

## Personal Profile

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Assistant Professor  
Department of Genetics and Plant Breeding  
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## Educational Profile

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<b>Ph.D. (Ag)</b>	Genetics and Plant Breeding	Banaras Hindu University, Varanasi (U.P.)
<b>M.Sc. (Ag)</b>	Genetics and Plant Breeding	Ch. Charan Singh University, Meerut (U.P.)
<b>BSc (Ag)</b>	Agriculture	Ch. Charan Singh University, Meerut (U.P.)

## Professional Experience

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<b>Assistant Professor</b> Department of Genetics and Plant Breeding Rajiv Gandhi University, Rono Hills, Arunachal Pradesh	<b>May 2023-Till Date</b>
<b>Assistant Professor</b> Department of Genetics and Plant Breeding Eternal University, Baru Sahib, Himachal Pradesh	<b>Oct 2018-May 2023</b>
<b>National Post-Doctoral Fellow (NPDF)</b> Department of Genetics and Plant Breeding Ch. Charan Singh University, Meerut, Uttar Pradesh	<b>Sep 2016-Sept 2018</b>
<b>Dr. D. S. Kothari Post-Doctoral Fellow (DSK-PDF)</b> Department of Genetics and Plant Breeding Ch. Charan Singh University, Meerut, Uttar Pradesh	<b>Feb 2015-Sept 2016</b>
<b>Teaching Assistant</b> Department of Genetics and Plant Breeding Ch. Charan Singh University, Meerut, Uttar Pradesh	<b>Sep 2014-Feb 2015</b>
<b>Senior Research Fellow</b> Department of Genetics and Plant Breeding Banaras Hindu University, Varanasi, Uttar Pradesh	<b>Aug 2010-Aug 2014</b>

## Awards and Honors

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- UGC Research Fellowship, 2009
- DBT Senior Research Fellowship, 2010
- ICAR Senior Research Fellowship, 2010

- NET, 2011
- Dr. D.S. Kothari Post-Doctoral Fellowship, 2015
- SERB-DST National Post-Doctoral Fellowship, 2016

## Membership of Professional Bodies

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- Lifetime membership in the Indian society of plant genetic resources, New Delhi
- Lifetime membership in the society of Genetics and Plant Breeding, New Delhi
- Life time membership in the society of Indian science congress Association, Kolkata

## Research Interest

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Development of high-yielding crop varieties resistant to biotic and abiotic stresses using following approaches:

- Conventional Breeding
- Marker-Assisted Selection (MAS)
- Genome-Wide Association Studies (GWAS)
- Genomic Selection
- Epigenetics
- RNA seq

## Research Publications

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- Kaur R, **Vasistha NK\***, Ravat VK, Mishra VK, Sharma S, Joshi AK, Dhariwal R. Genome-Wide Association Study Reveals Novel Powdery Mildew Resistance Loci in Bread Wheat, *Plants*, 2023; 12(22):3864. [IF: 4.5; NAAS: 10.5]
- Kaur H, Sharma P, Kumar J, Singh VK, **Vasistha NK**, Gahlaut V, Tyagi V, Verma SK, Singh S, Dhaliwal HS, Sheikh I. Genetic analysis of iron, zinc and grain yield in wheat-*Aegilops* derivatives using multi-locus GWAS, *Molecular Biology Reports*, 2023; 50, 9191–9202. [IF: 2.8; NAAS: 8.8]
- Gupta PK, **Vasistha NK**, Singh S, Joshi AK. Genetics and breeding for resistance against four leaf spot diseases in wheat (*Triticum aestivum* L.). *Frontiers in Plant Science*, 2023 14:892. [IF: 6.6; NAAS: 12.6]
- Singh S, Gaurav SS, **Vasistha NK** et al. A study of the genetics of spot blotch resistance in bread wheat (*Triticum aestivum* L.) using five different models for GWAS: *Frontiers in Plant Science*, 2023 13:1036064 [IF: 6.6; NAAS: 12.6]
- Kaur, H, **Vasistha NK**, Sheikh I et al. Multilocus genome-wide association analysis in wheat-*Aegilops* derivatives for powdery mildew resistance: (Under Review) *Canadian Journal of Plant Pathology*, 2023 TCJP-2022-0088 [IF: 2.4; NAAS: 8.4]
- Negi C, Vasistha NK, Singh D, Vyas P, Dhaliwal HS. Application of CRISPR-mediated gene editing for crop improvement. *Molecular Biotechnology*, 2022, 64(11), 1198-1217 [IF: 3.2; NAAS: 9.2]
- Gupta PK, **Vasistha NK** et al. Pyramiding of genes for grain protein content, grain quality and rust resistance in eleven Indian bread wheat cultivars: A multi-institutional effort. *Molecular Breeding*, 2022, <https://doi.org/10.1007/s11032-022-01277-w> [IF: 2.5; NAAS: 8.5]
- Gupta PK, **Vasistha NK**, Singh PK. Sensitivity genes in wheat and corresponding effector genes in necrotrophs exhibiting inverse gene-for-gene relationship: *Research Square*, 2021, DOI:

