

Prof. (Dr.) MANISH SRIVASTAV

Ph.D., ARS, FIAHS, FISNS, FSHRD

Dean, College of Horticulture & Forestry

Rani Lakshmi Bai Central Agricultural University, Jhansi 284 003

E-mail: deancohf.rlbcu@gmail.com; manishfht@gmail.com

Phone: 0510-2730802; +91-9868461663

Former Professor- ICAR-Indian Agricultural Research Institute, New Delhi



Professional Experience

- Dean, College of Horticulture & Forestry, Rani Lakshmi Bai Central Agricultural University, Jhansi 284 003 (UP), April 19, 2024
- Professor, Discipline of Fruit Science, ICAR- Indian Agricultural Research Institute, New Delhi, December 17, 2021 to April 18, 2024.
- Principal Scientist, Division of Fruits & Horticultural Technology, ICAR- Indian Agricultural Research Institute, New Delhi, Nov. 11, 2014 to April 18, 2024.
- Senior Scientist, Division of Fruits & Horticultural Technology, ICAR- Indian Agricultural Research Institute, New Delhi, Nov. 11, 2008 to Nov. 10, 2014.
- Scientist, Division of Fruits & Horticultural Technology, ICAR- Indian Agricultural Research Institute, New Delhi, Nov. 11, 1999 to Nov. 10, 2008.

International Exposure

- Visiting Scientist, Department of Horticulture, University of Wisconsin, Madison, USA

Significant Research Contributions

- Development and release of six fruit varieties including four mango (Pusa Pratibha, Pusa Lalima, Pusa Peetamber and Pusa Shreshth), one sweet orange (Pusa Round) and one acid lime (Pusa ALC-40) by CVRC (CG-DL-E-08042021-226407 dated 07.04.2021, Gazette of India).
- Development and release of four fruit varieties including two mango (Pusa Deepshikha and Pusa Manohari), one sweet orange (Pusa Sharad) and one acid lime (Pusa Udit) by SVRC (F.10(1)2/SI/TA/ Sub-Committee/2017-18/2332-2373).
- Whole genome sequencing of mango varieties Amrapali, Dashehari and Neelum.
- Developed high-resolution (>5000 SNP) genetic linkage map using bi-parental (Amrapali x Sensation) mapping population.
- Identified QTL(s) for fruit quality traits, viz., fruit colour, pulp & peel firmness, TSS, fruit shape, carotenoids etc. in mango.
- Development of web genomic resources *MiSNPDb* database in mango.

- Generation and validation of DNA marker (SNPs and SSRs) resources in mango.
- Identification of SSR markers having association with fruit bearing, embryo type, fruit quality and parentage confirmation, etc.
- Identified highly informative SSR markers for parentage confirmation of open pollinated mango population.
- Validated >1000 genic-SSR markers designed from whole genome sequence data in mango.
- Developed DNA finger-prints of IARI bred mango hybrids.
- Developed full sibs (~200) and half sibs (~500) for genetical studies in mango.
- Standardized long-term pollen storage technique in mango.
- Ascertained the self-incompatibility phenomenon in Mallika & Amrapali mango varieties.

Research Projects

- Handled 4 Externally Funded Research Projects (DBT, Govt. of India & ICAR, New Delhi), and 8 In-house Research Projects.

Teaching and Research Guidance

- Teaching experience of 25 years.
- Guided 20 Ph.D./ M.Sc. students as Chairperson Advisory Committee and 25 students as Co-Chairperson.
- Developed Course Curriculum for PG students of Yezin Agricultural University (YAU) Yezin, Nay Pyi Taw, Myanmar under setting up of the Advanced Center for Agricultural Research & Education (ACARE), Myanmar programme of Ministry of External Affairs, Govt. of India and ICAR, New Delhi.
- Revised the Course Curriculum of Discipline of Fruits Science as per ICAR Deans' Committee Recommendations.
- Organized 5 months Teaching Programme for M.Sc. students of ANASTU (Afghan National Agricultural Sciences & Technology University, Kandhar) sponsored by MEA & ICAR.

Awards/ Recognitions

- Recipient of ICAR- Bharat Ratna Dr C. Subramaniam Award for Outstanding Teachers-2019.
- ICAR- IARI Best Teacher Award-2013.
- HSI- Dr D.P. Ghosh Young Scientist Award-2016.
- Fellow, Indian Academy of Horticultural Sciences, New Delhi.
- Fellow, International Society of Noni Sciences, Chennai.
- Fellow, Society for Horticultural Research and Development, Ghaziabad.
- Editor, Indian Journal of Horticulture from 2014 to 2017.
- Member, Core Scientific Team, ICAR- IARI, New Delhi.

