



महात्मा ज्योतिबा फुले
रुहेलखण्ड विश्वविद्यालय, बरेली

Faculty Profile on University Website

www.mjpru.ac.in

Title	Dr.	First Name	Upendra	Last Name	Kumar	Photograph
Designation		Professor				
Department		Plant Science				
Address		A 4 Type-IV, MJP Rohilkhand University, Campus, Bareilly				
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Web-Page		Orchid ID: https://orcid.org/0000-0002-1137-9103				
Educational Qualifications (Graduation Onwards)						
Course/Degree		Institution		Year		Details/Thesis Topic/Subjects
B.Sc		CCS University, Meerut		2002		Botany, Chemistry, Zoology
M.Sc		CCS University, Meerut		2004		Botany
M.Phil		CCS University, Meerut		2005		Botany
Ph.D		CCS University, Meerut		2009		Botany
Career Profile						
Organization / Institution		Designation		Duration		Role
MJP Rohilkhand University, Bareilly		Professor		June, 2023 To till Date		Teaching and Research
Research Interests / Specialization						
Functional Genomics and Genetic Engineering						
Teaching Experience (Subjects/Courses Taught)						
14 years of teaching (UG & PG) and research experience						
No of Research Scholars Successfully Guided						
Name of Program		Awarded		Under Supervision		
Ph.D		05		05		
M.Sc		12		04		
Honors & Awards						
⇒ Visiting Scientist, Stockbridge School of Agriculture, University of Massachusetts, Amherst, USA						
⇒ Elected Fellow of "The Linnaean Society of London" in 2021						
⇒ Certificate of Appreciation from Vice-Chancellor, CCS HAU, Hisar for the award of SPARC projects with the University of Massachusetts, Amherst, USA.						
⇒ Received Certificate of Recognition from The Science and Engineering Research Board (SERB) and the American Chemical Society (ACS) acknowledge and appreciate for reviewing the posters of SERB-ACS National Postdoctoral Fellowship (NPDF) Research						

Poster Competition 2021, under the category of Life Sciences.

⇒ Awarded travel grant by Department of Science and Technology, Government of India to attend 12th International Wheat Genetic Symposium (12th IWGS) September 8-14, 2013, Pacifico Yokohama, JAPAN.

⇒ Best paper presentation award in 12th International Wheat Genetic Symposium (12th IWGS) September 8-14, 2013, Pacifico Yokohama, JAPAN.

⇒ Received Young Scientist Award (2015) given by Uttarakhand Council for Science & Technology, Govt. of Uttarakhand

⇒ Received a merit certificate for best presentation award at Golden Jubilee International Conference on “New Millennia Agriculture-Novel Trends and Future Scenario” organised by the Directorate of Research, CCS HAU, Hisar from November 6-8, 2019.

⇒ Member Faculty of CCS HAU, Institutional Innovation Cell, Ministry of Human Resource Development, Govt. of India

Publications /Academic Activities (Numbers Only)

Books & Monographs (Single Author)	0	Research Papers Published in International Journals	40	Papers Presented in Seminars/ Conferences	14	Ph.D Student (Under Supervision)	05	Research Projects (Completed)	04
Books (Co-authored)	01	Research Papers Published in Other Journals	06	Seminar/ Conferences Attended	18	Workshops Organized	05	Research Projects (Ongoing)	0
Books (Edited)	03	Articles Published in Popular Fora, e.g., Websites, Blogs, Newspapers, Magazines etc.	02	Sessions Chaired in Seminars/ Conferences	01	Membership of Academic/ Professional Bodies	02	Foreign Countries Visited for Academic Assignments	03
Chapters in Edited Books	07			Ph.D Student Guided	05				

Details of Publications /Academic Activities (2010 Onwards)

(a) Books / Monographs

1. K.P. Singh, Anuj Kumar, **Upendra Kumar** (2018) Medicinal Plant of Uttarakhand (in 3 volumes) ISBN: 9789351249092. *ASTRAL Daya Publishing House, New Delhi*
2. Amit Kumar, Anubha Sharma, **Upendra Kumar**, Tejbir Singh Dhaka (2015) Economic Botany and Plant Genetic Resources at a glance. *Sharma Publishers and Distributors, New Delhi* (ISBN: 9789382310044, 9382310045 (Edition 1-2015))

