, J Org Chem, J Nat Products, Org Biomol Chem, Sugar Tech, Medicinal Plants, J Pharmacognosy, PloS One, Analytical methods, Front. Pl. Sci., Natl. Product Res, In Vitro Cell Dev Biol., J Pl. Mol. Breed., Plant Cell Tiss Org Cult., Plant Physiol Biochem, Industrial Crops Products, Frontiers Pharmacology, Frontiers Microbiology, Phytotherapy Res, Appl Microbiol Biotech, BMC Plant Biol, Natural Product Res, Env Exp Botany, Molecules, Antioxidants, Carbohydrate Polymers, J Adv Res, Intl J Phytoremediation, Intl J Biol Macromol, Plant Cell Rep, Biological Control, RSC Adv, Biochem Biophys Res Comm, Plant Phenomics, Agronomy, Agricultural Water Management, etc, besides in Books and theses. All these publications are from Springer, Elsevier, Frontiers, T&F, BMC Series, Wiley, etc.

Authored 13 Books (books find place in various Overseas Institution's libraries) & **03 Practical Manuals**

Google Scholar Citation: More than 5500; H-Index: 38; i10 Index: 113

Recognized among top 2% of scientists worldwide according to the Stanford University and Elsevier database 2025

List of Selected Publications in the last six years

S.No.	Authors, Title of Papers, Journal, Year, Pages
1.	A. Hidangmayum, Padmanabh, Dwivedi, D.Katiyar and A. Hemantaranjan (2019) Application of Chitosan on Plant Responses with Special Reference to Abiotic Stress. Physiol Mol. Biol. Plants . DOI 10.1007/s12298-018-0633-1
2.	Singh, Bansh Narayan, Dwivedi, Padmanabh, Sarma, B.K., Singh, Gopal Shankar and Singh, Harikesh Bahadur (2019). A novel function of N-signaling in plants with special reference to <i>Trichoderma</i> interaction influencing plant growth, nitrogen use efficiency, and cross talk with plant hormones. 3Biotech , 9, 109-121, doi.org/10.1007/s13205-019-1638-3.
3.	Singh, Pallavi and Dwivedi, Padmanabh (2019). Micronutrients zinc and boron enhance stevioside content in <i>Stevia rebaudiana</i> plants while maintaining genetic fidelity. Industrial Crops Products , 140, doi.org/10.1016/j.indcrop.2019.111646
4.	Bansh Narayan Singh, Padmanabh Dwivedi, Birinchi Kumar Sarma and Harikesh Bahadur Singh (2019). <i>Trichoderma asperellum</i> T42 induces local defense against <i>Xanthomonas oryzae</i> pv. <i>oryzae</i> under nitrate and ammonium nutrients in tobacco. RSC Advances , 9, 39793-39810, DOI10.1039/c9ra06802c
5.	Navin Pradhan, Pallavi Singh, Padmanabh Dwivedi and Devendra Kumar Pandey (2020). Evaluation of sodium nitroprusside and putrescine on polyethylene glycol induced drought stress in <i>Stevia rebaudiana</i> Bertoni under <i>in vitro</i> condition. Industrial Crops Products , 154, 2020, 112754, doi.org/10.1016/j.indcrop.2020.112754
6.	Romaan Nazir, Suphla Gupta, Vijay Kumar, Ajai Prakash Gupta, Padmanabh Dwivedi <i>et al.</i> (2020). Enhanced <i>in vitro</i> production of diosgenin in shoot cultures of <i>Dioscorea deltoidea</i> by elicitation and precursor

