

Dr. Ramesha A, Sc-D

Research Areas:

- ❖ Silkworm and Plant Biotechnology
- ❖ Genetics, Genomics and Molecular markers

Academic Qualifications

Level	Institute/University	Subject(s) with major field
Graduation	University of Agricultural Sciences, Bangalore (GKVK)	Agriculture
Post-Graduation	ICAR-Indian Agriculture Research Institute (ICAR-IARI), New Delhi	Genetics
Ph.D	International Centre for Genetic Engineering and Biotechnology (ICGEB), New Delhi	Plant Biotechnology

Employment Record

Designation	Institute	Place	From	To
Scientist-D	CSB-Central Muga Eri Research & Training Institute (CSB-CMERTI)	Lahdoigarh, Jorhat, Assam	26.05.2025	-
Scientist-D	CSB-Seri-Biotech Research Laboratory (CSB-SBRL)	Bengaluru	06.05.2024	13.05.2025
Scientist-C	CSB-Seri-Biotech Research Laboratory (CSB-SBRL)	Bengaluru	01.07.2019	05.05.2024
Scientist-B	CSB-Seri-Biotech Research Laboratory (CSB-SBRL)	Bengaluru	09.11.2015	30.06.2019

Postdoctoral Experience:

- University of Helsinki, Finland
- CSIR-CCMB, Hyderabad

Research Projects

#	Title of the Project with Code	Level of Association	Duration of the project
1	Study on epigenetic and autophagy modifiers on induction of haploid microspore embryogenesis in mulberry (Project cod: PIT08004 MI)	Principal Investigator (PI)	Mar. 2020 to Mar. 2023
2	Identification of powdery mildew resistant genes and validation of CAPS marker for Chalcone synthase in mulberry Spp. Caused by <i>Phyllactiniacorylea (Pers.) Karst</i> (Project code: PRP08002MI)	Principal Investigator (PI)	May 2019 to May 2022
3	Development of Densovirus resistant productive Bivoltine Silkworm breeds through Marker Assisted Selection (Project code: AIT-3582)	Principal Investigator (PI)	Sept. 2016 to Aug. 2018
4	Development and evaluation of Bidensovirus resistant silkworm hybrids developed from marker assisted breeding lines -Phase II (Project code: AIT 08005MI)	Co-Investigator (CI)	Mar. 2020 to Feb. 2023
5	Development and evaluation of Eri silkworm (<i>Samia ricini</i> Donovan) breeds/ hybrids with improved productivity (AIB-08008-MI)	Co-Investigator (CI)	Mar. 2022 to Feb. 2025
6	Profiling of lipid, protein and carbohydrate of mulberry mealybug <i>Maconellicoccus hirsutus</i> (Green) for its control (AIC08009CN)	Co-Investigator (CI)	April 2022 to Mar. 2025
7	Whole genome sequencing and functional genomics of golden silk moth <i>Antheraea assamensis</i>	Co-Investigator (CI)	Nov. 2015 to Mar. 2019
8	Identification of Cold Tolerant genes for the improvement of mulberry genotypes (Project code: PIB-3579)	Co-Investigator (CI)	June 2016-June 2018
9	Mapping and Evaluation of Mulberry Rootstock for Root rot Resistance (PRP08013MIC).	Principal Investigator (PI) from 01.03.2024 to 13.05.2025 and Co-Investigator (CI) from 14.05.2025	Mar. 2024 to Feb. 2027
10	DNA barcoding of mulberry (<i>Morus spp.</i>) germplasm and authorized mulberry varieties (PIC08019MIC)	Principal Investigator (PI) from 01.01.2025 to 13.05.2025 and Co-Investigator (CI) from 14.05.2025	Jan. 2025 to Dec. 2026

Publicatons

1. Sivakumar P*, Pandey S*, Ramesha A*, Davda JN, Singh A, Kumar C, Gala H, Subbiah V, Adicherla H, Dhawan J, Aravind L, Siddiqi I. Sporophyte-directed gametogenesis in Arabidopsis. **Nature Plants**. 2025 Mar;11(3):398-409. doi: 10.1038/s41477-025-01932-y.*Co-First author