(b) Papers Published in Indexed/ Peer Reviewed Journals

1. Prabina Kumar Meher, **Upendra Kumar** Pradhan, Sanchita Naha, Atmakuri Ramakrishna Rao, Upendra Kumar, Soumen Pal, Ajit Gupta (2023) ASmiR: A machine learning framework for prediction of abiotic stress-specific miRNAs in plants. *Functional & Integrative Genomics* <https://doi.org/10.1007/s10142-023-01014-2> (**Impact Factor- 3.811**)
2. Sandeep Kumar, Dinesh Kumar Saini, Farkhandah Jan, Sofora Jan, Mohd Tahir, Ivica Djalovic, Dragana Latkovic, Mohd Anwar Khan, Sundeep Kumar, V. K. Vikas, **Upendra Kumar**, Sundip Kumar, Narendra Singh Dhaka, Om Parkash Dhankher, Reyazul Rouf Mir (2023) Comprehensive meta-QTL analysis for dissecting the genetic architecture of stripe rust resistance in bread wheat. *BMC Genomics* **24**,

259. <https://doi.org/10.1186/s12864-023-09336-y> (**Impact Factor- 4.931**)

3. Vijeta Sagwal, **Upendra Kumar***, Pooja Sihag, Yogita Singh, Priyanka Balyan, Krishna Pal Singh (2023) Physiological traits and expression profile of genes associated with nitrogen and phosphorous use efficiency in wheat. **Molecular Biology Reports** DOI: 10.1007/s11033-023-08413-5 (**Impact Factor- 2.85**) ***Corresponding Author**
4. Pooja Sihag, Vijeta Sagwal and **Upendra Kumar*** (2023) Physiological, Biochemical and Molecular changes under heat stress in bread wheat. *Journal of Plant Development Sciences*. 15(1):9-16. (**NAAS Rating- 5.11**) ***Corresponding Author**
5. Sourav Panigrahi, **Upendra Kumar***, Sonu Swami, Yogita Singh, Priyanka Balyan, Reyazul Rouf Mir, Om Parkash Dhankher, KP Singh (2023) Meta QTL analysis for abiotic stress tolerance in Chickpea. **BMC Genomics (Accepted) (Impact Factor- 4.931) *Corresponding Author**
6. Sofora Jan, Sachin Rustgi, Rutwik Barmukh, Asif B. Shikari, Brenton Leske, Amanuel Bekuma, Darshan Sharma, Wujun Ma, **Upendra Kumar**, Uttam Kumar, Abhishek Bohra, Rajeev K. Varshney, Reyazul Rouf Mir (2023) Advances and opportunities in unraveling cold tolerance mechanisms in the world's primary staple food crops. *The Plant Genome (Under Review)* (**Impact Factor- 5.826**)