	feeding. BMC Plant Biology , doi.org/10.21203/rs.3.rs-41829/v2.
7.	Karle, S.B., Guru, A., Dwivedi, P. <i>et al.</i> (2021). Insights into the Role of Gasotransmitters Mediating Salt Stress Responses in Plants. J Plant Growth Regul (2021), doi.org/10.1007/s00344-020-10293-z.
8.	PayalChakravorty and PadmanabhDwivedi (2021). Seed Priming and Its Role in Mitigating Heat Stress Responses in Crop Plants. J Soil Sci Plant Nutrition (doi.org/10.1007/842729-021-00474-4)
9.	Vivek Kumar, PadmanabhDwivedi, Prasann Kumar, Bansh Narayan Singh, Devendra Kumar Pandey, Vijay Kumar and Bandana Bose (2021). Mitigation of heat stress responses in crops using nitrate primed seeds. South African J Botany , 140 (2021) 25-36.
10.	Hussain, Shahnawaz, Pandey, Devendra Kumar, Konjengbam, Merinashwari, Dwivedi, Padmanabh, <i>et al.</i> (2021). Biotechnological interventions of in vitro propagation and production of valuable secondary metabolites in <i>Stevia rebaudiana</i> . Appl Microbiol Biotech doi.org/10.1007/s00253-021-11580-9
11.	Kumari, Poonam, Kaur, Prabhjot, Kumar, Vijay, Pandey, Babita, Nazir, Ramaan, Katoch, Kajal, Dwivedi, Padmanabh <i>et al.</i> (2021). Response surface methodology and artificial neural network modelling for optimization of ultrasound-associated extraction and rapid HPTLC analysis of asiaticoside from <i>Centella asiatica</i> . Industrial Crops Products , 176, 114320.
12.	Singh, Ankita, Dwivedi, Padmanabh, Kumar, Vijay and Pandey, Devendre Kumar (2021). Brassinosteroids and their analogs: Feedback in plants under <i>in vitro</i> conditions. South African J Botany , 143, 256-265.
13.	Guru, Akhankhya, Dwivedi, Padmanabh, Kaur, Prabhjot and Pandey, Devendre Kumar (2021). Exploring the role of elicitors in enhancing medicinal values of plants under <i>in vitro</i> condition. South African J Botany . doi.org/10.1016/j.sajb.2021.10.014.
14.	Hidangmayum, Akash and Dwivedi, Padmanabh (2021). Chitosan based nanoformulation for sustainable agriculture with special reference to abiotic stress: a review. J Polymer Environment , 30, 1264-1283.
15.	Dahibhatea, NileshLakshman, PadmanabhDwivedi, Kundan Kumar (2022). GCMS and UHPLC-HRMS based metabolite profiling of <i>Bruguiera gymnorhiza</i> reveals key bioactive compounds. South African J Botany . doi.org/10.1016/j.sajb.2022.02.004
16.	Ayangla, V.W. <i>et al.</i> (2022). Response surface methodology and artificial neural network modeling for optimization of solid-liquid extraction and rapid HPTLC analysis of glycyrrhizin in <i>Glycyrrhizaglabra</i> root. South African J Botany , 148, 11-20.
17.	Sharma, Binny, Singh, Bansh Narayan, Dwivedi, Padmanabh and Rajawat, MahendraVikram Singh (2022) Interference of Climate Change on Plant-Microbe Interaction: Present and Future Prospects. Frontiers Agronomy , doi: 10.3389/fagro.2021.725804.
18.	Pratiksha Singh, Prabhat K. Chauhan, Sudhir K. Upadhyay, Rajesh Kumar Singh, PadmanabhDwivedi, Jing Wang, Devendra Jain and Mingguo Jiang (2022). Mechanistic insights and potential use of siderophores producing microbes in rhizosphere for mitigation of stress in plants grown in degraded lands. Frontiers Microbiology . doi.org/10.3389/fmicb.2022.898979.
19.	Sudhir K. Upadhyay, Abhishek K. Srivastava, Vishnu D. Rajput, Prabhat K.

