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Specialization: Plant tissue culture and molecular biology of temperate fruit, medicinal, and spice crops

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Important Research Publications

- Sharma P and **Thakur M**. 2026. Genetic signatures and sequence variations associated with Fusarium wilt tolerance in mutagenized ginger (*Zingiber officinale* Rosc.). *Plant Cell, Tissue and Organ Culture* (PCTOC) **165**:45 <https://doi.org/10.1007/s11240-026-03466-3>
- Thakur L, **Thakur M**, Kumar K, Gupta M and Sood S. 2025. *In vitro* selection and evaluation of colchicine-induced ginger (*Zingiber officinale* Rosc.) tetraploids against rhizome rot tolerance. *Plant Cell, Tissue and Organ Culture* (PCTOC) **163**:9 <https://doi.org/10.1007/s11240-025-03187-z>
- Sharma V, **Thakur M**, Chauhan A. 2024. Isolation, identification, pathogenicity test and molecular characterization of *Fusarium oxysporum* f. sp. *zingiberi* causing Fusarium yellows disease from infected rhizomes of ginger (*Zingiber officinale* Rosc.). *Journal of Plant Pathology* **106**: 1363-1368
- Sharma P, **Thakur M**, Chauhan A, Kamal S. 2024. Identification, classification and chromosomal mapping of Fusarium wilt related R-genes in mutagenized ginger (*Zingiber officinale* Rosc.) through comparative transcriptome sequencing. *South African Journal of Botany* **170**: 23-37
- Kumar K, Thakur L, **Thakur M**, Bhardwaj V and Gupta M. 2024. *In vitro* polyploidy induction in ginger (*Zingiber officinale* Rosc.) cv. Himgiri: morpho-physiological, biochemical, and molecular evaluation of regenerants. *In Vitro Cellular & Developmental Biology – Plant* **60** :693-710 <https://doi.org/10.1007/s11627-024-10468-3>
- Sharma P, **Thakur M**, Kamal S, Chauhan A, Dev H, Gupta R. 2023. Transcriptome Analysis for Gaining Insight into Gingerol Biosynthesis and MAPK Dependent Hormonal Signaling Pathway Involved in Resistance Mechanism in Fusarium Wilt Tolerant Ginger (*Zingiber officinale* Rosc.) Produced Through In Vitro Mutagenesis and Selection. *Journal of Plant Growth Regulation* **43**: 3140-3158
- **Thakur M**, Luharch R, Sharma V, Sharma D P. 2022. Molecular markers based genetic relatedness studies in tissue culture propagated japanese plum cultivars Santa Rosa and Frontier. *Genetic Resources and Crop Evolution* **69**: 567–575.
- Sharma N, **Thakur M**, Sharma P, Dutt B and Sharma YP. 2022. *In vitro* propagation from seeds and enhanced synthesis of podophyllotoxin from root callus of *SinoPodophyllum hexandrum* Royle T.S. Ying (Himalayan Mayapple) – An endangered medicinal plant. *Industrial Crops and Products* **186**: 115300.
- Sharma V and **Thakur M**. 2021. Gamma irradiations induced morphological and biochemical variations in *in vitro* regenerated ginger (*Zingiber*

officinale Rosc.)- an invaluable medicinal spice. *International Journal of Radiation Biology* **97**:1696-1704.

- **Thakur M**, Rakshandha, Sharma V and Chauhan A. 2020. Genetic fidelity assessment of long term *in vitro* shoot cultures and regenerated plants in Japanese plum cvs Santa Rosa and Frontier through RAPD, ISSR and SCoT markers. *South African Journal of Botany* **140**:428-433.
- Soni M, **Thakur M** and Modgil M. 2011. *In vitro* multiplication of Merton.I 793-An apple rootstock suitable for replantation. *Indian Journal of Biotechnology* **10**: 362-368.
- Sharma T, Modgil M and **Thakur M**. 2007. Factors affecting induction and development of *in vitro* rooting in apple rootstocks. *Indian Journal of Experimental Biology* **45**:824-829.
- **Thakur M**, Sharma DR and Sharma SK. 2002. *In vitro* selection and regeneration of carnation *Dianthus caryophyllus* L. plants for resistance against *Fusarium oxysporum* f.sp. *dianthi*. *Plant Cell Reports* **20**:825- 828.

Books and manuals

- Kumar P, Sharma P, Singh A, Sharma S, **Thakur M** and Sharma R. 2023. *Practical Manual on Elementary Plant Biotechnology*, Dr YS Parmar University of Horticulture & Forestry, Nauni, Solan (HP). p40.
- Modgil M, **Thakur M** and Srivastava D K. 2014. A laboratory manual on advance molecular techniques (Volume – I). Dr YS Parmar University of Horticulture & Forestry, Nauni, Solan (HP). ISBN:978-81-930100-1-3. 128p.

Awards & Recognitions

- Elected Member, Plant Tissue Culture Association of India (PTCA-I)
- First Position for outstanding Poster presentation under the thematic area ‘Micropropagation of Cash Crops’ **In:** Symposium & Industry Conclave on “Plant Tissue Culture for Boosting Biomanufacturing, Nutritional Security, and Climate Resilience” organized by BRIC-National Institute of Plant Genome Research (NIPGR) during February 17-20, 2026 at Jawaharlal Nehru University, New Delhi, India.
- Best Oral Presentation Award **In:** ‘2nd International Conference on Plant Physiology and Biotechnology (ICPPB-2023)’ held at Lovely Professional University, Jalandhar, Punjab in April, 2023.
- Awarded NAHEP fellowship for overseas training in Plant Health Institute, Montpellier, France for a period of one month in March 2023.
- Best Thesis and Innovative Research Award-2020 awarded to Ph.D. student by the Association of Plant Science Researchers (APSR)-Plantica foundation.
- Best Interactive Poster Award **In:** ‘International conference on next-generation plant production and bioresources utilization technologies’ held at IIT Guwahati in February, 2019.
- Uma Dutt Mamgain Award for Best Research in Ph.D. awarded to the Ph.D. student by the Society for Advancement of Human and Nature, Solan (HP) in 2019.