

Dr. Kalpna Thakur

Assistant Professor

Specialization: Molecular Biology & Biotechnology

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Ongoing Research Project

- Incubation centre for facilitating school to work transition in the agriculture sector funded by the State Project Director, SAMAGRA SHIKSHA, Shimla, Govt. of Himachal Pradesh, India (Co-PI)

Important Research Publications

- Rana V, Thakur K, Sood R, Sharma V and Sharma T R. 2012. Genetic diversity analysis of *Tinospora cordifolia* germplasm collected from the Northwestern Himalayan region of India. *Journal of Genetics* 91: 99-103.
- Thakur K and Kanwar K. 2017. *In vitro* plant regeneration by organogenesis from leaf callus of carnation, *Dianthus caryophyllus* L. cv. `Master`. *Proceedings of National Academy of Sciences, India, Section B.-Biological Sciences* 88: 1147-1155.
- Sharma S, Sharma R, Sharma P, Thakur K and Dutt B. 2018. Direct shoot organogenesis from seedling derived shoot tip explants of endangered medicinal plant *Saussurea costus* (Falc.) Lipsch. *Proceedings of National Academy of Sciences, India, Section B.-Biological Sciences*. Doi.org/10.1007/s40011-018-0983-z.
- Kumari M, Mittal R K, Chahota R K, Thakur K, Lata S and Gupta D. 2018. Assessing genetic potential of elite interspecific and intraspecific advanced lentil lines for agronomic traits and their reaction to rust (*Uromyces viciae-fabae*). *Crop and Pasture Science* 69: 999-1008.
- Rathour R, Kumar R, Thakur K and Pote T D. 2022. Genetic improvement for blast resistance in high-yielding cold tolerant rice cultivar Himalaya 741 by marker-assisted backcross breeding. *3 Biotech* 12: 165-177.
- Lata S, Kumari R, Thakur K, Rana M, Thakur N and Hussain W. 2022. Development of tryptophan rich maize lines through simple sequence repeat marker aided introgression of *opaque2* trait. *Electronic Journal of Plant Breeding* 13: 295-304.

- Pote T D, Rathour R, Kaachra A, Thakur K and Salgotra R K. 2022. Genetic improvement of traditional basmati rice Ranbir Basmati for semi-dwarfism and blast resistance by molecular breeding. *Plant Gene* 32: doi.org/10.1016/j.plgene.2022.100386.
- Verma S, Dubey N, Singh K H, Parmar N, Singh L, Sharma D, Rana D, Thakur K, Vaidya D and Thakur A K. 2023. Utilization of crop wild relatives for biotic and abiotic stress management in Indian mustard [*Brassica juncea* (L.) Czern. & amp; Coss.]. *Frontiers in Plant Sciences* 14: <https://doi.org/10.3389/fpls.2023.1277922>.
- Dwivedi A, Thakur K, Kumar S, Chaturvedi V D, Singh P K and Sanadya S K. 2023. Marker assisted introgression to generate precisely engineered crops against rice blast disease. *The Pharma Innovation Journal* 12 (8): 495-501.
- Biswas B, Thakur K, Pote T, Sharma K D, Krishnan S, Singh A, Sharma T R and Rathour R. 2023. Genetic and molecular analysis of leaf blast resistance in Tetep derived line RIL4 and its relationship to genes at *Pita/Pita* locus. *Scientific Reports* 13: 10.1038/s41598-023-46070-7.
- Chaudhary J, Thakur K, Shelkar R, Singh R, Rimpika, Devi S and Verma S. 2024. Food Security in India: Milestones Achieved So Far. *Archives of Current Research International* 24 (5): 480-493.
- Sharma A, Singh R, Chaudhary J, Thakur K, Ajender, Singh S V, Aman J and Adity. 2024. Bioactive compounds in *Pyrus pashia*, their bioactivities, and associated health benefits: a review. *Journal of Food Chemistry and Nanotechnology* 10 (S1): S138-S143.
- Gupta S, Bishnoi J P, Singh R, Walia A, Thakur K and Beniwal S K. 2024. Quality changes during the storage of ready to eat pumpkin butter prepared using *Terminalia arjuna* and *Glycyrrhiza glabra* powder. *Journal of Food Chemistry and Nanotechnology* 10 (S1): S57-S64.
- Punia H, Tokas J, Thakur K, Rautela I and Kalia S. 2024. Assessment of Sorghum bicolor fodder attributes for agroclimatic potential under salt stress. *Journal of Applied and Natural Science* 16 (4): 170 -1718.
- Sharma H, Chaudhary R, Poonam, Kalia M, Thakur K, Nautiyal S, Rawat A, Kagday M, Pal A, Kalia S and Rautela I. 2024. A sustainable agriculture method using biofertilizers: an eco-friendly approach. *Plant Science Today* 11 (3): 347-359.
- Singh N, Kushwaha A, Gul M, Singh H P, Kalia M, Rautela I, Kalia S, Ruchi, Thakur K, Sharma R, Digari J, Goswami M and Paliwal K. 2025. Role of microRNAs in secondary

metabolite regulation of medicinal plants: current status challenges and future perspectives. *Medicinal Plants* 17: 213-224.

- Singh H P, Gour V K, Singh S, Kalia S, Kaur G, Thakur K, Dwivedi A and Ruchi. 2025. Breeding and selection of elite lines combining high oil and seed characteristics in nontoxic background of *Jatropha curcas*. *Journal of Applied and Natural Science* 17 (3): 1193-1201.
- Sood U, Thakur K, Sharma I, Thakur S, Dwivedi A, Devi J, Katoch V, Sharma K D and Rathour R. 2026. Development and validation of codominant markers for recessive gene *er2* conferring resistance to powdery mildew in peas (*Pisum sativum* L.). *Euphytica* 222 (21): <https://doi.org/10.1007/s10681-026-03671-3>.
- Kumar S, Thakur K, Sharma I, Dwivedi A, Sharma K D, Katoch V and Rathour R. 2026. Development and characterization of near-isogenic lines of vegetable pea (*Pisum sativum* L.) for resistance to powdery mildew. *Journal of Plant Biochemistry and Biotechnology*. <https://doi.org/10.1007/s13562-026-01066-y>.

Books and Manuals

- Udasi R N, Thakur K, Verma K, Kumar M and Gautam B. 2026. Next-generation crop biotechnology and molecular breeding. The Pustakalaya, Lucknow, Uttar Pradesh. ISBN 9788169225908.

Awards/Recognition

- Qualified National Eligibility Test (NET) conducted by Agricultural Scientists Recruitment Board (ASRB), ICAR in Agricultural Biotechnology during April, 2014 and September, 2014.
- ICAR-Senior Research Fellowship (SRF) from 2018 to 2019
- DBT-Senior Research Fellowship (SRF) from 2019 to 2022.
- Life member of the Association of Biotechnology of Himachal Pradesh (ABHI)
- Member of the Indian Society of Tree Scientists