	Chauhan, Ali AsgerBhojiya, Devendra Jain, GyaneshwerChaubey, PadmanabhDwivedi, Bechan Sharma and Tatiana Minkina (2022). Root Exudates: Mechanistic Insight of Plant Growth Promoting Rhizobacteria for Sustainable Crop Production. Frontiers Microbiology . doi.org/10.3389/fmicb.2022.916488
20.	Akash Hidangmayum, PadmanabhDwivedi, PrasannKumarand Sudhir Kumar Upadhyay(2022). Seed Priming and foliar application of chitosan ameliorate drought stress responses in mungbean genotypes through modulation of morpho-physiological attributes and increased antioxidativedefense mechanism. J Plant Growth Regul. doi.org/10.1007/s00344-022-10792-1
21.	Diksha Kumari, BishunDeo Prasad, Padmanabh Dwivedi, Akash Hidangmayum and Sangita Sahni (2022). CRISPR/Cas9 mediated genome editing tools and their possible role in disease resistance mechanism. Molecular Biology Reports . doi.org/10.1007/s11033-022-07851-x
22.	Akash Hidangmayum and PadmanabhDwivedi (2023). Effect of chitosan seed priming on mungbeam seedlings subjected to different levels of water potentials. Acta Physiol Plant. , 45, 6. doi.org/10.1007/s11738-022-03483-7
23.	Akash Hidangmayum, Abhijit Debnath, Akhankhya Guru, Bansh Narayan Singh, Sudhir K Upadhyay and PadmanabhDwivedi (2022). Mechanistic and recent updates in nano-bioremediation for developing green technology to alleviate agricultural contaminants. Intl J Env Sci Tech . doi.org/10.1007/s13762-022-04560-7
24.	Gaurendra Gupta <i>et al.</i> (2022). Microbes-mediated integrated nutrient management for improved rhizo-modulation, pigeonpea productivity, and soil bio-fertility in a semi-arid agro-ecology. Fron Microbiol . doi.org/10.3389/fmicb.2022.924407
25.	Shah Nawaz, Prabhjot Kaur, MerinaswariKonjengbam, Vijay Kumar, R.C. Gupta, PadmanabhDwivedi <i>et al.</i> (2022). Screening of elite germplasms for industrially valuable medicinal crop <i>Stevia rebaudiana</i> forstevioside and rebaudioside A production: An HPTLC-linked chemotaxonomic assessment. South African J Botany . doi. org/10.1016/j.sajb.2022.09.004
26.	Prabhat K. Chauhan, Sudhir K. Upadhyay, ManikantTripathi, Rajesh Singh, Deeksha Krishna, Sushil K. Singh and PadmanabhDwivedi (2022). Understanding the salinity stress on plant and developing sustainable management strategies mediated salt-tolerant plant growth-promoting rhizobacteria and CRISPR/Cas9. Biotechnology and Genetic Engineering Reviews . doi.org/10.1080/02648725.2022.2131958
27.	Bansh Narayan Singh and PadmanabhDwivedi (2022). <i>Trichoderma</i> induced promotion of nitrogen use efficiency is mediated by nitric oxide generation leading to improved growth and yield in pea plants. J Plant Growth Regul . doi.org/10.1007/s00344-022-10861-5.
28.	Sudhir K. Upadhyay, Priyanka Devi, Vinay Kumar, Himanshu K. Pathak, Prasann Kumar, Vishnu D. Rajput and PadmanabhDwivedi (2022). Efficient removal of total arsenic (As ³⁺ /5 ⁺) from contaminated water by novel strategies mediated iron and plant extract activated waste flowers of marigold. Chemosphere , doi.org/10.1016/j.chemosphere.2022.137551
29.	Simranjeet Singh, T.S.S.K. Naik, C. Thamaraiselvan, S.K. Behera, Pavithra. N, BidishaNath, P. Dwivedi, Joginder Singh, Praveen C. Ramamurthy (2023). Applicability of new sustainable and efficient green metal-based nanoparticles for removal of Cr(VI): Adsorption anti-microbial, and DFT studies.