2. Rao, M., Ramesha, A., Dubey, H., Shukla, P., Ponnuvel, K.M., Sivaprasad, V. and Suresh, K (2024). Analysis of Expression, Mutation, and Alternative Splice Variants of Candidate Genes, MLO2 and MLO6A, Involved in Powdery Mildew Susceptibility in Mulberry (*Morus* spp.). **Plant Molecular Biology Reporter**. Vol. 42, pages 784–793.
3. Mondal, R., Dubey, H., Ramesha, A. et al. Phenome, repeatome, and transcriptome analysis to comprehend the structural and functional aspects of polyploid *Morus serrata* Roxb. **Trees** 39, 88 (2025). <https://doi.org/10.1007/s00468-025-02665-3>
4. Prakash, H., Shukla, P., Ramesha, A., Arunakumar, G.S., Doss, S.G. and Ponnuvel, K.M., 2024. Evaluation of reference genes for accurate normalization of qPCR data under biotic stresses in mulberry (*Morus indica* L.). **Scientia Horticulturae**, 323, p.112507.
5. Dubey H, Pradeep AR, Neog K, Debnath R, Aneesha PJ, Shah SK, Kamatchi I, Ponnuvel KM, Ramesha A, Vijayan K, Nongthomba U, Bora U, Vankadara S, VijayaKumari KM, Arunkumar KP. Genome sequencing and assembly of Indian golden silkworm, *Antheraea assamensis* Helfer (Saturniidae, Lepidoptera). **Genomics**. 2024 May;116(3):110841.
6. Sarkar, T., Ravindra, K.N., Sidhu, G.K., Doss, S.G., Raghunath, M.K., Gayathri, T., Ramesha, A., Raghavendra, A.S., Sivaprasad, V., Mogili, T. and Arunakumar, G.S., 2024. Overexpression of phosphoenol pyruvate carboxylase gene of *Flaveria trinervia* in transgenic mulberry (*Morus* spp.) leads to improved photosynthesis rate and tolerance to drought and salinity stresses. **Plant Cell, Tissue and Organ Culture (PCTOC)**, 156(1), p.26.
7. Pawan Shukla, Harshitha Prakash, Ramesha A, Himanshu Dubey, S. Mahiba Helen, Gangavarapu Subrahmanyam, S. Manthira Moorthy, S. Gandhi Doss (2024). Identification of honeydew components excreted by pink mealy bug *Maconellicoccus hirsutus* (Green). **Indian Journal of Sericulture**
8. RaghavendarGundi, C. Vanitha, K. S. NaikTulsi, LakshmananVelusamy, A. Ramesha, K. M. Ponnuvel, MihirRabha, V. Sivaprasad, A. R. Pradeep & R. K. Mishra (2023). Molecular Marker Assisted Breeding and Development of Bidensovirus Resistant and Thermo Tolerant Silkworm (*Bombyx mori*) Hybrids Suitable for Tropical Climatic Conditions. **Agric Res** (2023). <https://doi.org/10.1007/s40003-023-00662-x>
9. Raghavendar Gundi, Tania Gupta, A. Ramesha, Vankadara Sivaprasad, Kangayam Ponnuvel. A Real-time qPCR method for early detection of *Bombyx mori* Bidensovirus (BmBDV) infection in silkworm. **Animal gene**. Volume 25, August 2022, 20013
10. Ramesha, A, Himanshu Dubey, K. Vijayan, Kangayam M. Ponnuvel, Rakesh K.

Mishra, K. Suresh. Genome wide characterization revealed MnMLO2 and MnMLO6A as candidate genes involved in powdery mildew susceptibility in mulberry (2020). **Molecular Biology Reports** 2020 Apr;47(4):2889-2900