<https://doi.org/10.21203/rs.3.rs-223024/v1>

- **Vasistha NK**, Arun B, Mishra VK, Chand R, Jayasudha S, Joshi AK. Molecular introgression of leaf rust resistance gene Lr34 validates enhanced effect on spot blotch. *Euphytica* 2017, 213, 262 [IF: 2.1; NAAS: 8.1]
- **Vasistha NK**, B. Arun, V. K. Mishra, R. Chand, S. Jayasudha, P.S. Yadav and A. K. Joshi. Enhancing spot blotch resistance in wheat by marker-aided backcross breeding. *Euphytica*, 2023, 207(1), 119-133 [IF: 2.1; NAAS: 8.1]
- Sudhir Navathe, P. S. Yadav, R. Chand, V. K. Mishra, **Vasistha NK**, Gupta PK and Joshi AK. A study of ToxA-Tsn1 patho-system for spot blotch susceptibility in Indian wheats: An example of inverse gene-for-gene relationship. *Plant Disease*, 2020, 104(1), 71-81 [IF: 4.5; NAAS: 10.5]
- P. K. Gupta, R. Chand, **N.K. Vasistha**, S. P. Pandey, U. Kumar, V. K. Mishra, A.K. Joshi. Spot Blotch disease of Wheat: the current status of research, breeding and disease management. *Plant Pathology*, 2018, doi:10.1111/ppa.12781 [IF: 2.43; NAAS: 8.43]
- P. K. Gupta, **N.K. Vasistha**, Aggarwal R, Joshi AK. Biology of *B. sorokiniana* (syn. *Cochliobolus sativus*) in genomics era. *International Journal of Plant Biochemistry and Biotechnology*, 2018, doi:org/10.1007/s13562-017-0426-6 [IF: 1.5; NAAS: 7.5]
- Gupta PK, **Vasistha NK**. Wheat cytogenetics and cytogenomics: the present status. *The Nucleus*, 2018, 61,195-2120976-7975 [IF: 2.0; NAAS: 8.0]
- Mishra VK, Gupta PK, Arun B, Chand R, **Vasistha NK**, Vishwakarma MK, Yadav PS, Joshi AK. Introgression of a gene for high grain protein content (Gpc-B1) into two leading cultivars of wheat in Eastern Gangetic Plains of India through marker assisted backcross breeding. *Journal of Plant Breeding and Crop Science*, 2015, 7(8), 292-300.
- Yadav PS, Mishra VK, Arun B, Chand R, Vishwakarma MK, **Vasistha NK**, Mishra AN, Kalappanavar IK, Joshi AK. Enhanced resistance in wheat against stem rust achieved by marker assisted backcrossing involving three independent Sr genes. *Current Plant Biology*, 2015, (2) 25–33 1651 [IF: 5.5; NAAS: 11.5]
- Jayasudha S, Arun B, Mishra VK, Singh G, Velu G, Babu R, **Vasistha NK**, Joshi AK. Zinc and iron concentration QTL mapped in a *Triticum spelta* x *T. aestivum* cross. *Theoretical and Applied Genetics*, 2014, 127(7), 1643-1651 [IF: 5.5; NAAS: 11.5]
- **Vasistha NK**, Arun B, Mishra VK, Saxesena RR, Pandey AK, Ahirwar RN, Kumar R, Singh MK, Sharma PK. Identification and validation of leaf rust resistance Genes in spring wheat (*Triticum aestivum* L. Em. Thell) genotypes using molecular markers. *The Bioscan*, 2014, 9(4), 1695-1700 [NAAS: 5.26]
- Kumar R, Srivastava K, Singh NP, **Vasistha NK**, Singh RK, Singh MK. Combining Ability Analysis for Yield and Quality Traits in Tomato (*Solanum lycopersicum* L.). *Journal of Agricultural Science*, 2013, 5(2), 213-218 [NAAS: 5.10]
- Kumar R, Gupta RK, **Vasistha NK**, Singh MK. Character Association and Path Analysis for Quantitative Traits in Bread Wheat (*Triticum aestivum* L.). *Environment and Ecology*, 2013 31(1A), 393-398 [NAAS: 4.18]
- Kumar J, Chauhan R, **Vasistha NK**, Sharma, PK. Identification of heat stress tolerance genotypes of wheat (*Triticum aestivum* L. em Thell). *Frontiers in Crop Improvement*, 2017, 52:106–1092454-6011 [NAAS: 3.62]
- Kumar KPS, Tomar V, Rathi, Kumar A, **Vasistha NK**. Combining ability analysis for seed yield and its contributing traits in linseed (*Linum usitatissimum* L.): *The Bioscan*, 2018, 13, 207–214093-