7. Vijai Malik, Faiza Mohamad Ikram, Yogita Singh, Vivek Kumar, Pranita Malik, Priyanka Balyan, Krishna Pal Singh, **Upendra Kumar*** (2023) Structural and functional characteristics and expression profile of 20S proteasome gene family in *Sorghum bicolor*. *Journal of Plant Physiology and Biochemistry*. (Accepted) (**Impact Factor- 6.50**) ***Corresponding Author**
8. Sagwal, V., Sihag, P., Singh, Y. Mehla, S., Kapoor, P., Balyan, P., Kumar, A., Mir, RR., Dhankher, OP., **Kumar, U***. (2022) Development and characterization of nitrogen and phosphorus use efficiency responsive genic and miRNA derived SSR markers in wheat. *Nature Heredity*. <https://doi.org/10.1038/s41437-022-00506-4> (**Impact Factor- 4.899**) ***Corresponding Author**
9. Bushra Rasool, Baby Summuna, Ivica Djalovic, Tariq Ahmad Shah, Parveez Ahmed Sheikh, Sachin Gupta, Sandhya Tyagi, Sierra Bilal, Rajeev Kumar Varshney, Ishfaq Abidi, Jitendra Kumar, R. Varma Penmetsa, Imtiyaz Khandey, **Upendra Kumar**, Parvaze Ahmad Sofi, Mohd Anwar Khan, Mohd Ashraf Bhat, Fahim Jeelani Wani, Mahendar Thudi, Reyazul Rouf Mir (2022) Delineating Marker-trait Associations for Fusarium Wilt in Chickpea using Axiom® Cicer SNP Array. *Phytopathology* doi.org/10.1094/PHYTO-05-22-0164-FI (**Impact Factor- 4.010**)
10. Vivek Kumar, Hemant Sharma, Lalita Saini, Archasvi Tyagi, Pooja Jain, Yogita Singh, Priyanka Balyan, Sachin Kumar, Reyazul Rouf Mir, Krishna Pal Singh, **Upendra Kumar*** and Vijai Malik (2022) Phylogenomic Analysis of 20S Proteasome Gene Family Reveals Stress-responsive Patterns in Rapeseed (*Brassica napus* L.) *Frontiers in Plant Science*. doi: 10.3389/fpls.2022.1037206 (**Impact Factor- 6.627**) ***Corresponding Author**
11. Darshana Bisht, Naveen Kumar, Yogita Singh, Rashmi Malik, Narendra Singh Dhaka, Neeraj Pal, Priyanka Balyan, Reyazul Rouf Mir, Vinay Kumar Singh, Om Parkash Dhankher, **Upendra Kumar*** and Sundip Kumar (2022) Effect of stem structural characteristics and cell wall components related to stem lodging resistance in a newly identified mutant of hexaploid wheat (*Triticum aestivum* L.) *Frontiers in Plant Science*. 13:1067063. doi:10.3389/fpls.2022.1067063 (**Impact Factor- 6.627**) ***Corresponding Author**
12. Yogita Singh, **Upendra Kumar***, Sourav Panigrahi, Priyanka Balyan, Pooja Sihag,

