

Surbhi Kumawat

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https://scholar.google.com/citations?hl=en&user=yx2DM_kAAAAJ

Education	Ph.D. in Biotechnology	2022
	Panjab University, Department of Biotechnology Advisor: Dr. Rupesh Deshmukh	
	M.Sc in Botany	2018
	The IIS University, Department of Botany	

PUBLICATIONS

1. **Kumawat S**, Khatri P, Ahmeda A, Vats S, Kumar V, Jaiswal R, Wang Y, Xu P, Mandlik R, Shivaraj SM, Deokar A, Sonah H, Sharma TR, Deshmukh R (2021). Understanding aquaporin transport system, silicon uptake and deposition in bottle gourd (*Lagenaria siceraria*). Journal of Hazardous Material 409: 124598.
2. **Kumawat S***, Rushil Mandlik R, Singla P, Khatri P, Ansari W, Singh A, Sharma Y, Singh A, Solanke A, Nadaf A, Sonah H, Deshmukh R (2021). Understanding aquaporin regulation defining silicon uptake and role in arsenic, antimony and germanium stress in pigeonpea (*Cajanus cajan*). Environmental Pollution 294: 118606.
3. **Kumawat S**, Rana N, Bansal R, Vishwakarma G, Mehetre ST, Das BK, Kumar M, Yadav SK, Sonah H, Sharma TR, Deshmukh R (2019). Expanding Avenue of Fast Neutron Mediated Mutagenesis for Crop Improvement. Plants 8: 164.
4. **Kumawat S**, Sharma Y, Vats S, Sudhakaran S, Sharma S, Mandlik R, Raturi G, Kumar V, Rana N, Kumar A, Sonah H, Deshmukh R (2021). Understanding the role of SWEET genes in fruit development and abiotic stress in Pomegranate (*Punica granatum L.*). Molecular Biology Reports 1-11.
5. **Kumawat S**, Aggarwal B, Rana N, Mandlik R, Mehra A, Shivaraj SM, Sonah H, Deshmukh R (2021). Identification of aquaporins and deciphering their role under salinity stress in pomegranate (*Punica granatum*). Journal of Plant Biochemistry and Biotechnology 1-13.
6. Vats S, **Kumawat S**, Kumar V, Patil G, Joshi T, Sonah H, Sharma TR, Deshmukh R (2019). Genome-editing in Plants: Exploration of Technological Advancements and Challenges. Cells 8(11): 1386.
7. Rana N, **Kumawat S**, Kumar V, Bansal R, Mandlik R, Dhiman P, Patil G B, Deshmukh R, Sharma T. R, Sonah H (2022). Deciphering haplotypic variation and gene expression dynamics associated with nutritional and cooking quality in rice. Cells 11(7): 1144.
8. Raturi G, **Kumawat S**, Mandlik R, Duhan D, Thakral V, Sudhakaran S, Ram C, Sonah H, Deshmukh R (2022). Deciphering the role of Aquaporins under different abiotic stress conditions in

watermelon (*Citrullus lanatus*). *Journal of Plant Growth Regulation* 1-13.

9. Bansal R, **Kumawat S**, Dhiman P, Sudhakaran S, Rana N, Jaswal R, Singh A, Sonah H, Sharma TR and Deshmukh R (2022). Evolution of Bcl-2 Anthogenes (BAG) as the Regulators of Cell Death in Wild and Cultivated *Oryza* Species. *Journal of Plant Growth Regulation* 1-17.

10. Vats S, Bansal R, Rana N, **Kumawat S**, Bhatt V, Jadhav P, Kale V, Sathe A, Sonah H, Jugdaohsingh R, Sharma TR (2022). Unexplored nutritive potential of tomato to combat global malnutrition. *Critical Reviews in Food Science and Nutrition* 62(4):1003-34.

11. Kumar N, **Kumawat S**, Khatri P, Singla P, Tandon G, Bhatt V, Shinde S, Patil GB, Sonah H, Deshmukh R (2020). Understanding aquaporin transport system in highly stress-tolerant and medicinal plant species Jujube (*Ziziphus jujuba*). *Journal of Biotechnology* 324:103-111.