	<i>Environmental Pollution</i> , 320, 121105.doi.org/10.1016/j.envpol.2023.121105
30.	Simranjeet Singh, Pavithra N, T.S.S.K. Naik, U. Basavaraju, C. Thamaraiselvan, S.K. Behera, RetinderKour, PadmanabhDwivedi, S. Subramanian, Nadeem A. Khan, Joginder Singh, Praveen C. Ramamurthy (2023). Removal of Pb ions using green Co3O4 nanoparticles: Simulation, modeling, adsorption, and biological studies. <i>Environmental Research</i> , 222, 115335. doi.org/10.1016/j.envres.2023.115335
31.	Bhawna Chaudhary, BishunDeo Prasad, SangitaSahni, DikshaKumari, V.K. Sharma and PadmanabhDwivedi (2023). Brassinosteroid Mediated Modulation in the Gene Expression Analysis of Genes Associated with Arsenic Uptake and Transport in Rice (<i>Oryzasativa</i> L.) for Effective Mitigation of Arsenic. <i>J Plant Growth Regulation</i> . doi.org/10.1007/s00344-023-11073-1
32.	Payal Chakraborty and PadmanabhDwivedi (2023). Role of boron as priming agent on biochemical and antioxidant system in two wheat varieties against heat stress. <i>J Plant Growth Regulation</i> . doi.org/10.1007/s00344-023-11029-5
33.	Padmanabh Dwivedi and Sudhir K Sopory (2023). Unravelling the mechanism of stress responses in crop plants. <i>J Plant Growth Regulation</i> , 42, 5961-5964 doi.org/10.1007/s00344-023-11104-x
34.	Prabhat K. Chauhan, Sudhir K. Upadhyay, Vishnu D. Rajput , Padmanabh Dwivedi, Tatiana Minkina and Ming Hung Wong (2024). Fostering plant growth performance under drought stress using rhizospheric microbes, their gene editing, and biochar. <i>Environ Geochem Health</i> , 46:41 doi.org/10.1007/s10653-023-01823-1
35.	Sudhir K. Upadhyay, Garima Singh, Nitu Rani, Vishnu D. Rajput, Chandra Shekhar Seth, Padmanabh Dwivedi, Tatiana Minkina, Ming Hung Wong, Pau Loke Show and Kuan Shiong Khoo (2024). Transforming bio-waste into value-added products mediated microbes for enhancing soil health and crop production: Perspective views on circular economy. <i>Environmental Technology Innovation</i> , 34, 103573. https://doi.org/10.1016/j.eti.2024.103573.
36.	Prasann Kumar, Padmanabh Dwivedi and Sudhir K Upadhyay (2024). Optimization of polyamine and mycorrhiza in sorghum plant for removal of hazardous cadmium. <i>Plant Physiology Biochemistry</i> , 214 https://doi.org/10.1016/j.plaphy.2024.108846
37.	Diksha Kumari, Bishun Deo Prasad, Padmanabh Dwivedi, Sangita Sahni, Mankesh Kumar, Sand Alamri, Muhammad Faheen Adil and Khalid A Alakeel (2024). Comprehensive analysis of transcription factor binding sites and expression profiling of rice pathogenesis related genes (<i>OsPR1</i>). <i>Fron Plant Science</i> . Doi 10.3389/fpls.20241463147
38.	Diksha Kumari, Bishun Deo Prasad, Padmanabh Dwivedi (2024). Genome – wide analysis of calmodulin binding Protein60 candidates in the important crop plants. <i>Molecular Biology Reports</i> , 51, 1105. doi.org/10.1007/s11033-024-10032-7.
39.	Binny Sharma, Padmanabh Dwivedi and Ankita Ankita (2025). Effect of chitosan and Trichoderma on Pea sativum germinating seeds under induced cadmium toxicity. <i>J Plant Growth Regul.</i> Doi.org/10.1007/s00344-024-11578-3
40.	Payal Chakraborty, Kuldeep Rajpoot and Padmanabh Dwivedi (2025). Optimizing wheat resilience to heat stress via boron-based seed priming: insights from morphological and antioxidant assessments. <i>Cereal Research Communications</i> , doi.org/10.1007/s42976-025-00730-8

41.	E. Kariali, S. Panigrahi, P. K. Suna, P. K. Senapati, R. Das and P. Dwivedi (2025). Exogenous and Endogenous Signals: Critical Factors for Regulation of Flowering Time and Grain Yield in Rice. Russian J Plant Physiology , Vol. 72:186
42.	Divya Jaiswal, D K Pandey, K Sowjanya Sree and Padmanabh Dwivedi (2026). Role of elicitors in secondary metabolites production in <i>Glycyrrhiza glabra</i> L., a highly valued medicinal plant. Nucleus , doi.org/10.1007/813237-026-00642-w
43.	Prasann Kumar, Mastu Patel and Padmanabh Dwivedi (2026). Strigolactones as central integrators of plant development and multistress resilience. J Plant Growth Regul. doi.org/10.1007/s00344-025-12032-8

