

## Dr Hitesh Kumar

Associate Professor

Department of Genetics and Plant Breeding, College of Agriculture,  
Sardar Vallabhbhai Patel University of Agriculture & Technology,  
Meerut-250110, U.P.

E-mail: [hiteshkmr25@gmail.com](mailto:hiteshkmr25@gmail.com)

Contact No. 09670507463



### Professional Summary

I enriched my research expertise as a research fellow in wheat and brassica crop at PAU Ludhiana, Punjab. During associateship, I was involved in development of mapping populations and introgression lines of economically important traits. As an Assistant Professor, I gained experience in undergraduate and postgraduate teaching. Being as founder faculty member of University, I have developed UG, PG laboratories, research facilities (Abiotic stress phenotyping facility) and Crop Research Centre at BUAT, Banda. I have contributed to wheat, mustard and chickpea breeding programme in creating breeding material, identifying donor parent and mapping population to enrich breeding programme.

### Educational Qualifications

- **Ph. D. in Plant Breeding and Genetics** (I<sup>st</sup> Division) 2010  
*Punjab Agricultural University, Ludhiana, Punjab, India*
- **M.Sc. in Genetics and Plant Breeding** (I<sup>st</sup> Division) 2006  
*Ch. Charan Singh University (Campus), Meerut, U.P., India*
- **B.Sc. in Agriculture** (I<sup>st</sup> Division) 2004  
*Ch. Charan Singh University, Meerut, U.P., India*
- Four and half Month training on Basic Wheat Improvement Course-2022, 4-01-2022 to 31-05-2022, **International Maize and Wheat Improvement Center (CIMMYT) Mexico.**
- **National Eligibility Test (NET)**  
*Crop Improvement (Plant Breeding), ASRB (ICAR)* - 2009  
*Crop Improvement (Plant Breeding), ASRB (ICAR)* - 2010  
*Crop Improvement (Plant Breeding), ASRB (ICAR)* - 2015

### Work Experience

- **Associate Professor**, Department of Genetics and Plant Breeding, Sardar Vallabhbhai Patel University of Agriculture & Technology, Meerut (**March 2025 to till date**)
- **Assistant Professor**, Department of Genetics and Plant Breeding, Banda University of Agriculture Technology, Banda, U.P. (**Oct 2013 to March 2025**)
- **Junior Wheat Breeder**, Syngenta India Ltd. Karnal Haryana (**Oct 2012 to Oct 2013**)
- **Research Fellow**, Oilseeds Section, Punjab Agricultural University, Ludhiana, Punjab, India (**July 2011 to Oct 2012**)
- **Research Fellow**, Wheat Section, Punjab Agricultural University, Ludhiana, Punjab, India (**March 2010 to July 2011**)

### Area of Specialization

Handling of crop breeding programme, Phenotyping of crop germplasm for abiotic stress (Heat, Drought and Salt), Development of crop breeding material for targeted to abiotic stress tolerance

### Teaching and Mentoring of Students

- Taught various courses of Genetics and Plant Breeding in Undergraduate (12 Years), Postgraduate (7 Years), Ph.D. (5 Years) degree programmes
- Guided/Mentored students at various academic levels, including 60 Undergraduate, 6 Postgraduate, and 2 Ph.D.

### Major Achievements

- **Development of Breeding Pipelines in Chickpea and Pigeonpea:** Created breeding material in chickpea and pigeonpea for targeted traits. From both crop 15 elite lines contributed in AICRP and state multi-location evaluation system at RATDS centres.

- **Lab and research facility establishment:**
  - i. Established Genetics and Cytogenetics Laboratory at BUAT, Banda
  - ii. Developed Crop Research Centre (CRC) at BUAT, Banda
  - iii. Established Plant Biotechnology Laboratory at BUAT, Banda
  - iv. Established Abiotic Stress Breeding Laboratory at BUAT, Banda
  - v. Established Phenotyping field facility for Abiotic Stress at BUAT, Banda
- **Research Collaborations:** Established Collaboration with ICRISAT, ICARDA, IIPR and SAU