Publications

- **Research Papers – 100**
- **Books/Manuals – 15**
- **Book Chapters – 25**
- **Popular articles – 30**

Citation – 2094 h-Index – 22 i10-Index – 52

Selected Review/ Research Papers

1. Rymbai, H., **Srivastav, M.**, Sharma, R. R. and Singh, S. K. 2012. Lenticels on mango fruit: Origin, development, discoloration and prevention- A review. *Scientia Horticulturae*, **135**: 164–170
2. Rymbai, H., **Srivastav, M.**, Sharma, R.R., Patel, C.R. and Singh, A.K. 2013. Bio-active compounds in mango (*Mangifera indica* L.) and their roles in human health and plant defence - A review. *The Journal of Horticultural Sciences and Biotechnology*, **88**(4):269-379.
3. Baghel, M., Nagaraja, A., **Srivastav, M.**, Meena, N.K., Kumar, M.S., Kumar, A. and Sharma, R.R. 2019. Pleiotropic influences of brassinosteroids on fruit crops: a review. *Plant Growth Regulation*, **87**(2): 275-88.
4. **Srivastav, M.**, Radadiya, N., Ramachandra, S.,and Singh, N.K. 2023. High resolution mapping of QTLs for fruit color and firmness in Amrapali/Sensation mango hybrids. *Frontiers in Plant Sciences*, doi.org/10.3389/fpls.2023.1135285.
5. Kumar, G., **Srivastav, M.**, Sreekanth, H.S., Kumar, C., Prakash, J., Singh, S.K. and Vinod. 2023. SSR assisted identification of mango (*Mangifera indica* L.) hybrids and development of DNA barcodes. *Indian Journal of Genetics and Plant Breeding.*, **83** (3): 1-9. doi.org/10.31742/IJGPB.83.3.9.
6. Pandey, K., Karthik, K., Singh, S.K., Vinod, Sreevathsa, R. and **Srivastav, M.** 2022. Amenability of an *Agrobacterium tumefaciens*-mediated shoot apical meristem-targeted in planta transformation strategy in Mango (*Mangifera indica* L.). *GM Crops & Food*, **13**: 1: 342–354. doi.org/10.1080/21645698.2022.2141014.
7. Ramachandra, S., **Srivastav, M.**, Singh, S.K., Mahato, A.K., Singh, N., Arumugam, N., Singh, R. and Singh, N.K. 2021. New genomic markers for marker assisted breeding in mango (*Mangifera indica* L.). *Journal of Horticultural Science & Biotechnology*, DOI:10.1080 /14620316.2021.1906760.
8. **Srivastav, M.**, Singh, S.K., Prakash, J., Singh, R., Sharma, N., Ramachandra, S., Devi, R., Gupta, A., Mahato, A.K., Jayaswal, P.K., Singh, S. and Singh, N.K. 2021. New hyper-variable SSRs for diversity analysis in mango (*Mangifera indica* L.). *Indian Journal of Genetics and Plant Breeding.*, **81** (1): 119-126. doi.org/10.31742/IJGPB.81.1.1
9. Dutta, S.K., **Srivastav, M.**, Rymbai, H., Chaudhary, Rekha, Dubey, A.K., Singh, A.K. and Lal, K. 2013. Pollen-pistil interaction studies in mango (*Mangifera indica* L.) cultivars. *Scientia Horticulturae*. **160**: 213-21. doi/abs/10.1080/14620316.2021.1906760.
10. Dutta, S.K., **Srivastav, M.**, Chaudhary, Rekha, Lal, K., Patil, P. and Singh, S. K. 2013. Low

temperature storage of mango (*Mangifera indica* L.) pollen. *Scientia Horticulturae*, 161: 193-97. doi/abs/10.1080/14620316.2009.11512484.