12. Kumar V, Vats S, **Kumawat S**, Bisht A, Bhatt V, Shivaraj SM, Padalkar G, Goyal Goyal, Zargar S, Gupta S, Kumawat G, Chandra S, Chalam CC, Ratnaparkhe MB, Gill BS, Jean M, Patil GB, Vuong T, Rajcan I, Deshmukh R, Belzile F, Sharma TR, Nguyen HT, Sonah H (2021). Omics advances and integrative approaches for the simultaneous improvement of seed oil and protein content in soybean (*Glycine max L.*). *Critical Reviews in Plant Sciences* 40 (5): 398-421.

13. Singh S, Bhatt V, Kumar V, **Kumawat S**, Khatri P, Singla P, Shivaraj SM, Nadaf A, Deshmukh R, Sharma TR, Sonah H (2020). Understanding the aquaporins transport system in the basal eudicot model species *Aquilegia coerulea*. *Plants* 9(6): 799.

14. Chaudhary J, Khatri P, Singla P, **Kumawat S**, Kumari A, Vinaykumar R, Vikram A, Jindal SK, Kardile H, Kumar R, Sonah H. Deshmukh R (2019). Advances in Omics Approaches for Abiotic Stress Tolerance in Tomato. *Biology* 8(4): 90.

15. Rana N, Rahim SM, Kaur G, Bansal R, **Kumawat S**, Roy J, Deshmukh R, Sonah H, Sharma TR (2019). Applications and Challenges for Efficient Exploration of Omics Interventions for the Enhancement of Nutritional Quality in Rice (*Oryza sativa L.*). *Critical Reviews in Food Science and Nutrition* 1-17.

16. Shivaraj SM, Vats S, Bhat J, Dhakte P, Goyal V, Khatri P, **Kumawat S**, Singh A, Prasad M, Sonah H, Sharma TR, Deshmukh R (2019). Nitric oxide and hydrogen sulfide crosstalk during heavy metal stress in plants. *Physiologia Plantarum* 168 437–455.

17. Rajora N, Thakral V, G, Vats S, Padalkar G, Sudhakaran S, **Kumawat S**, Sonah H, Deshmukh R (2022). Understanding aquaporins regulation and silicon uptake in carrot (*Daucus carota*). *J. Plant Biochem. Biotechnol* 1-12.
18. Rana N, **Kumawat S**, Singh UM, Singh VK, Deshmukh R, Sharma TR, Sonah H. (2022). Identification of genomic loci governing pericarp colour through GWAS in rice (*Oryza sativa* L.). *INDIAN JOURNAL OF GENETICS AND PLANT BREEDING* 82(01).
19. Vats S, **Kumawat S**, Brar J, Kaur S, Yadav K, Magar SG, Jadhav PV, Salvi P, Sonah H, Sharma S (2022). Opportunity and challenges for nanotechnology application for genome editing in plants. *Plant Nano Biology* 100001.
20. Bansal R, Rana N, **Kumawat S**, Kumar N; Preeti, Bhatt V, Ansari W, Nadaf A, Katara JL, Samantaray S, Deshmukh R (2019). Advances in induced mutagenesis and mutation mapping approaches in rice. *Oryza* 56 (Special Issue): 106-114.
21. Kumar V, Goyal V, Mandlik R, **Kumawat S**, Sudhakaran S, Padalkar G, Rana N, Deshmukh R, Roy J, Sharma TR, Sonah H (2022). Pinpointing genomic regions and candidate genes associated with seed oil and protein content in soybean through an integrative transcriptomic and QTL meta-analysis. *Cells* 12(1): 97.
22. **Kumawat S**, Gupta S, Purohit S, Garg NK, Singh J, Gupta NK (2019). Effect of PEG Induced Water Deficit Stress On Physio-Biochemical Characteristics of Different Pearl Millet Varieties. *Journal of Plant Development Sciences* 11(3): 143-150.
23. Padalkar G, Mandlik R, Sudhakaran S, Vats S, **Kumawat S**, Kumar V, Deshmukh R, Sharma TR, Sonah H (2022). Necessity and challenges for exploration of nutritional potential of staple-food grade soybean. *Journal of Food composition and Analysis* 105093.
24. Raturi G, Sharma Y, Mandlik R, **Kumawat S**, Rana N, Dhar H, Tripathi DK, Sonah H, Sharma TR, Deshmukh R. Genomic landscape highlights molecular mechanism involved in silicate solubilization, stress tolerance, and growth-promoting activity of Bacteria *Enterobacter* sp. LR6. *Cells* 11 (22): 3622.