#### Externally Funded Research Projects

- Establishment of laboratory to Identify Abiotic Stress Tolerant Plant Genotypes Suitable for Cultivation in Bundelkhand Region, funded by RKVY Scheme. **(Rs. 76.50 lakhs, 2020 to 2022, PI)**
- Genetic enhancement for terminal heat tolerance in bread wheat (*Triticum aestivum* L.) with conventional and molecular breeding approaches (Network Project, ANDUAT, Ayodhya) funded by UPCAR Lucknow. **(Rs. 31.50 lakhs, 2020 to 2023, PI)**
- Establishment of Center of Excellence on Dry-land Agriculture with focus on Pulses and Oilseed Crops funded by Ministry of Agri Govt. of Uttar Pradesh. **(Rs. 500.60 lakhs, 2018 to 2023, Co-PI)**
- Evaluation of Quantis (product of natural origin) for use in Wheat for supporting plant growth & Yield Enhancement funded by Syngenta India Ltd. **(Rs. 2.00 lakhs., 2020, Co-PI)**
- Enhancing pigeonpea production and productivity in India by promoting high-yielding early maturing varieties and hybrids (ICRISAT Network Project) funded by GoI, NFSM. **(Rs. 39.00 lakhs, 2023 to 2025, PI)**
- Identification and characterization of potential pigeonpea genotype for water logging tolerance using combinatorial omics approaches (Collaborative Project NIPB, New Delhi) funded by UPCAR Lucknow. **(24.95 lakhs, 2023 to 2025, PI)**
- Development of improved sesame (*Sesame indicum* L.) genotype for Bundelkhand region through classical and molecular approaches funded by UPCAR Lucknow. **(23.40 lakhs, 2022 to 2025, Co-PI)**
- Strengthening of Seed Processing and Storage Infrastructure funded by RKVY Scheme. **(Rs.367.50 lakhs, 2024-25, Co-PI)**

#### All India Coordinated Research Project (AICRP)

- All India Coordinated Research Project (AICRP) on Pigeonpea, Chickpea, Rapeseed and Mustard (Yearly Contingency, PI)

#### Professional Award/Recognition

- Excellence in Teaching 2023, Young Category (2024, BUAT Banda, U.P)
- Excellence in Research 2022, Young Category (2023, BUAT Banda, U.P)
- CEDA Project Team Award 2022 (2023, BUAT Banda, U.P.)
- Young Scientist Award (2021, SSDAT, Meerut, India)
- Best Oral Presentation Award (2020, UPAAS-UPCAR Lucknow U.P.)
- Best Teacher Award (2017, AETDS, US Nagar U.K, India)
- Young Scientist Award, Gov. of Uttar Pradesh 2024-25

#### List of Publications

##### Summary Of Publications

i.	Research Paper with Impact Factor	<b>-60</b>
ii.	Review Article	<b>-04</b>
iii.	Book	<b>-02</b>
iv.	Book Chapter	<b>-11</b>
v.	Practical Manual	<b>-05</b>
vi.	Technical Bulletin	<b>-02</b>
vii.	Popular Article	<b>-13</b>
viii.	University Publication	<b>-03</b>

#### Ten Best Research Paper

1. **Kumar H\***, Chugh V, Kumar M, Gupta V, Prasad S, Kumar S, Singh CM, Kumar R, Singh BK, Panwar G and Kumar M (2023) Investigating the impact of terminal heat stress on contrasting wheat cultivars: a