Books Published

1. Plant Tissue Culture (2004) Scientific Publishers (India), Jodhpur. ISBN: 81-7233-357-9 (Padmanabh Dwivedi).
2. Environmental Pollution and Environmental Management (2004) Scientific Publishers (India), Jodhpur. ISBN: 81-7233-358-4 (Padmanabh Dwivedi).
3. Physiology of Abiotic Stress in Plants (2005) Agrobios (India), Jodhpur. ISBN: 81-7754-247-8 (Padmanabh Dwivedi & R S Dwivedi – IISR, Lucknow).
4. Biodiversity and Environmental Biotechnology (2007) Scientific Publishers (India), Jodhpur. ISBN: 81-7233-467-2 (Padmanabh Dwivedi, S. K. Dwivedi & M. C. Kalita).
5. Polyamines, Heavy Metals and *Stevia rebaudiana* Bertoni under *in vitro* condition (2012) Lambert Academic Publishing, Germany. ISBN-10: 3659201472 (Prasann Kumar and Padmanabh Dwivedi)
6. Objective Plant Physiology: MCQ in Plant Physiology (2013) Scientific Publishers (India), Jodhpur. ISBN: 978-81-7233-845-9 (Padmanabh Dwivedi and Prasann Kumar)
7. Objective Plant Physiology: MCQ in Plant Physiology (2015) Revised 2nd Ed. Scientific Publishers (India), Jodhpur. ISBN: 978-81-7233-954-8 (Padmanabh Dwivedi and Prasann Kumar)
8. Physiological Interventions for Improved Yield of Sorghum (2017) Lambert Academic Publishing, Germany. ISBN: 978-3-330-08593-0 (Prasann Kumar and Padmanabh Dwivedi)
9. Biodiversity of Energy Crops: Empowering the Green Economy of India (2017). Lambert Academic Publishing, Germany. ISBN: 978-3-330-08290-8 (Prasann Kumar and Padmanabh Dwivedi)
10. Mycorrhiza assisted remediation of cadmium toxicity in sorghum (2017) Lambert Academic Publishing, Germany. ISBN: 978-3-330-33279-9 (Prasann Kumar and Padmanabh Dwivedi)
11. Objectives in Life Science (Plant Science) (2017) S. Chand Publishing, New Delhi. ISBN: 978-93-525-3367-1 (Prasann Kumar and Padmanabh Dwivedi)
12. Objective Plant Physiology: MCQ in Plant Physiology (2017) Revised 3rd Ed. Scientific Publishers (India), Jodhpur (Padmanabh Dwivedi and Prasann Kumar)
13. Objective Plant Physiology: MCQ in Plant Physiology (2019) Revised 4th Ed. Scientific Publishers (India), Jodhpur (Padmanabh Dwivedi and Prasann Kumar)

Practical Manuals Published

1. Experiments in Plant Physiology: A lab manual (2007)
2. Lab Manual on Plant Health Clinic (2017) ICAR funded
3. Lab manual on Plant Physiological and Biochemical Experiments (2017) ICAR funded

Awards/Scholarships/Fellowships/Recognitions (National and International):

