

Curriculum vitae

ROSHAN KUMAR SINGH

Project Scientist-I

National Institute of Plant Genome Research

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EDUCATION

Degree	Year	Institution/University	% Marks	Class
B.Sc. (Botany)	2008 - 11	Scottish Church College, Kolkata (University of Calcutta, Kolkata, India)	75.5	First*
M.Sc. (Botany)	2011 - 13	University of Calcutta, Kolkata, India	78.40	First*
Ph.D.	2014 - 20	National Institute of Plant Genome Research, New Delhi (Jawaharlal Nehru University, New Delhi)	Awarded	

*University second rank

EMPLOYMENT RECORD

- ❖ **Project Scientist-I**, National Institute of Plant Genome Research (2020-present)

HONORS & AWARDS

- ❖ **Joint CSIR-UGC Junior Research Fellowship** from *Council of Scientific & Industrial Research (CSIR)*, Government of India (2014 - 2019).
- ❖ **Best oral Presentation award** at International Conference on '*Advances and Innovations in Biotechnology for Sustainable Development*', Madhya Pradesh, 2019.
- ❖ **First Prize in oral presentation** at '*National Conference on Biotechnology and Environment*' organized by National Environment Science Academy & Jamia Millia Islamia University, 2017.
- ❖ **Professor H. L. Chakraborty memorial award** for securing 2nd position in the M.Sc. Examination in botany of the University of Calcutta, 2013.
- ❖ **Dr. P. Chatterjee memorial award** for securing 2nd position in the B.Sc. Botany (Hons.) Examination of the University of Calcutta, 2011.

PhD THESIS

"Delineating the roles of heat shock factor- and heat shock protein- encoding gene(s) of foxtail millet [*Setaria italica* (L.) P. Beauv.] during abiotic stress" under the guidance of **Dr. Manoj Prasad**, Senior Scientist & JC Bose National Fellow, NIPGR, New Delhi [*CSIR-UGC JRF NET in Life Science - June 2014*]

PATENT

Singh RK, Prasad M. A Method For Enhancing Heat Tolerance And Photosynthetic Efficiency In Rice Plant. Indian Patent Application no. 202011015704 (filed on 10-04-2020).

COMPLETE LIST OF PUBLICATIONS

- ❖ **Singh RK**, Jaishankar J, Muthamilarasan M, Shweta S, Dangi A, Prasad M (2016) Genome-wide analysis of heat shock proteins in C4 model, foxtail millet identifies potential candidates for crop improvement under abiotic stress. *Scientific Reports* 6:32641.
- ❖ **Singh RK**, Prasad M (2016) Advances in *Agrobacterium tumefaciens*-mediated genetic transformation of graminaceous crops. *Protoplasma* 253:691-707.
- ❖ **Singh RK**, Shweta S, Muthamilarasan M, Rani R, Prasad M (2019) Study on aquaporins of *Setaria italica* suggests the involvement of SiPIP3;1 and SiSIP1;1 in abiotic stress response. *Functional & Integrative Genomics* 19:587-596.
- ❖ Sood P, **Singh RK**, Prasad M (2020) An efficient *Agrobacterium*-mediated genetic transformation method for foxtail millet (*Setaria italica* L.). *Plant Cell Reports* 39:511-525.
- ❖ **Singh RK**, Deshmukh R, Muthamilarasan M, Rani R, Prasad M (2020) Versatile roles of aquaporin in physiological processes and stress tolerance in plants. *Plant Physiology and Biochemistry* 149:178-189.
- ❖ **Singh RK**, Prasad A, Muthamilarasan M, Parida SK, Prasad M (2020) Breeding and biotechnological interventions for trait improvement: status and prospects. *Planta* 252:54.
- ❖ Sood P, **Singh RK**, Prasad M (2019) Millets genetic engineering: the progress made and prospects for the future. *Plant Cell, Tissue & Organ Culture* 37:421-439.
- ❖ Jency JP, Rajasekaran R, **Singh RK**, Muthurajan R, Prabhakaran J, Mehanathan M, Prasad M, Ganesan J (2020) Induced Mutagenesis Enhances Lodging Resistance and Photosynthetic Efficiency of Kodomillet (*Paspalum scrobiculatum*). *Agronomy* 10:227.
- ❖ Muthamilarasan M, **Singh RK**, Suresh BV, Rana S, Dulani P, Prasad M (2020) Genomic dissection and expression analysis of stress-responsive genes in C4 panicoid models, *Setaria italica* and *Setaria viridis*. *Journal of Biotechnology* 318:57-67.
- ❖ **Singh RK**, Muthamilarasan M, Prasad M (2021) Biotechnological approaches to dissect climate-resilient traits in millets and their application in crop improvement. *Journal of Biotechnology* 327:64-73.