Book Chapter

1. **Kumawat S**, Raturi G, Dhiman P, Sudhakarn S, Rajora N, Thakral V, Yadav H, Padalkar G, Sharma Y, Rachappanavar V, Kumar M (2022). Opportunity and challenges for whole-genome re-sequencing based genotyping in plants. *Genotyping by Sequencing for Crop Improvement*. John Wiley & Sons.
2. Thakral V, Yadav H, Padalkar G, **Kumawat S**, Raturi G, Kumar V, Mandlik R, Rajora N, Singh M (2022). Recent advances and

applicability of GBS, GWAS, and GS polyploidy crop species. Genotyping by Sequencing for Crop Improvement. John Wiley & Sons.

3. Vats S, Sharma Y, Kumar V, Mandlik R, **Kumawat S**, Yadav H, Dhiman P, Thakara V, Sudhakarn S (2022). Recent advances and applicability of GBS, GWAS, and GS in oilseed crops. Genotyping by Sequencing for Crop Improvement. John Wiley & Sons.

ACADEMIC HONOR AND AWARDS	Best talk in International Webinar on Plant Genomics.	2021
	Gold medalist in M.Sc.	2018
	Third prize winner in the bio quiz program of the fest Biochrome.	2017
	National Eligibility Test (NET) for lectureship and Junior Research Fellowship (JRF) for PhD from CSIR-UGC India. All India Rank 74.	2017
	Stand Sixth in order of merit in the Bachelor of Science.	2016
	Certificate of Excellence in Rio+22 UN Sustainable Energy.	2016
	PRESENTATION AND WORKSHOP	BioSangam International Conference on emerging trends in biotechnology.
	Pulse Research (ICPR-2022) organized by the Society for Plant and Agricultural Sciences (SPAS).	2022
	International Conference on Biotechnology for Sustainable Agriculture, Environment and Health.	2021
	HaploNILs- NARES B4R Training.	2021
	Workshop on membrane proteins molecular dynamics simulations.	2021
	International Workshop On Basic to Advanced Bioinformatics.	2020
	Participated in live webinar on “Genomics for food, health and nutrition” organized by Center of Excellence in Genomics and Systems Biology (CEGSB).	2020
	Webinar on Applications of Omics in Climate Smart Agriculture organized by the Centre for Advance Agricultural Science and Technology (CAAST).	2020
	Stood First in poster presentation in the theme climate change, Environment and Health.	2018
	Seminar on Protection of Plant Varieties and Farmers’ Rights Organized by Intellectual Property Management cell.	2016
	National conference on “Biodiversity: harmonizing conversation with life and landscape of arid and semi-arid areas”.	2014
	National seminar on Reproductive Health Awareness 12-13 September.	2014
MEMBERSHIP	Young Earth System Scientists community	

Society for Plant Biochemistry and Biotechnology
The Indian Society of Genetics & Plant Breeding
Association of Rice Research Workers
Indian Science Congress Association
Indian Society for Plant Physiology

**PROFESSIONAL
SERVICE**

Reviewed articles for:

Journal of Advanced Research, Journal of Biotechnology, Journal of Plant Biochemistry and Biotechnology, Frontiers in Genome Editing, Bulletin of the National Research Centre, and International Journal of Molecular Sciences