- Malviya Medal (BHU) 1991
- University Medal (BHU) 1993
- Gold Medal (BHU) 1993
- Jawaharlal Nehru Memorial Fund Award (New Delhi) 1993
- UNESCO Visiting scholarship (Institute of Microbiology, Prague, Czech Republic) (1994-95)
- Cambridge Nehru Scholarship award for doing Ph.D. from Cambridge University (UK). (1995-98)
- Downing Müller Cambridge Scholarship award of Cambridge University (UK) (1995-98)
- Overseas Research Studentship award (U.K.) (1995-98)
- Young Scientist Award (Council of Science & Technology, Govt. of U.P.) (2000-2001)
- INSA National Visiting Fellowship (2002)
- R D Asana Medal of Indian Society for Plant Physiology (2003)
- INSA-DFG Fellowship (Germany) (2008)
- Prof Hira lal Chakravarty award of Indian Science Congress Association (2007-08)
- Prof. Y S Murty Medal award of Indian Botanical Society (2009)
- Commonwealth Academic Staff Fellowship of U.K. (2014)
- Best Teacher Award (2016) by ICAR-BHU for excellence in teaching in agriculture
- DST-International Travel Grant (2016)
- International achievement award (2017)
- ISCA Platinum Lecture award (2023)
- Prof. M S Swaminathan Memorial award by Society for Plant Research (2025)
- Fellow, Cambridge Commonwealth Society (U.K.) (1995)
- Fellow, Cambridge Philosophical Society (U.K.) (1996)
- Fellow, Indian Botanical Society (2010)
- Fellow, Indian Society for Plant Physiology (2010)
- Founding Fellow, Purvanchal Environmental Association (1999)
- Elected and served as Sectional member (Plant Science section) of Indian Science Congress Association for 2012-13
- Elected and served as Vice President of Indian Society for Plant Physiology (2013)
- Nominated as Graduate member of Institute of Biology, London (1997-1998)
- Associateship offered in the University of California, USA (2004)
- Life Member of the Downing College Association, University of Cambridge, U.K.
- Life Member of the "Cambridge Society", Cambridge, U.K.
- Nominated as one of the six postgraduate students to represent the University of Wales, Bangor, U.K. before the "Quality Audit" team. This is a major inspection by an external agency to assess quality of teaching and research, and the policies and procedures of the University (1997-98)
- Nominated to the Board of Research Advisors 2000 of the American Biographical Institute, USA

Patents:

Published 04 Indian Patents and 01 Patent Granted as Inventor (developed as collaborative work under the aegis of MoU between I.Ag.Sci., BHU and School of Agriculture, LPU)

Organized: (11 in Nos): National and International Conferences, and SAARC Workshop; ICAR sponsored Winter School & Summer School; UGC-Refresher Course, Memorial Lectures, etc, in the capacity of Organizing Secretary/Joint Organizing Secretary/Convener/Course Director/Course Co-ordinator.

Delivered Invited lectures(more than 50 in no.) in other Universities and Conferences, UGC-Academic Staff College (HRDC), ICAR-Winter/Summer School, as Invited speaker/Resource person, etc.

Lectures/Talks delivered abroad include: 1. University of Cambridge, U.K.; 2. University of Canterbury, U.K.; 3. University of York, U.K.; 4. University of Wales, Bangor, U.K.; 5. Chester College, Wales, U.K.; 6. University of Cardiff, Wales, U.K.; 7. Aronsborg, Stockholm, Sweden; 8. University of Wuerzburg, Germany; 9. University of Granada, Spain; 10. University of Nice, France.

Reviewer of around 30 National and International research journals in the past and at present: Acta Physiologia Plant, J Agronomy and Crop Science, Physiology & Molecular Biology of Plants, Current Science, Indian J Plant Physiology, Indian J Biotechnology, Intl. J Agriculture, Environment & Biotechnology, AoB Plants, Drug Delivery Letters, The Rice, J Phytopathology, Letters in Drug Design & Discovery, Intl. J Fruit Science, Plant Growth Regulation, Chemosphere, Frontiers in Plant Science, Scientific Reports, Turkish J Botany, NZ J Crop Hort Sci., JPGR, Brazilian J Pharmacognosy, Industrial Crop Products, BMC Plant Biology, Physiologia Plantarum, J Soil Sci Plant Nutrition, Fron Microbiol, Env Geochem Health, etc. All very highly reputed Indian and foreign journals of the world with high impact factor (in Scopus).