70495 [NAAS: 5.6]

## Book Chapters

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- Molecular Approach for Crop Improvement. In: Classical and Molecular Approaches in Plant Breeding: **N. K. Vasistha** et al. **2020**, Narendra Publishing House, Delhi (INDIA)
- Mutagenesis in Crop Improvement. In: Classical and Molecular Approaches in Plant Breeding: Kumar H and **Vasistha NK** et al. **2020**, Narendra Publishing House, Delhi (INDIA)
- Engineering Fructan Biosynthesis Against Abiotic Stress. In: Compatible Solutes Engineering for Crop Plants Facing Climate Change: Choudhir, Gourav, and **Neeraj K. Vasistha**. **2022**, Springer, Cham, 2021. 145-170.

## Key Skills

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- Teaching various subjects of B.Sc., M.Sc., and Ph.D. courses;
- Supervising M.Sc. and Ph.D. students

## Sponsored Projects

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S. No.	Title of Project	Funding Agency	Year of sanction	Role
1.	A Study of the Complex Genetic System for Developing a Package of R/S genes to Breed for Spot Blotch Resistance in Bread Wheat	DBT, New Delhi	2023	PI
2.	Development and validation of high resolution KASP assay for powdery mildew resistant genes in wheat	SERB, New Delhi	2020	PI
3.	A study of the mechanism involved in spot blotch disease resistance in wheat using epigenetics approaches	SERB, New Delhi	2016	PI
4.	Pyramiding multiple disease resistance genes /QTLs along with quality genes in spring wheat ( <i>Triticum aestivum</i> L. Thell)	UGC, New Delhi	2015	PI
5.	Germplasm Characterization and trait discovery in wheat.	DBT, New Delhi	2021	CO_PI

## More details

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- **ORCID-** <https://orcid.org/0000-0001-5527-340X>
- **Research gate-** <https://www.researchgate.net/profile/Neeraj-Vasistha>
- **SCOPUS-** <https://www.scopus.com/authid/detail.uri?authorId=56183462700>
- **Web of Science-** <https://www.webofscience.com/wos/author/record/2390412>
- **Google Scholar-** <https://scholar.google.co.in/citations?hl=en&user=Tlya--wAAAAJ>