

Resume

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Professor

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RESEARCH INTERESTS:

Understanding genetics of agronomic traits of rice and brassica. Development of crop varieties using genomic tools. Development of tissue culture protocols for generation of quality planting material and crop improvement.

SUMMARY

- Teaching and research experience of 19 years
- Research experience in use of genomic tools for crop improvement including linkage based and genome wide association studies (GWAS); length and sequence based genotyping (genotyping by sequencing); and genomic selection
- Gene pyramiding for major biotic stresses in rice and brassica crops for development of improved genetic stocks/lines/varieties
- Exploitation of advanced genomic tools for enhancing nutritional content of rice and brassica varieties.
- Standardization of protocols for development of doubled haploid genotypes of rice; and generation of quality planting material of horticultural and medicinal plants.
- *Ex-situ* conservation of plant genetic resources of different crop plants.
- Team member in development of Pecan nut variety SKJPP 25 released by SKUAST-Jammu
- Teaching courses at under graduate, master and Ph.D. levels in Biotechnology
- Guiding project works of B.Tech. (Biotech.) students and thesis work of M.Sc. & Ph.D. students. Successfully guided 5 M.Sc. and 5 Ph.D. students.
- Additional duty for assisting Director Education in office/administrative activities
- Member Secretary, IPR Cell, SKUAST-Jammu
- Member University Examination Cell
- Member, Institute Industry Interaction Cell, NAHEP-IDP SKUAST-Jammu

EDUCATION

- **Ph.D. Genetics & Plant Breeding**, SKUAST-Jammu, India
- **M.Sc. (Agri) Plant Breeding**, Punjab Agriculture University, Ludhiana, India
- **B.Sc. Agriculture**, SKUAST-J&K, India
- **National Eligibility Test (Plant Breeding)-2001**

PROJECTS/GRANTS

S.No.	Title of project	Funding agency	Budget (Lakhs)	PI/ Co-PI	Current Status
01	Molecular marker assisted introgression and validation of blast resistance genes in the rice cultivar K 343 recommended for the hill zone of Jammu and Kashmir	SERB, New-Delhi	30.29	PI	Completed
02	Molecular marker assisted pyramiding of white rust resistance genes AcB1-A4.1 and AcB1-A5.1 in Brassica juncea cultivar RSPR-01 recommended in Jammu and Kashmir	DBT, New-Delhi	46.89	PI	Completed
03	Establishment of Ex-Situ Gen Bank at SKUAST-Jammu	J&K, Govt./ NABARD	440.00	PI	On-going
04	Agro-morphological characterization of <i>in vitro</i> raised saffron corms and screening of variants for resistance against fungal pathogens	DST, New-Delhi (WOS-A)	27.70	Mentor	Completed
05	Farmers' participatory collection, characterization and conservation of endangered genetic diversity of ginger (<i>Zingiber officinale</i> Rosc.) in Shivaliks	DST (Sarathi) New-Delhi	16.69	Co-PI	Completed
06	Fund for Improvement of S&T Infrastructure (FIST)" project of the Department of Science, New-Delhi operational at School of Biotechnology, SKUAST-Jammu (Co-PI)	DST, New-Delhi	50.00	Co-PI	Completed
07	Identification and characterization of phytoalexin receptor kinase gene family of rice vis-à-vis Arabidopsis and elucidating its role in abiotic stress tolerance	DBT, New-Delhi	19.98	Co-PI	On-going
08	Documentation, Revival and Upscaling of Indigenous Knowledge Systems for Scientific Development in Pir Panjal and Shivalik Ranges of UT of Jammu & Kashmir	DST, New-Delhi	75.00	Co-PI	On-going
09	Institutional Development Plan-Strengthening Institutional Capacities for delivering competent skilled professionals	NAHEP-ICAR, New Delhi	625.00	Associated Scientist	On-going
10	Establishment of Research and development centre of Basmati Rice at SKUAST-Jammu	NABARD	1106.05	Co-PI	On-going