Editorial Responsibility:

- i. **Guest editor special issues:**a. J Plant Growth Regulation (Springer) with Prof. S K Sopory, Ex-VC, JNU.; b. Agriculture (MDPI journal) with Dr. Rakesh Singh, NBPGR, New Delhi.
- ii. Acted as **Associate Editor** of J Functional Environ Botany, and **Ex-Councillor**, Intl J Plant Reproductive Biology
- iii. Acting as **Technical Editor** of Intl. J Agric Environ Biotech
- iv. **Review Editor**, Frontiers in Plant Science (Plant Physiology section and Plant Symbiotic interaction section), highly reputed journal in the field of Plant Science.
- v. **Editorial Board member**, Plant Physiology Reports (Springer journal)
- vi. **Sectional Editor** (Plant Physiology & Biochemistry), Vegetos (Springer journal)

Academic Administrative Responsibility leading to contribution in higher education:

1. Involved in **preparation of University's Mega Project as subject expert:** UGC funded project on Biodiversity under 'Potential for Excellence' scheme. Amount 3 crores 18 lakhs sanctioned at Rajiv Gandhi University (RGU), Itanagar where I served before joining at BHU. Worked as one of the Investigators in this Centre of Biodiversity, RGU.
2. Involved in **preparing the proposal for establishment of Women Technology Park in RGU, Itanagar**, which was later sanctioned by DST (worth 42.00 lakhs), as a subject expert.
3. Coordinated (as **Nodal Officer**) an orientation program on **Fulbright Scholarship** in the Rajiv Gandhi University, Itanagar (where I was serving at that time), sponsored by Kolkata regional office.
4. Acted/Acting as **Subject Expert/examiner** in confidential All India Entrance Exam of BHU, and other All India competitive examinations including State UPSE exams, NEET (Medical), ASRB (ICAR), State Higher Education Commission, and as **Subject Expert for**

recruitment of Asstt. Prof/Assoc. Prof. and Professor as well as Head of the Division of ICAR institution, etc.

5. Chairing/Co-chairing conference sessions.
6. Served in the past as member Board of Studies Post Graduate in Botany, and Board of Studies UG in Physics at Rajiv Gandhi University, Itanagar
7. Served as a **member of the Review committee** for establishment of Instrumentation **Central Discovery Centre (CDC)**, and **Project Implementation committee of CDC** meant for installation of high cost sophisticated equipments for use by faculty members, students and industrial purpose (**lett No R/GAD/Misc/42/31107-120 dt 11.10.17 & R/GAD/Misc/42/56790 dt 18.2.19**); More than Rupees 100 crores project. The committee constituted by Vice Chancellor, BHU.
8. Served as **Member, Core management committee at the University level (BHU) for establishment of DST-Sophisticated Analytical Instrument Facility (SAATHI-BHU)**. Grant of Rs 125 crores sanctioned by DST, Govt. of India to BHU (one of the three Universities to get this grant/status).
9. **VC nominee** in the project purchase committee related to purchase confined to Open Tender for Faculty of Social Science, BHU (2022) and Faculty of Commerce (2024).
10. Nominated as a **member of Scientific Advisory Committee (SAC)** of Tea Research Association, Tocklai Tea Research Institute, Jorhat for 2022-25.
11. Served as **Overseas Officer, Downing Officer, Downing College, University of Cambridge, U.K.**
12. **Served as Editor-in-Chief** of a Research Journal with ISSN No. for three years (Arunachal University Research Journal).
13. **Served/serving as /member** in various committees **at the Institute** level, as follows, related to academics/ICAR (teaching), non-teaching affairs, administrative related matter, enquiry related matter, admission, etc.:

Contribution At the Institute Level

- i. Performed duties as **Head of the Department** (2-terms) from 1st June, 2016 to 31st May, 2019, and during 1st June, 2022 to 31st May, 2025
- ii. **Ex-Chairman**, Departmental Policy & Planning Committee, Departmental Research Committee, Departmental Council and Departmental Purchase Committee.
- iii. **Ex-Chairman**, Board of Studies (Departmental), and Member, Faculty of Agriculture.
- iv. **Ex-Member** of Institute's Policy and Planning Committee (PPC) and Academic Council BHU for 06 years.
- v. Worked as Member, **Institute's Technical Cell** meant for fostering excellence in research and developmental activities, and **Information Cell** of the Institute of Agricultural Sciences, BHU.
- vi. **Ex-Chairman, Departmental Quality Assurance Cell** and **Ex-Member**, Internal Quality Assurance Cell of Faculty of Agriculture, BHU.
- vii. **Ex-Member**, Agro café management committee of the Institute.
- viii. **Conferences/Workshop/Winter & Summer Schools/Seminars Organized at BHU:**
 - a. **ICAR sponsored** 21-days Winter School as **Course Co-ordinator**; from 2-22 Feb 2009;
 - b. UGC-Academic Staff College sponsored 21-days Refresher Course 2010 in Agri. Sci. as **Coordinator**;
 - c. **SAARC workshop on biodiversity conservation** 21-22 Sept 2010 as **Organizing Secretary** (DST, Govt. of India funded);
 - d. National Conference on Plant Physiology 25-27 Nov 2010 as **Joint Organizing Secretary** in the Department of Plant Physiology;

- e. Intl. Conf on Issues and Challenges in Doctoral Research as **Convener**, on 25th Aug 2015;
- f. National Conf. of Plant Physiology, BHU, Varanasi, 3-5 March 2016 as **Joint Organizing Secretary**;
- g. **ICAR sponsored** 21-days Summer School as **Course Director**, from 6-26 Sept. 2017;
- h. Organized three Prof. J C Bose Memorial Lectures in the Department at Institute level.
- ix. Formulated and facilitated, as Head of the Department taking lead, signing of **02 MoUs** between our Department/Institute and (1) ICAR-National Institute for Abiotic Stress Management, Baramati, Pune (2) School of Agriculture, Lovely Professional University, Jalandhar.
- x. Served as **Chairman** of sub-committee for monitoring of Students' monthly Attendance for Faculty of Agriculture, and a **member** of Institute's Attendance monitoring core committee.
- xi. Member of several committees constituted by Institute related to academics/exam/admission/Conferences, including confidential All India Entrance Exam of BHU.
- xii. **Member, Germplasm Identification Committee** of the Institute at BHU (2023-24).
- xiii. **Member, SC/ST Grievance Cell** of the Faculty of Agriculture at BHU (2024 onwards).
- xiv. Served as **Chairman** of a committee to **prepare a roadmap for implementation of actual teaching as per UGC norm in an academic session**. (Lett No. IAS/2029-20/183 dt 17.5.19)
- xv. Acting as **Coordinator, Internal Quality Assurance Cell (IQAC)** of the Institute since 15.11.23.
- xvi. Served as **Chairman** of a committee for **recommending appropriate amendments in the reservation roster of technical staff** in accordance to the OM dated 2.7.1997 with subsequent amendment from time to time (Lett. No. IAS/2020-21/450 dt. 4.12.20).
- xvii. Served as **Chairman** of a **Fact Finding Committee to enquire into matter in light of contents of letter sent by Head, DSFT** (Lett No. IAS/2020-21/1999 dt 11.9.20).
- xviii. Appointed as a **Mentor** for students of B.Sc (Ag) for preparation of JRF examination (let No. Dean (Ag)/IAS/2019-20/433 dt 08.11.19).
- xix. Served as **Convener** of a committee **to work out a roadmap for adjustment of faculty members of KVK and to identify existing vacancies of RGSC (BHU Campus) & explore possibility for adjustment of faculty positions of KVK-Barkachha against the same or against unused vacancy of FoA at RGSC** (Lett No. IAS/2019-20/271 dt 31.5.19).
- xx. Acted as a member of **moderation board** for controlling quality of entrance test (BHU) question papers of Agriculture subject. (Lett No. IAS/2018-19/2155 dt 13.11.19).
- xxi. Acted as a member of a committee to assess teaching/credit load of each Department of the Institute. Infrastructure facilities and space in the Departments (Lett No. IAS/2019-20/1020 dt 12.2.19), etc.

Countries Visited:

United Kingdom, Czech Republic, Hungary, Slovak Republic, Germany (twice), Sweden, Austria, Spain, France, Monaco

Dated: 22nd March 2026

P. Anived