- Sheetal Mehla, Vijeta Sagwal, Krishna Pal Singh, OmParkash Dhankher (2022) Nanoparticles as novel elicitors in plant tissue culture: Current status & Future outlook. **NanoImpact** (Accepted) **(Impact Factor- 6.25) *Corresponding Author**
13. Pooja Sihag, **Upendra Kumar***, Vijeta Sagwal, Prexha Kapoor, Yogita Singh, Sheetal Mehla, Priyanka Balyan, Reazul Rouf Mir, Rajeev K Varshney, Krishna Pal Singh, Om Parkash Dhankher (2022) Effect of terminal heat stress on osmolyte accumulation and gene expression during grain filling in bread wheat (*Triticum aestivum* L.) *The Plant Genome* DOI: 10.1002/tpg2.20307 **(Impact Factor- 5.826) *Corresponding Author**
 14. Sheetal Mehla, Upendra Kumar*, Prexha Kapoor, Yogita Singh, Pooja Sihag, Vijeta Sagwal, Priyanka Balyan, Anuj Kumar, Navjeet Ahalawat, Nita Lakra, Krishna Pal Singh, **Reyazul Rouf Mir and Om Parkash Dhankher** (2022) Structural and functional insights into the candidate genes associated with different developmental stages of flag leaf in bread wheat (*Triticum aestivum* L.) *Frontiers in Genetics, (Plant Genomics)*. doi: 10.3389/fgene.2022.933560 **(Impact Factor- 4.772) *Corresponding Author**
 15. Prexha Kapoor, Rahul Kumar Dhaka, Pooja Sihag, Sheetal Mehla, Vijeta Sagwal, Yogita Singh, Sonu Langaya, Priyanka Balyan, Krishna Pal Singh, Baoshan Xing, Jason C. White, Om Parkash Dhankher, **Upendra Kumar*** (2022) Nanotechnology-enabled Biofortification Strategies for Micronutrient Enrichment of Food Crops: Current Understanding and Future Scope. *NanoImpact* doi.org/10.1016/j.impact.2022.100407 **(Impact Factor- 6.038) *Corresponding Author**
 16. Fayaz H, Tyagi S, Wani AA, Pandey R, Akhtar S, Bhat MA, Chitikineni A, Varshney RK, Thudi M, **Kumar U**, Mir RR (2022) Genome-Wide Association Analysis To Delineate High-Quality Snps For Seed Micronutrient Density In Chickpea (*Cicer Arietinum* L.) *Nature Scientific Reports*. <https://doi.org/10.1038/s41598-022-14487-1> **(Impact Factor- 5.134)**
 17. Meher, P.K.; Begam, S.; Sahu, T.K.; Gupta, A.; Kumar, A.; **Kumar, U.**; Rao, A.R.; Singh, K.P.; Dhankher, O.P. (2022) ASRmiRNA: Abiotic Stress-Responsive miRNA Prediction in Plants by Using Machine Learning Algorithms with Pseudo **K**-Tuple Nucleotide Compositional Features. *International Journal of Molecular Sciences*, **23**, 1612. <https://doi.org/10.3390/ijms23031612> **(Impact Factor- 6.208)**
 18. Vijeta Sagwal, Pooja Sihag, Ankush Kumar, Sapna Yadav, Ritu Khasa, Sushma Kumari Pawar, Swati Sharma and **Upendra Kumar*** (2022) Approaches to Improve Nitrogen and Phosphorous use Efficiency in Wheat. **Biological Forum – An International Journal**. 4(4a): 572-580 **(NAAS Rating- 5.24) *Corresponding Author**
 19. Pooja Sihag, Vijeta Sagwal, Anuj Kumar, Priyanka Balyan, Reyazul Rouf Mir, Om Parkash Dhankher, **Upendra Kumar*** (2021) Discovery of miRNAs and development of heat-responsive miRNA-SSR markers for characterization of wheat germplasm for terminal heat tolerance breeding. *Frontiers in Genetics, (Plant Genomics)*. doi: 10.3389/fgene.2021.699420 **(Impact Factor- 4.772) * Corresponding Author**
 20. Thakur S, **Kumar U**, Malik R, Bisht D, Balyan P, Mir RR, et al. (2021) Physical localization of 45S rDNA in *Cymbopogon* and the analysis of differential distribution of rDNA in homologous chromosomes of *Cymbopogon winterianus*. **PLoS ONE** 16 (11): e0257115. <https://doi.org/10.1371/journal.pone.0257115> **(Impact Factor- 3.752)**
 21. Malik, K., Mandhania, S., Anil, Arya, S., Dhaka, A., Ravikant, Kumari, N., Malik, K., Priyanka, **Kumar, U.**, (2021) Organic farming and bio-nanomaterial conflux: A way forward for sustainable agriculture. *Journal of Nanoscience and Nanotechnology*, 21 (06): 3379-3393 doi:10.1166/jnn.2021.19003 **(Impact Factor- 1.354)**

