

RESUME

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Research Interests: Genomics and Molecular Breeding in Vegetable Crops

SUMMARY

Working mainly on vegetable crops viz., peas, cucumber, common bean, chilli, garlic and ginger. We (Katochet *et al.*, 2010), for the first time reported the genetic mapping of *er2* (gene for powdery mildew resistance) to linkage group III of pea, thus clarifying the prevailing confusion in the literature regarding the existence and genomic location of *er2*. Other research interests include Linkage Mapping, GWAS, NGS data analysis and bioinformatics.

EDUCATION

S. No.	Degree	Year	Subject	University
1	B.Sc. (Agri.)	2001	Agriculture and Allied	GNDU, Amritsar
2	M. Sc. (Veg. Sci.)	2003	Vegetable Breeding	HPKV, Palampur
3	Ph.D. (Veg. Sci.)	2008	Vegetable Breeding	HPKV, Palampur
4	NET	2005	Vegetable Science	ASRB

PROJECTS/GRANTS

S. No.	Project	Funding Agency (Budget in lakhs)	Status
1	Collection and DNA profiling of nutritionally important underutilized vegetables of North Western Himalayas (Co-PI)	DST SERB (Rs. 38.61)	Ongoing
2	SSR based germplasm characterization for resistance to powdery mildew in cucumber (<i>Cucumissativus</i> L.) (PI)	DBT, New Delhi (Rs. 32.52)	Completed
3	Molecular marker assisted introgression of powdery mildew resistance genes into the elite cultivar of pea	DST (SERB)	Completed

	(<i>Pisumsativum</i> L.) (PI)	(Rs. 19.00)	
4	Farmers' participatory collection, characterization and conservation of endangered genetic diversity of ginger (<i>Zingiberofficinale</i> Rosc.) (PI)	DST, SARTHI (Rs. 16.69)	Completed
5	Transcriptome analysis, gene annotation and mining of a golden herb-garlic (<i>Allium sativum</i> L.) expressing resistance to destructive purple blotch (Mentor)	NPDF- SERB (DST) (Rs. 19.20)	Completed
6	Development of SNPs for <i>Brassica juncea</i> (Co-PI)	DBT, N. Delhi (Rs. 52.43)	Completed
7	Synthesis of new gene pool following introgression of disease resistance and drought tolerance genes from secondary (<i>Phaseoluscoccineus</i> L) and tertiary (<i>Phaseolusacutifolius</i> L) gene pools into cultivated <i>Phaseolus vulgaris</i> L (Co-PI)	DST-SERB (Rs. 33.10)	Completed

Best Ten Publications

1. Katoch, V., **Sharma, S.**, Pathania, S., Banyal, D.K., Sharma, S.K. and Rathour, R. 2010. Molecular mapping of pea powdery mildew resistance gene *er2* to pea linkage group III. **Molecular Breeding** 25(2): 229-237. doi:10.1007/s11032-009-9322-7.
2. Dar, A.A., **Sharma, S.**, Mahajan. R., Mushtaq, M., Salathia, A., Ahamad, S., and Sharma, J.P. 2020. Overview of purple blotch disease and understanding its management through chemical, biological and genetic approaches. **Journal of Integrative Agriculture**19(0): 2–13 doi: 10.1016/S2095-3119(20)63285-3
3. Dar, A.A., Mahajan, R., Lay, P and **Sharma, S.** 2017. Genetic diversity and population structure of *Cucumissativus* L. by using SSR markers. **3 Biotech** 7(5): 307 10.1007/s13205-017-0944-x.
4. **Sharma S**, Dar AA, Gupta S, Singh R. 2021. Evaluation of resistant genotypes and their characterization using molecular markers linked for powdery mildew resistance in cucumber (*Cucumissativus* L.). **Plant Genetic Resources: Characterization and Utilization** 1–6. <https://doi.org/10.1017/S1479262121000605>
5. Sudan, J., **Sharma, S.**, Salgotra, R.K., Pandey, R.K., Neelam, D. and Singh R. 2023. Elucidating the process of SNPs identification in non-reference genome crops, **Journal of Biomolecular Structure and Dynamics**, DOI: 10.1080/07391102.2023.2194002
6. Shah, R.A., Bakshi, P., Jasrotia, A., Wali, V.K., **Sharma, S.**, Gupta, M., Gupta, R.K., and Jamwal, M. 2023. Comparative morpho-molecular characterization of elite walnut variety Parbat (JWSP-06) with local selections of north-western Himalayan region of Jammu and Kashmir, India. **Scientia Horticulturae**. Vol. 319 <https://doi.org/10.1016/j.scienta.2023.112176>
7. Sudan J, Singh R, **Sharma S**, Salgotra RK, Sharma V, Singh G, Sharma I, Sharma S, Gupta SK and Zargar SM. 2019. ddRAD sequencing-based identification of inter-genepool SNPs and association analysis in *Brassica juncea*. **BMC Plant Biology**

19:594.

8. Sharma, A., Sekhon, B., **Sharma, S.**, and Kumar, R. 2020. Newly isolated intervarietal garden pea (*Pisumsativum* L.) progenies (F7) under north western Himalayan conditions of India. **Experimental Agriculture**, 56(1), 76-87. doi:10.1017/S0014479719000115
9. Sharma, R., Dar, A.A., Mahajan, R. and **Sharma, S.** 2019. Molecular and Biochemical Characterisation of Indian Germplasm of *Pisumsativum* L. **Proc. Natl. Acad. Sci., India, Sect. B Biol. Sci.** (<https://doi.org/10.1007/s40011-018-01069-3>)
10. Sharma, P. **Sharma, S.**, Singh, J., Saha, S. and Baranwal, V.K. 2016. Incidence of Lettuce mosaic virus in lettuce and its detection by polyclonal antibodies produced against recombinant coat protein expressed in *Escherichia coli*. **Journal of Virological Methods** 230: 53–58. <http://dx.doi.org/10.1016/j.jviromet.2016.01.014>