Profile of the Scientist

1. Name of the scientist : Dr Manoj Kumar Srivastava

2. Personal information

a) Designation : Head, Plant Physiology & Biochemistry Division
b) Date of joining ICAR : 29/07/2009 (as Senior Scientist at IGFRI, Jhansi)
c) Date of joining IISR : 20/06/2023 (as Head, PPB Division)
d) Discipline Specialization : Biochemical basis of abiotic stress tolerance, Enzymology, Proteomics, Biochemical characterization of apomictic grasses.

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3. Training/advance exposure in the area of work:

- Molecular marker- assisted crop breeding: principles, methods and applications. ICAR-Indian Agricultural Research Institute, New Delhi. (21 days).
- MDP on Quantitative decision making techniques for agricultural management and research for scientific personnel, IGFRI. Indian Institute of Forest Management, Bhopal (6 days).
- National Workshop on Proteomics and structural Bioinformatics. ICAR-National Dairy Research Institute, Karnal (3 days).
- Phenotyping for drought adaptive traits and their introgression for crop improvement. University of Agricultural Sciences, Bengaluru (8 days).
- Genome editing mediated by CRISPR/ Cas9: tools, experimental design and applications. National Agri-Food Biotechnology Institute, Mohali. (4 days).

Future Planning of research (in bullets):

- To develop technologies for increased accumulation of sucrose in sugarcane.
- To develop techniques for minimizing post- harvest reduction in sucrose content.

Contribution to the Scientific Advancement:

Publications in Research Journals	:	40
Presentations in Seminar/ Symposia	:	30
Book Chapters, Bulletins etc.	:	11
Varieties Developed	:	03
Germplasm Registration	:	04

Publications (Best 10)

(i) Singh S, Singh T, Singh KK, **Srivastava MK**, Das MM, Mahanta SK, Kumar N, Katiyar R, Ghosh PK and Misra AK (2023) Evaluation of global Cenchrus germplasm for key nutritional and silage quality traits. Front. Nutr. 9:1094763. doi: 10.3389/fnut.2022.1094763.

(ii) Sanjay Gupta, Giriraj Kumawat, Nisha Agrawal, Rachana Tripathi, Vangala Rajesh, Vennampally Nataraj, Shivakumar Maranna, Gyanesh K. Satpute, Subhash Chandra, Milind B. Ratnaparkhe, **Manoj K. Srivastava**, Nita Khandekar, Meeta Jain (2022). Photoperiod trait: Insight in molecular mechanism for growth and maturity adaptation of soybean (Glycine max) to different latitudes. Plant Breeding. 2022;1–18.

(iii) A. K. Roy, M. Chakraborti, A. Radhakrishna, K. K. Dwivedi, **M. K. Srivastava**, S. Saxena, S. Paul, Aarti Khare, D. R. Malaviya, P. Kaushal. (2022). Alien genome mobilization and fixation utilizing an apomixis mediated genome addition (AMGA) strategy in Pennisetum to improve domestication traits of P. squamulatum. *Theoretical and Applied Genetics* *https://doi.org/10.1007/s00122-022-04138-4.*

(iv) John G. Carman, Mayelyn Mateo de Arias, Lei Gao, Xinghua Zhao, Becky M. Kowallis, David A. Sherwood, **Manoj K. Srivastava**, Krishna K. Dwivedi, Bo J. Price, Landon Watts, Michael D. Windham. (2019) Apospory and Diplospory in Diploid Boechera (Brassicaceae) may Facilitate Speciation by Recombination-driven Apomixis-to-sex Reversals. Frontiers in Plant Sciences 10: 724 (doi: 10.3389/fpls.2019.00724)

(v) Pankaj Kaushal, Krishna K. Dwivedi, Auji Radhakrishna, **Manoj K. Srivastava**, Vinay Kumar, Ajoy Kumar Roy and Devendra R. Malaviya. (2019). Partitioning apomixis components to understand and utilize gametophytic apomixis. Frontiers in Plant Sciences 10: 256 (doi: 10.3389/fpls.2019.00256)

(vi) Joakim Bygdell, Vaibhav Srivastava, Ogonna Obudulu, **Manoj K. Srivastava**, Robert Nilsson, Björn Sundberg, Johan Trygg, Ewa Mellerowicz, and Gunnar Wingsle. (2017). Protein expression in tension wood formation in *Populus*, monitored at high tissue resolution. J. Experimental Botany 68 (13): 3405-3417. (NAAS rating 11.53).

(vii) Srivastava V, **Srivastava M. K.,** Chibani K., Nilsson R., Rouhier N., Melzer M. and Wingsle G. (2009). Alternative splicing studies of Reactive Oxygen species gene network in Populus reveals two isoforms of High Isoelectric point superoxide dismutase. *Plant Physiology* **149:** 1848-1859.

(viii) Srivastava Vaibhav, Helga Schinkel, Johanna Witzell, Magnus Hertzberg, Mikaela Torp, **Manoj Kumar Srivastava**, Barbara Karpinska, Michael Melzer and Gunnar Wingsle. (2006) Down regulation of high-isoelectric-point extracellular superoxide

dismutase mediates alterations in the metabolism of reactive oxygen species and developmental disturbances in hybrid aspen. *Plant Journal* **49:** 135-148.

(ix) N. Rouhier, E. Gelhaye, A. Villarejo, **Manoj Srivastava**, O. Keech, M. Droux, I. Finkemeier, K.J. Dietz, J.P. Jacquot and Gunnar Wingsle. (2005). Identification of plant glutaredoxin targets. *Antiox. Redox Sig.* **7**: 919-929.

(x) B. Karpinska, M. Karlsson, **Manoj Srivastava**, A Stenberg, J. Schrader, F. Sterky, R. Bhalerao and Gunnar Wingsle. (2004). Myb transcription factors are differentially expressed and regulated during secondary vascular tissue development in hybrid aspen. *Plant Mol. Biol.* **56**: 255-270.