- ❖ **Singh RK**, Sahu PP, Muthamilarasan M, Dhaka A, Prasad M (2017) Genomics-Assisted Breeding for Improving Stress Tolerance of Gramineous Crops to Biotic and Abiotic Stresses: Progress and Prospects. M. Senthil-Kumar (ed.), *Plant Tolerance to Individual and Concurrent Stresses*, pp59-81.
- ❖ **Singh RK**, Muthamilarasan M, Prasad M (2017) Foxtail millet: an introduction. Prasad M. (ed.), *The Foxtail millet genome*, pp 1-9.
- ❖ **Singh RK**, Prasad M (2017) Genome wide association studies for improving agronomic traits in foxtail millet. Prasad M. (ed.), *The Foxtail millet genome*, pp 63-75.
- ❖ **Singh RK**, Gupta V, Prasad M (2019) Plant Molecular Chaperones: Structural Organization and their Roles in Abiotic Stress Tolerance. Roychoudhury A and Tripathi DK (ed.), *Molecular Plant Abiotic Stress: Biology and Biotechnology*, pp 221-239.
- ❖ **Singh RK**, Prasad A, Prasad M (2020) Protein phosphatases of cereals and millets: Identification, structural organization and their involvement in regulation of abiotic stresses. Girdhar K. Pandey (ed.), *Protein phosphatases and stress management in plants: Functional genomic perspective*, pp 245-260.
- ❖ **Singh RK**, Prasad M (2020) Foxtail Millet: A Climate-Resilient Crop Species with Potential to Ensure Food and Agriculture Security Amidst Global Climate Change. *International Journal of Plant and Environment* 6:165-169.
- ❖ Dhaka A, **Singh RK**, Muthamilarasan M, Prasad M (2021) Genetics and genomics interventions for promoting millets as functional foods. *Current Genomics* 22:154-163.
- ❖ **Singh RK**, Prasad M (2021) Delineating the epigenetic regulation of heat and drought response in plants. *Critical Reviews in Biotechnology* <https://doi.org/10.1080/07388551.2021.1946004>
- ❖ **Singh RK**, Prasad A, Maurya J, Prasad M (2021) Regulation of small RNA-mediated high temperature stress responses in crop plants. *Plant cell reports* doi:10.1007/s00299-021-02745-x.
- ❖ **Singh RK**, Prasad M (2021) Big genomic data analysis leads to more accurate trait prediction in hybrid breeding for yield enhancement in crop plants. *Plant Cell Reports* doi:10.1007/s00299-021-02761-x
- ❖ **Singh RK**, Sood P, Prasad A, Prasad M (2021) Advances in omics technology for improving crop yield and stress resilience. *Plant Breeding* doi: 10.1111/pbr.12963
- ❖ Suresh BV, Choudhary P, Aggarwal PR, Rana S, **Singh RK**, Ravikesavan R, Prasad M, Muthamilarasan M (2022) De novo transcriptome analysis identifies key genes involved in dehydration stress response in kodo millet (*Paspalum scrobiculatum* L.). *Genomics* doi:10.1016/j.ygeno.2022.110347

- ❖ **Singh RK**, Dhaka A, Muthamilarasan M, Prasad M (2022) Nutritional improvement of cereal crops to combat hidden hunger during COVID-19 pandemic: Progress and prospects. *Advances in Food Security and Sustainability* doi.org/10.1016/bs.af2s.2022.02.001

PUBLICATION SUMMARY

Cumulative impact factor (JCR 2020)	: 65+
H-index (Google Scholar)	: 9
Total citations (Google Scholar)	: 294
i10 index (Google Scholar)	: 8

(See: <https://scholar.google.com/citations?user=UwEPtdcAAAAJ&hl=en>)

OTHER ACTIVITIES/RESPONSIBILITIES (ACADEMIC/ADMINISTRATIVE)

- ❖ Member of organizing committee in First National Conference on “**Neglected and Underutilized Crop Species for Food, Nutrition, Energy and Environment (NUCS-FNEE)**” held at NIPGR, New Delhi on August 2, 2019.
- ❖ Member of organizing committee in United-States India Educational Foundation workshop for farmers on “**The stubble struggle: Dialogue on the 'burning' issue and practical remedies**” oorganized at the National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Sonipat, Haryana on September 28-29, 2019.
- ❖ Served as student member in hostel committee for the year 2016-2017 at NIPGR, New Delhi.

PERSONAL PROFILE

Date of Birth	: June 29, 1991
Sex	: Male
Marital Status	: Single
Language Known	: English, Hindi, Bengali
Native	: Flat-19, Block-V, HRBC Housing Estate, Howrah, West Bengal

DECLARATION

I do hereby declare that the particulars of information and facts stated herein above are true, correct and complete to the best of my knowledge and belief.

(Roshan Kumar Singh)