11. **Srivastav, M.**, Kishor, A., Dahuja, A. and Sharma, R. R. 2010. Effect of paclobutrazol and salinity on ion leakage, proline and activities of antioxidant enzymes in mango. *Scientia Horticulturae*, 125: 785-788. doi/abs/10.1080/14620316.2009.11512549.
12. Kishor, A., **Srivastav, M.**, Dubey, A. K., Singh, A. K., Sairam, R. K., Pandey, R. N., Dahuja, A. and Sharma, R. R. (2009). Paclobutrazol minimizes salt stress effects in mango (*Mangifera indica* L.). *Journal of Horticultural Science & Biotechnology*, 84 (4) 459-465. doi/abs/10.1080/14620316.2021.1906760.
13. Jha, S.K., Sethi, S., **Srivastav, M.**, Dubey, A.K., Sharma, R.R., Samuel, D.V.K. and Singh, A.K. 2010. Firmness characteristics of mango hybrids under ambient storage. *Journal of Food Engineering*, 97 (2): 208-212.
14. Sharma, Dew Kumari, Dubey, A. K., **Srivastav, M.**, Singh, A. K., Sairam, R. K. Pandey, R. N. Dahuja, A. and Kaur, C. 2011. Effect of putrescine and paclobutrazol on growth, physiochemical parameters, and nutrient acquisition of salt sensitive citrus rootstock Karna khatta (*Citrus karna* Raf.) under NaCl stress. *Journal of Plant Growth Regulation*, **34**: 191-201.
15. Singh, O. P., Usha, K., Saboki, E., **Srivastav, M.** and Singh, B. 2012. Enzymatic reactive oxygen species scavenging system in mango varieties resistant and susceptible to malformation. *Scientia Horticulturae*, **138**: 81-89.
16. Spooner, David M., Rojas, P, Bonierbale, M., Mueller, L., **Srivastav, M.**, Senalik, D. and Simon, P. 2013. Molecular Phylogeny of *Daucus*. *Systematic Botany* **38**(3): 1-8.
17. Kundu, Manoj, Dubey, A. K., **Srivastav, M.**, Malick, S., Singh, B. 2014. Effect of gamma ray irradiation and cryopreservation on pollen 1 stainability, in vitro germination and fruit set in *Citrus*. *Turkish Journal of Biology* **38**(1): 1-9.
18. Reddy, S.V.R., Sharma, R.R., Barthakur, S. and **Srivastav, M.** 2015. An efficient and rapid method for the isolation of RNA from different recalcitrant tissues of mango (*Mangifera indica* L.). *Journal of Horticultural Science & Biotechnology*, **90**(3): 285-290.
19. Mahato, A.K., Sharma, N., Singh, A., **Srivastav, M.** Singh, S.K., Singh, A.K., Sharma, T.R. and Singh, N.K. 2016. Leaf Transcriptome Sequencing for Identifying Genic-SSR Markers and SNP Heterozygosity in Crossbred Mango Variety 'Amrapali' (*Mangifera indica* L.). *PLoS One*, **11**(10): e0164325.
20. Iquebal, M.A., Jaiswal, S., Mahato, A.K., ...Singh, A.K., **Srivastav, M.** Singh, N.K. 2017. MiSNPDb: a web-based genomic resources of tropical ecology fruit mango (*Mangifera indica* L.) for phylogeography and varietal differentiation. *Scientific Reports*, 7: 14968-14976. DOI:10.1038/s41598-017-14998-2.
21. Sharma, N., Singh, A.K., Singh, S.K., Mahato, A.K., **Srivastav, M.**, Singh, N.K. 2020. Comparative RNA sequencing based transcriptome profiling of regular bearing and alternate bearing mango (*Mangifera indica* L.) varieties reveals novel insights into the regulatory mechanisms underlying alternate bearing. *Biotechnology Letters*, **42**, 1035–1050.
22. Archana, T.J., Gogoi, R., Kaur, C., Varghese, E., Sharma, R.R., **Srivastav, M.**, Tomar, M.,

- Kumar, M. and Kumar, A. 2021. Bacterial volatile mediated suppression of postharvest anthracnose and quality enhancement in mango. *Postharvest Biology & Technology*, **177**: 111525, doi.org/10.1016/j.postharvbio.2021.111525.
23. Pradhan, S., Singh, S.K., **Srivastav, M.**, Prakash, J., Lal, S.K., Padaria, J.C., Goswami, A.K. and Maurya, N.K. 2021. Poly ethylene glycol mediated in vitro screening and physico-biochemical changes induced in mango callus due to moisture stress. *Plant Cell Tissue and Organ Culture*, **145**: 155–172.
24. Prasad, K., Sharma, R.R., Asrey, R., Sethi, S., **Srivastav, M.**, Singh, D. and Arora, A. 2022. Hydrocolloid edible coating extend shelf life, reduce postharvest decay, and maintain keeping quality of mango (*Mangifera indica* L.) under ambient storage. *Journal of Food Biochemistry*, 2022;00:e14481 doi.org/10.1111/jfbc.14481.
25. Gangappa, N.D., Singh, C., Verma, M.K., Thakre, M., Svanthi, A.M., Singh, R., **Srivastav, M.**, Raghunandan, K., Chukkamettu, A.,Yadav, V. and Nagaraja, A. 2022. Assessing the genetic diversity of guava germplasm characterized by morpho-biochemical traits. *Frontiers in Nutrition*, doi:10.3389/fnut.2022.1017680.