Best Ten Publications

1. Lone, J.; Shikari, A.; Sofi, N.; Ganie, S.; **Sharma, M.**; Sharma, M.; Kumar, M.; Saleem, M.H.; Almaary, K.S.; Elshikh, M.S.; et al. 2022. Screening Technique Based on Seed and Early Seedling Parameters for Cold Tolerance of Selected F₂-Derived F₃ Rice Genotypes under Controlled Conditions. *Sustainability*, 14: 8447. <https://doi.org/10.3390/su14148447>(**NAAS: 9.25**)(**IF: 3.9**)
2. Bhat, R., Singh, A.K., Mushtaq, M., Salgotra, R.K., **Sharma, M.**, Bhat, B.A., Basu, U., Al-asker, I., Hossain, A.A., Ueda, Akhohiro and Ayman, E.S. 2022. Identification of QTLs for yield and associated traits in F₂ population of Rice. *Phyton- International Journal of Experimental Botany* (DOI: 10.32604/phyton.2022.020100) (**IF: 1.407**)
3. **Sharma, M.**, Sharma, M., Sharma, S.K., Gupta, V., Kotwal, N., Salgotra, R.K., Lone, J.A., Singh, A. and Hussain, R. 2022. Molecular marker assisted early generation selection of blast resistance gene (*Pi54*) in rice. *Agricultural Mechanization in Asia, Africa and Latin America (AMA)*, 53(05): 8105-8111 (**NAAS: 6.14**)
4. **Sharma, M.**, Abdullah, G.M., Salgotra, R.K., Hangloo, S., Punya, Singh, A.K., Sharma, V. and Singh, A. 2021. Genetic diversity analysis in rice (*Oryza sativa* L.) germplasm of region of Jammu and Kashmir. *Indian J. Genet.*, 81(4):529-537. doi:10.31742/ISGPB.81.4.5 (**NAAS: 6.55**)
5. Jasrotia, S., Salgotra, R.K. and **Sharma, M.** 2021. Efficacy of bioinoculants to control of bacterial and fungal diseases of rice (*Oryza sativa* L.) in northwestern Himalaya. *Brazilian Journal of Microbiology*. <https://doi.org/10.1007/s42770-021-00442-1>(**NAAS 8.86**)
6. **Sharma, M.**, Sharma, M., Salgotra, R.K., Gupta, M., Singh, A. K. and Gupta, L. M. 2019. Development of an effective protocol for *in vitro* multiplication of peppermint (*Mentha piperita*). *Indian Journal of Agricultural Sciences*, 89 (11): 1975–8(**NAAS:6.23**)
7. Bhat, R., Singh, A.K., Salgotra, R.K., **Sharma, M.**, Mushtaq, M., Bagati, S., Hangloo, S. and Singh, A. 2019. Detection of QTL for panicle architecture in F₂ population of rice. *Journal of Genetics*. 98:50. <https://doi.org/10.1007/s12041-019-1088>(**NAAS 6.67**)
8. Mushtaq, M., Sakina, A., Wani, S.H., Shikari, A.B., Tripathi, P., Zaid, A. Galla. A., Abdelrahman, M., **Sharma, M.**, Singh, A.K. and Salgotra, R.K. 2019. Harnessing Genome Editing Techniques to Engineer Disease Resistance in Plants. *Frontiers in Plant Science*, 10: 550 <https://doi.org/10.3389/fpls.2019.00550> (**NAAS 9.68**)
9. Salgotra, R.K., Zargar, S.M., **Sharma, M.**, Sood, M. 2018. Traditional Knowledge: A Therapeutic Potential in the of Climate Change Scenario for Sustainable Development. *Development* <https://doi.org/10.1057/s41301-018-0191-4>(**NAAS: 11.41**)
10. Bhat, A.K., Salgotra, R.K., Gupta, B.B., Kaushik, R.P., Kumar, B., **Sharma, M.**, Razdan, V.K., Rai, G.K. and Gupta, M. 2015. Development of bacterial blight resistance versions of basmati rice genotypes from Jammu, Northern Himalaya using marker assisted selection. *Indian Journal of Biochemistry and Biophysics*. 52:341-348. (**NAAS 6.39**)