

Brief Bio-data



Name	:	Dr. AJAY KUMAR THAKUR
Designation	:	Principal Scientist (Agri. Biotechnology)
Division	:	Division of Crop Improvement & Seed Technology
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✓ **Education:**

S.No.	Institution/ University	Degree Awarded	Year	Discipline/ Subject
1	Dr. Y.S. Parmar University of Horticulture & Forestry, Solan, HP	B.Sc. (Forestry)	2000	Forestry
2	Dr. Y.S. Parmar University of Horticulture & Forestry, Solan, HP	M.Sc. (Biotechnology)	2003	Biotechnology
3	Dr. Y.S. Parmar University of Horticulture & Forestry, Solan, HP	Ph.D. (Biotechnology)	2008	Biotechnology

✓ **Position and Employment:**

S. No.	Institution Place	Position/ Designation	Department/ Division	From (date)	To (date)
1	ICAR-Central Potato Research Institute, Shimla, HP	Principal Scientist	Division of Crop Improvement & Seed Technology	07/01/2023	Till date
2	ICAR-Central Potato Research Institute, Shimla, HP	Senior Scientist	Division of Crop Improvement & Seed Technology	01/10/2021	06/01/2023
3	ICAR-Directorate of Rapeseed-Mustard Research, Bharatpur, Rajasthan	Senior Scientist	Biotechnology Section	07/01/2020	30/09/2021

4	ICAR-Directorate of Rapeseed-Mustard Research, Bharatpur, Rajasthan	Senior Scientist	Biotechnology Section	07/01/2017	06/01/2020
5	ICAR-Directorate of Rapeseed-Mustard Research, Bharatpur, Rajasthan	Scientist (Sen. Scale)	Biotechnology Section	07/01/2012	06/01/2017
6	ICAR-National Research Centre on Rapeseed-Mustard Research, Bharatpur, Rajasthan	Scientist	Biotechnology Section	16/05/2008	06/01/2012
7	ICAR-National Academy of Agricultural Research & Management (NAARM), Hyderabad	Scientist Probationer	82 nd FOCARS	07/01/2008	05/05/2008

✓ **Major Area of Research:**

➤ Genome editing in potato for late blight and bacterial wilt resistance
➤ Genomics and transcriptomics for Nitrogen Use Efficiency and biotic stress resistance traits in potato
➤ Germplasm characterization of potato using molecular markers

✓ **Awards and other recognitions:**

- i) **Selected Member, National Academy of Sciences India (NASI)**, Prayagraj, UP in July, 2020
- ii) **Elected Member, Plant Tissue Culture Association of India (PTCAI)** (Feb 15, 2019)
- iii) Awarded **“Start-up Research Grant (Young Scientists)” under ‘Young Scientist Scheme’** from **DST-Science and Engineering Research Board**, New Delhi (October, 2014)
- iv) **“Fellow”** of Society for Applied Biotechnology, Karnatak University, Dharwad, Karnataka (2012)
- v) **“Fellow”**, Society for Plant Research, Meerut (2023)
- vi) **“Fellow”**, SSDAT, Meerut (2023)
- vii) **‘Best Scientist Award’** for the year 2016, by ICAR-Directorate of Rapeseed-Mustard Research, Bharatpur, Rajasthan.
- viii) **‘Certificate of Appreciation’** from **Indian Society for Oilseeds Research, Hyderabad** on February 21, 2015.
- ix) **‘Young Scientist Award’** from **Indian society of Genetics, Biotechnology Research & Development, Agra** on April 23, 2017.
- x) **‘Young Scientist Award’** from **Samagra Vikas Welfare Society (SVWS), Lucknow** on October 16, 2017.