22. Singh, D., Arya, S., Gupta, B., Kaushik, D., Arya, VS., Priyanka, **Kumar, U.**, Singh, K., (2021) Applications of nanotechnology in forest management. *Journal of Nanoscience and Nanotechnology*, 21 (06): 3466-3480 doi:10.1166/jnn.2021.19014 (**Impact Factor- 1.354**)
23. Priyanka M, **Kumar U**, Mehra P, Malik S, Dhaliwal HS, Kumar S (2018) Identification, molecular modeling and expression of *Iron Deficiency Clones3* (Ids3) like gene in hexaploid wheat. *3 Biotech*, doi: 10.1007/s13205-018-1230-2 (**Impact Factor- 3.206**)
24. A Kumar, S Kumar, **U Kumar**, P Suravajhala, MNVP Gajula (2016) Functional and structural insights into novel DREB1A transcription factors in common wheat (*Triticum aestivum* L.): A molecular modeling approach. *Computational Biology & Chemistry* 64, 217-226. (**Impact Factor- 4.770**)
25. I Sheikh, P Sharma, SK Verma, S Kumar, S Malik, P Mathpal, **U Kumar**, S Kumar and HS Dhaliwal (2016) Characterization of interspecific hybrids of *Triticum aestivum* x *Aegilops* sp. without 5B chromosome for induced homoeologous pairing. *Journal of Plant Biochemistry and Biotechnology* 25 (1), 117-120. (**Impact Factor- 1.994**)
26. Singh I, **Kumar U**, Singh SK, Gupta C, Singh M, Kushwaha SR (2012) Physiological and biochemical effects of 24- Epibrassinolide on cold tolerance in maize seedlings. *Physiology and Molecular Biology of Plants*. 18(3)- 229-236. (**Impact Factor- 3.023**)
27. **Kumar U**, Priyanka M, Malik S, Kumar N, Kumar S, Chugh V, Imran, Sharma P, Singh TV, Dhaliwal HS, Kumar S (2014) Evaluation and utilization of germplasm of wheat and related species for biofortification of iron and zinc in grain and grain fractions. *Plant Genetic Resources characterization & Utilization* 14 (2), 101-111 (**Impact Factor- 2.688**)
28. Anuj Kumar, Rohit Kumar, Mansi Sharma, **Upendra Kumar**, MNV Prasad Gajula, Krishna Pal Singh (2018) Uttarakhand Medicinal Plant Database (UMPDB): A Platform for Exploring Genomic, Chemical and Traditional Knowledge. *Data* 2018, 3(1), 7; doi.org/10.3390/data3010007 (**Impact Factor- 2.688**)
29. P Balyan, **U Kumar**, A Kumar, A Nehra, P Maan, A Kumar (2017) Biotechnological Approaches for Enhanced Secondary Metabolite Production using Hairy Root Cultures. *Biotech Today: An International Journal of Biological Sciences* 7 (2), 82-107
30. R. K. Chikara V. Malik, **Upendra Kumar** (2015) Identification of RAPD based genetic variability in *Rhizoctonia solani* isolates from Northern India. *International Journal of Recent Biotechnology* 3 (2), 25-30
31. Priyanka, **Upendra Kumar**, K.P. Singh (2015) Indirect, Direct and Secondary Somatic Embryogenesis in *Emblica officinalis*. *Global Journal For Research Analysis* 4 (4), 1-3
32. Priyanka, **Upendra Kumar**, Mohammad Ishaq Rather (2014) *In vitro* Salt Stress-Induced Enhancement of Ascorbic Acid in *Emblica officinalis*. *Annals of Plant Sciences* 3 (1), 588-593.
33. Kanchan Karki. K.P. Singh, **Upendra Kumar** (2014) Cancer Scenario with Future Perspectives in Uttarakhand Region of India. *Global Journal For Research Analysis* 3 (12), 1-3
34. **Kumar U**, Singh I, Priyanka, Vimala Y (2012) *In vitro* somatic embryogenesis in *Cassia fistula* L. *International Journal of Applied Sciences and Humanities* 2:6-8
35. **Kumar U**, Singh I, Priyanka, Vimala Y (2011) *In vitro* production of L-Dopa in tissue cultures of *Mucuna pruriens*. *Vegetos*. 24 (01) 119-123. (**NAAS Rating- 6.0**)