- comprehensive analysis of phenological, physiological, and biochemical traits. **Front. Plant Sci.** 14:1189005. <https://doi.org/10.3389/fpls.2023.1189005>
2. Kumar S, **Kumar H\***, Gupta V, Kumar A, Singh CM, Kumar M, Singh AK, Panwar GS, Kumar S, Singh AK and Kumar R (2023) Capturing agro-morphological variability for tolerance to terminal heat and combined heat–drought stress in landraces and elite cultivar collection of wheat. **Front. Plant Sci.** 14:1136455. <https://doi.org/10.3389/fpls.2023.1136455>
  3. Singh CM, Kumar M, Pratap A, Tripathi A, Singh S, Mishra A, **Kumar H**, Nair RM and Singh NP (2022) Genome-Wide Analysis of Late Embryogenesis Abundant Protein Gene Family in Vigna Species and Expression of VrLEA Encoding Genes in Vigna glabrescens Reveal Its Role in Heat Tolerance. **Front. Plant Sci.** 13:843107. <https://doi.org/10.3389/fpls.2022.843107>
  4. Parihar AK, Gupta S, Hazra KK, Lamichaney A, Sen Gupta D, Singh D, Kumar R, Singh AK, Vaishnavi R, Jaberson MS, Das SP, Dev J, Yadav RK, Jamwal BS, Choudhary BR, Khedar OP, Prakash V, Dikshit HK, Panwar RK, Katiyar M, Kumar P, Mahto CS, Borah HK, Singh MN, Das A, Patil AN, Nanda HC, Kumar V, Rajput SD, Chauhan DA, Patel MH, Kanwar RR, Kumar J, Mishra SP, **Kumar H**, Swarup I, Mogali S, Kumaresan D, Manivannan N, Gowda MB, Pandiyan M, Rao PJ, Shivani D, Prusti AM, Mahadevu P, Iyanar K and Das S (2022) Multi-location evaluation of mungbean (*Vigna radiata* L.) in Indian climates: Ecophenological dynamics, yield relation, and characterization of locations. **Front. Plant Sci.** 13:984912. <https://doi.org/10.3389/fpls.2022.984912>
  5. Gupta M, Gupta S, **Kumar H**, Kumar, N and Banga SS (2014) Population structure and breeding value of a new type of Brassica juncea created by combining A and B genomes from related allotetraploids. **Theor. Appl. Genet.**, 128(2), 221–234. <https://doi.org/10.1007/s00122-014-2423-7>.
  6. Chugh V, Mishra V, Sharma V, Kumar M, Ghorbel M, **Kumar H**, Rai A, Kumar R (2024) Deciphering Physio-Biochemical Basis of Tolerance Mechanism for Sesame (*Sesamum indicum* L.) Genotypes under Waterlogging Stress at Early Vegetative Stage. **Plants** 13, 501. <https://doi.org/10.3390/plants13040501>
  7. Singh CM, Purwar S, Singh AK, Singh BK, Kumar M, **Kumar H**, Pratap A, Mishra AK and Baek KH (2023) Analysis of Auxin- Encoding Gene Family in Vigna radiata and It's Cross-Species Expression Modulating Waterlogging Tolerance in Wild Vigna umbellata. **Plants** 12, 3858 <https://doi.org/10.3390/plants12223858>
  8. Singh AK, Singh R, Kumar R, Gupta AK, **Kumar H**, Rai A, Kanawjia A, Tomar KS, Pandey G, Singh B, et al. (2023) Evaluating Sustainable and Environment Friendly Growing Media Composition for Pot Mum (*Chrysanthemum morifolium* Ramat.). **Sustainability** 15, 536. <https://doi.org/10.3390/su15010536> (IF3.9, NAAS rating 9.90)
  9. Atri C, Kumar B, **Kumar H**, Kumar S, Sharma S, and Banga SS (2012) Development and characterization of Brassica juncea – fruticulosa introgression lines exhibiting resistance to mustard aphid (*Lipaphis erysimi* Kalt). **BMC Genetics** 13(1). <https://doi.org/10.1186/1471-2156-13-104>. (IF3.76, NAAS rating 9.76)
  10. Gupta S, Sangha MK, Kaur G, Banga S, Gupta M, **Kumar H**, and Banga, SS (2014) QTL analysis for phytonutrient compounds and the antioxidant molecule in mustard (*Brassica juncea* L.). **Euphytica** 201(3), 345–356. <https://doi.org/10.1007/s10681-014-1204-3>.

#### Five Best Chapters in Book:

1. **Kumar H**, Akhtar J., Wani S.H. (2020) Recent Advances in Cytoplasmic Male Sterility (CMS) in Crop Brassicas. In: Wani S., Thakur A., Jeshima Khan Y. (eds) Brassica Improvement Molecular, Genetics and Genomic Perspectives. Springer, Cham, [doi.org/10.1007/978-3-030-34694-2\\_2](https://doi.org/10.1007/978-3-030-34694-2_2)
2. Akhtar, J., Kaur, H., Kumar, H. (2022). Conventional Plant Breeding to Modern Biotechnological Approaches in Crop Improvement. In: Kamaluddin, Kiran, U., Abidin, M.Z. (eds) Technologies in Plant Biotechnology and Breeding of Field Crops. Springer, Singapore. [https://doi.org/10.1007/978-981-16-5767-2\\_1](https://doi.org/10.1007/978-981-16-5767-2_1)

3. Kamaluddin, Preeti Sonkar, Vijay Sharma, **HiteshKumar**, MukulKumar, H. S. Negi, Usha Kiran, M. Z. Abdin & A. K. Choubey (2022). Marker-Assisted Selection for Value Addition in Crop Plants. In: Kamaluddin, Kiran, U., Abdin, M.Z. (eds) Technologies in Plant Biotechnology and Breeding of Field Crops. Springer, Singapore. [https://doi.org/10.1007/978-981-16-5767-2\\_2](https://doi.org/10.1007/978-981-16-5767-2_2)
4. Chandra Mohan Singh, Aditya Pratap, **Hitesh Kumar**, Smita Singh, Bhupendra Kumar Singh, DurgaPrasad, Indrapreet Dhaliwal & Mukul Kumar (2022). Recent Advances in Omics Approaches for Mungbean Improvement. In: Kamaluddin, Kiran, U., Abdin, M.Z. (eds) Technologies in Plant Biotechnology and Breeding of Field Crops. Springer, Singapore. [https://doi.org/10.1007/978-981-16-5767-2\\_9](https://doi.org/10.1007/978-981-16-5767-2_9)
5. Akhatar, J., **Kumar, H.**, Kaur, H. (2022). Recent Progress in Brassica Hybrid Breeding. In: Bohra, A., Parihar, A.K., Naik SJ, S., Chandra, A. (eds) Plant Male Sterility Systems for Accelerating Crop Improvement. Springer, Singapore. [https://doi.org/10.1007/978-981-19-3808-5\\_9](https://doi.org/10.1007/978-981-19-3808-5_9)

(**Hitesh Kumar**)