- xi) ‘Award of Appreciation’ from **Indian Society of Agricultural Statistics, New Delhi** on November 27, 2017.
- xii) “Best Oral Presentation Award” from **Indian Society of Agricultural Statistics, New Delhi** on November 27, 2017.
- xiii) ‘Best poster Award’ from **National Society of Plant Science, Hisar** on January 29, 2006.
- ✓ **Varieties/products developed:**
Associated in the developed of 02 Indian mustard varieties – **Giriraj & Brajraj**; 01 Brown sarson variety – **Him Palam Gobhi Sarson -1** & 07 Genetic stocks of Indian mustard (registered at NBPGR, New Delhi)
- ✓ **Books Authored/Edited:** 05 (01 Authored & 04 Edited)
- ✓ **Patents & Copyrights:** 01 Patent, 01 Copyright
- ✓ **List of best twenty research papers:**
- 1) Zinta R, Tiwari JK, Buckseth T, Goutam U, Singh RK, Kumar V, **Thakur AK**. 2024. Transcriptome profiling and characterization of genes associated with tuberization under high temperature in aeroponics in potato cv. Kufri Anand. *Genes & Genomics*. <https://doi.org/10.1007/s13258-024-01503-z>
 - 2) Verma S, Dubey N, Singh KH, Parmar N, Singh L, Sharma D, Rana D, Thakur K, Vaidya D, **Thakur AK***. 2023. Utilization of crop wild relatives for biotic and abiotic stress management in Indian mustard [*Brassica juncea* (L.) Czern. & Coss.]. *Front Plant Sci*. 14: 1277922. <https://doi.org/10.3389/fpls.2023.1277922>
 - 3) Bhatia N, Tiwari JK, Kumari C, Zinta R, Sharma S, **Thakur AK**, Buckseth T, Dalamu D, Singh RK, Kumar V. 2023. Screening of wild species and transcriptome profiling to identify differentially regulated genes in response to late blight resistance in potato. *Front Plant Sci*. 14:1212135. <https://doi.org/10.3389/fpls.2023.1212135>
 - 4) Mangal V, Sood S, Bhardwaj V, Kumar V, Kumar A, Singh B, Dipta B, Dalamu, Sharma S, **Thakur AK**, Singh R, Sharma AK, Kumar D. 2023. Diagnostic PCR-based markers for biotic stress resistance breeding in potatoes (*Solanum tuberosum* L.). *Australasian Plant Pathology*. <https://doi.org/10.1007/s13313-023-00915-x>
 - 5) Siddappa S, Sharma N, Salaria N, Thakur K, Pathania S, Singh B, Sharma H, Sood S, Bhardwaj V, **Thakur AK**, Mangal V, Kumar V, Muruthachallam R, Singh K, Tuli R. 2023. CRISPR/Cas9-mediated editing of phytoene desaturase (*PDS*) gene in an important staple crop, potato. *3 Biotech*. 13: 129. <https://doi.org/10.1007/s13205-023-03543-w>
 - 6) Bhardwaj V, Kumar A, Sharma S, Singh B, Poonam, Sood S, Dipta B, Singh R, Mangal V, Siddappa S, **Thakur AK**, Dalamu D, Sharma AK, Kumar V, Lal M, Kumar D. 2023. Analysis of genetic diversity, population structure and association mapping for late blight resistance in potato (*Solanum tuberosum* L.) accessions using SSR markers. *Agronomy*. 13, 294. <https://doi.org/10.3390/agronomy13020294>