36. **Kumar U**, Singh I, Priyanka Vimala Y (2010) *In vitro* salt stress-induced production of gymnemic acid in callus cultures of *Gymnema sylvestre* (R.Br). *African Journal of Biotechnology*. 09(31) 4904-4909. (**Impact Factor- 0.98**)
37. **Kumar U**, Singh I, Vimala Y (2009) In vitro regeneration of *Moringa oleifera*. *Journal of Indian Botanical Society*. 88 (3&4) 120-123. (**NAAS Rating- 3.51**)
38. Singh I, **Kumar U**, Vimala Y (2009) *In vitro* shoot multiplication and rhizome development from embryo of non-germinating seeds of *Costus speciosus*. *Progressive Research: An International Journal*. 04 (2) 178-180. (**NAAS Rating- 4.8**)
39. Govil CM, **Kumar U** (2010) Floral vasculature and morphology of *Ochna serrulata* (hochst.) Walp. *Journal of Indian Botanical Society*. 89 (1&2) 24-29. (**NAAS Rating- 3.51**)

(c) Seminars/Conferences/Workshops Organized

1. As course Director organized an International Workshop Cum-Hands-On-Training on “**Genome Editing Approaches for Crop Improvement**” from May 23 To June 06 2022, Sponsored by SPARC, Ministry of Education Govt. of India & Organized by the Department of Molecular Biology, Biotechnology & Bioinformatics, CCS HAU, Hisar
2. As course coordinator organized an ICAR Winter School on “**Biofortification of Staple Food crops Through Conventional & Molecular Approaches**” from January 03-23, 2022, Sponsored by ICAR, New Delhi & Organized by the Department of Molecular Biology, Biotechnology & Bioinformatics, CCS HAU, Hisar
3. As course coordinator organized a Workshop cum Hands-on Training on “**Recent Trends in Bioinformatics & Its application in Modern Biotechnology**” (February 17-19, 2015) Sponsored & Organized by Uttarakhand Council for Biotechnology, Haldi, Uttarakhand.
4. As course coordinator organized a Workshop cum Hands-on Training on “**Role of Plant Tissue Culture in Crop Improvement**” (May 18-19, 2015) Sponsored & Organized by Uttarakhand Council for Biotechnology, Haldi, Uttarakhand.
5. As course coordinator organized a Workshop cum Hands-on Training on “ **Recent Trends in Bioinformatics & Its application in Modern Biotechnology**” (June 09-11, 2015) Sponsored & Organized by Uttarakhand Council for Biotechnology, Haldi, Uttarakhand
6. Seminar-cum-Workshop on “**Bioresource conservation & utilization**” (March 27-29, 2009) sponsored by CPE (UGC) and organized by Chaudhary Charan Singh University, Meerut. (U.P)
7. Workshop on “**Techniques for *in vitro* Pharming, isolation and characterization of secondary metabolites for the sustenance of medicinal plants**” (March07-12,2011) sponsored by DBT and organised by the Department of Botany, C.C.S. University, Meerut
8. National Workshop on “**Tissue Culture Techniques**” (Jan. 12, 2008) sponsored by CPE (UGC)and organized by the Department of Botany, R.G. (P.G.) College, Meerut, U.P.
9. Participated in Theoretical and practical course on “**Insecticidal proteins: Application and Regulatory issues**” (Nov. 12-23, 2007). Organized by International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi, India.
10. Participated in workshop on Theoretical and practical course on “**Transgene Expression in Plants**” (Nov.03-14, 2008). Organized by International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi, India.

11. Participated in a training programme on “**Capacity Building in Plant Taxonomy**” (Sep.27- Oct. 8, 2010. Organized by Botany Division, Forest Research Institute, Dehradun. Sponsored by the Department of Science and Technology, Government of India, New Delhi.
12. Participated in Workshop on “**Recombinant DNA Technology**” (June. 03-12, 2005) organized by ‘Central Facility for Biotechnology Teaching and Research’, Daniel Model School Campus, Palkalie Nagar East, Madurai-625021, Tamil Nadu.
13. Participated in Workshop on “**Scientific Paper Writing**” organised by ‘The National Academy of Science India (NASI). From October 22-24, 2011 at Allahabad.

Projects (With Title, Year, Grants, Funding Agency and Collaborations)

S.No	Title of the project	Funding Agency	Total cost (In Lakhs)	Status
1.	<i>In vitro</i> multiplication and cultivation of Kiwifruit (<i>Actinidia deliciosa</i>) cv. Haward in selected areas of Uttarakhand.	Biotechnology Department Govt. of Uttarakhand	29.10	Completed
2.	Establishment of facility for Genetic Fidelity and Virus testing of micro-propagated horticultural crops	ICAR-RKVY (RAFTAR),	213.00	Completed
3.	Setting up of plant tissue culture unit at CCS HAU Campus, Hisar	ICAR-MIDH	250.00	Completed
4.	Application of CRISPR/ Cas9 genome editing techniques for development of low silicone rice suitable for paddy straw management	SPARC -Ministry of Education, Govt. India (Indo-US Collaboration)	96.55	Completed
5.	Rehabilitation of existing Tissue Culture Facility	ICAR-MIDH	20.00	Completed

Administrative Positions/Assignments Held

Member of Board of Studies (Botany) CCS University, Meerut

Academic Foreign Visits

⇒ Kihara Institute of Biological Research, Yokohama University, Yokohama, JAPAN (September 2013 to September 2014)

⇒ University Utrecht, Amsterdam, Netherlands from October 23-25, 2019

⇒ University of Massachusetts, Amherst, United States of America (USA) (June-December, 2022)