11. Pawan Shukla¹, Ramesha A. Reddy¹, Kangayam M. Ponnuvel, Gulab Khan Rohela, Aftab A. Shabnam, Shailendra Singh Chauhan, Mrinal K Ghosh, Rakesh Kumar Mishra (2019) Selection of suitable reference genes for quantitative real-time PCR gene expression analysis in Mulberry (*Morus alba* L.) under different abiotic stresses. **Mol Biol Rep**. <https://doi.org/10.1007/s11033-019-04631-y>.
12. Tania Gupta¹, Ramesha A. Reddy^{1*}, Rakesh K. Mishra, Manthira Moorthy, Vankadara Sivaprasad, Kangayam M. Ponnuvel. Functional marker assisted improvement of productive mulberry silkworm breeds conferring resistance to *Bombyx mori* Bidensovirus (BmBDV). **Agrigene** (2018) doi.org/10.1016/j.aggene.2018.11.00
13. Mikael Brosche, Tiina Blomster, Jarkko Salojärvi, Fuqiang Cui, Nina Sipari, Johanna Leppala, Airi Lamminmaki, Gloria Tomai, Shaman Narayanasamy, Ramesha A. Reddy, Markku Keinanen, Kirk Overmyer, Jaakko Kangasjarvi (2014). Transcriptomics and Functional Genomics of ROS-Induced Cell Death Regulation by RADICAL-INDUCED CELL DEATH1. **PLoS Genet** 10(2): e1004112. doi:10.1371/journal.pgen.1004112.
14. Julia P. Vainonen, Pinja Jaspers, Michael Wrzaczek, Airi Lamminmäki, Ramesha A. Reddy, Lauri Vaahtera, Mikael Brosché and Jaakko Kangasjärvi (2012). RCD1–DREB2A interaction in leaf senescence and stress responses in *Arabidopsis thaliana*. **Biochem. J.** 442 (573–581).
15. Srikrishna Mahanty, Tanushri Kaul, Prachi Pandey, Ramesha A. Reddy, Garladinne Mallikarjuna, Chinreddy S. Reddy, Sudhir K. Sopory, Malireddy K. Reddy (2012). Biochemical and molecular analyses of copper–zinc super oxide dismutase from a C₄ plant *Pennisetum glaucum* reveals an adaptive role in response to oxidative stress. **Gene** 505 (2): 309-311.
16. Tanushri Kaul, Palakolanu Sudhakar Reddy, Srikrishna Mahanty, V. Thirulogachandar, Ramesha A. Reddy, Bhumesh Kumar, Sudhir K. Sopory, Malireddy K. Reddy. (2011). Biochemical and molecular characterization of stress-induced β -carbonic anhydrase from a C(4) plant, *Pennisetum glaucum*. **J Plant Physiol.** April 15:168(6):601-10.
17. Pinja Jaspers, Kirk Overmyer, Michael Wrzaczek, Julia P. Vainonen, Tiina Blomster, Jarkko Salojärvi, Ramesha A. Reddy, Jaakko Kangasjarvi. (2010). The RST and PARP-like domain containing SRO protein family: analysis of protein structure, function and conservation in land plants. **BMC Genomics** 11:170.
18. Ramesha A. Reddy, Bhumesh Kumar, Palakolanu Sudhakar Reddy, Rabi N. Mishra, Srikrishna Mahanty, Tanushri Kaul, Suresh Nair, Sudhir K. Sopory, Malireddy K. Reddy. (2009). Molecular cloning and characterization of genes encoding *Pennisetum glaucum* ascorbate peroxidase and heat-shock factor: Interlinking oxidative and heat-stress

responses. **J Plant Physiol.** Oct 15:166(15):1646-59.

19. Pinja Jaspers, Tiina Blomster, Mikael Brosché, Jarkko Salojärvi, Reetta Ahlfors, Julia P. Vainonen, Ramesha A. Reddy, Richard Immink, Gerco Angenent, Franziska Turck, Kirk Overmyer, Jaakko Kangasjärvi. (2009). Unequally redundant RCD1 and SRO1 mediate stress and developmental responses and interact with transcription factors. **The Plant J.** Oct; 60(2):268-79.
20. Mishra, R.N., Ramesha, A., Kaul, T., Nair, S., Sopory, S.K., Reddy, M.K. (2005). A modified cDNA subtraction to identify differentially expressed genes from plants with universal application to other Eukaryotes. **Anal Biochem.** Oct 1; 345 (1): 149-57.

Book Chapters

1. Vijayan, K., Arunakumar, G.S., Gnanesh, B.N., Sangannavar, P.A., Ramesha, A., Zhao, W. (2022). Genomic Designing for Biotic Stress Resistance in Mulberry. In: Kole, C. (eds) Genomic Designing for Biotic Stress Resistant Technical Crops. Springer, Cham. https://doi.org/10.1007/978-3-031-09293-0_8
2. Thammineni Chakradhar., **Ramesha A. Reddy** and Thummala Chandrasekar (2019). Protein Kinases and Phosphatases in Stress Transduction: Role in Crop Improvement: Plant Signaling Molecules. (pp. 533–547). Elsevier. <https://doi.org/10.1016/b978-0-12-816451-8.00033-2>
3. Thammineni Chakradhar, Srikrishna Mahanty, **Ramesha A. Reddy**, Kummari Divya, Palakolanu Sudhakar Reddy, and Mali reddy K. Reddy. (2017). Biotechnological perspective of reactive oxygen species (ROS)-mediated stress tolerance in plants, in Reactive Oxygen Species and Antioxidant Systems in Plants: Role and Regulation under Abiotic Stress. (Singapore: Springer ;), 53–87
4. Palakolanu Sudhakar Reddy, ThammineniChakradhar, **Ramesha A. Reddy**, Rahul B. Nitnavare, SrikrishnaMahanty, and Malireddy K. Reddy. "Role of Heat Shock Proteins in Improving Heat Stress Tolerance in Crop Plants." In Heat Shock Proteins and Plants, pp. 283-307. Springer, Cham, 2016.