- 7) Dalamu, Tiwari JK, Bairwa A, Bhatia N, Zinta R, Kaushal N, Kumar V, Sharma AK, Sharma S, Choudhary B, Luthra SK, Buckseth T, Singh RK, **Thakur AK**, Kumar M, Kumar D. 2023. Resistance evaluation for native potato accessions against late blight disease and potato cyst nematodes by molecular markers and phenotypic screening in India. *Life*. 13: 33. <https://doi.org/10.3390/life13010033>
- 8) Singh L, Nanjundan J, Sharma D, Singh KH, Parmar N, Jain R, **Thakur AK***. 2022. Agromorphological traits and SSR markers reveal genetic variations in germplasm accessions of Indian mustard – An industrially important oilseed crop. *Heliyon*. 8: e12519. <https://doi.org/10.1016/j.heliyon.2022.e12519>
- 9) Zinta R, Tiwari JK, Buckseth T, Thakur K, Goutam U, Kumar D, Challam C, Bhatia N, Poonia AK, Naik S, Singh RK, **Thakur AK**, Dalamu D, Luthra SK, Kumar V and Kumar M. (2022). Root system architecture for abiotic stress tolerance in potato: Lessons from plants. *Front. Plant Sci*. 13:926214. doi: 10.3389/fpls.2022.926214
- 10) Singh KH, Singh L, Parmar N, Kumar S, Nanjundan J, Singh G, **Thakur AK***. 2022. Molecular characterization and genetic diversity analysis in Indian mustard (*Brassica juncea* L. Czern & Coss.) varieties using SSR markers. *PLoS ONE* 17(8): e0272914. <https://doi.org/10.1371/journal.pone.0272914>
- 11) Sharma D, Nanjundan J, Singh L, Parmar N, Singh KH, Verma KS, **Thakur AK***. 2022. Genetic diversity and population structure analysis in Indian Mustard germplasm using phenotypic traits and SSR markers. *Plant Mol Biol Rep*. <https://doi.org/10.1007/s11105-022-01339-5>
- 12) Singh L, Nanjundan J, Singh KH, Sharma D, Parmar N, Watts A, Jain R, **Thakur AK***. Development of a set of SSR markers for characterization of Indian mustard germplasm and varieties. 2022. *J. Plant Biochem & Biotechnol*. 31: 581-591. <https://doi.org/10.1007/s13562-021-00737-2>
- 13) **Thakur AK***, Parmar N, Singh KH, Nanjundan J. 2020. Current achievements and future prospects of genetic engineering in Indian mustard (*Brassica juncea* L. Czern & Coss.). *Planta*. 252: 56. <https://doi.org/10.1007/s00425-020-03461-8>
- 14) **Thakur AK**, Singh KH, Parmar N, Sharma D, Mishra DC, Singh L, Nanjundan J, Yadav S. 2020. Population structure and genetic diversity as revealed by SSR markers in Ethiopian mustard (*Brassica carinata* A. Braun): a potential edible and industrially important oilseed crop. *Genet Resour Crop Evol*. <https://doi.org/10.1007/s10722-020-00988-3>
- 15) Sharma D, Nanjundan J, Singh L, Singh SP, Parmar N, Sujith Kumar MS, Singh KH, Mishra AK, Singh R, Verma KS, **Thakur AK***. 2020. Genetic diversity in leafy mustard (*Brassica juncea* var. *rugosa*) as revealed by agro-morphological traits and SSR markers. *Physiol Mol Biol Plants*. 26(10): 2005-2018. <https://doi.org/10.1007/s12298-020-00883-2>
- 16) **Thakur AK**, Singh KH, Sharma D, Parmar N and Nanjundan J. 2019. Breeding and genomics interventions in Ethiopian mustard (*Brassica carinata* A. Braun) improvement – A mini review. *South African Journal of Botany*. 125: 457-464.
- 17) **Thakur AK***, Singh KH, Lal S, Nanjundan J, Yasin JK and Singh D. 2018. SSR marker variations in Brassica species provide insight into the origin and evolution of *Brassica* amphidiploids. *Hereditas*. 155: 6. DOI: 10.1186/s41065-017-0041-5

- 18) **Thakur AK***, Singh KH, Singh L, Nanjundan J, Khan YJ and Singh D. 2017. Patterns of subspecies genetic diversity among oilseed *Brassica rapa* as revealed by agro-morphological traits and SSR markers. *Journal of Plant Biochemistry & Biotechnology*. 26(3): 282-292.
- 19) Parmar N, Singh KH, Sharma D, Singh L, Kumar P, Nanjundan J, Khan YJ, Chauhan DK and **Thakur AK**. 2017. Genetic engineering strategies for biotic and abiotic stress tolerance and quality enhancement in horticultural crops: a comprehensive review. *3 Biotech*. 7: 239. DOI: 10.1007/s13205-017-0870-y
- 20) Parmar N, **Thakur AK**, Kumar P, Thakur PD and Bhardwaj SV. 2017. Molecular characterization of *Turnip mosaic potyvirus (TuMV)*-infecting radish (*Raphanus sativus* L.) crop in India. *3 Biotech*. 7: 382. DOI: 10.1007/s13205-017-1016-y

***Corresponding Author**