

# KANMANI BHARATHI J

## Researcher

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## PORTFOLIO

**Scopus ID** : 57790937300  
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## EXECUTIVE SUMMARY

I am a dedicated life sciences researcher with a strong background in plant biotechnology and tissue culture-based research, supported by extensive hands-on experience in micropropagation, aseptic techniques, contamination control, and protocol standardization. My research training emphasizes well-designed experiments, data-driven interpretation, and optimization of in vitro culture systems for reproducibility and scale-up. I have actively worked on developing and standardizing tissue culture protocols for multiple medicinal plant species, integrating experimental precision with basic statistical and bioinformatics tools for data analysis and visualization. I am adaptable, quick to learn new methodologies, and comfortable working in interdisciplinary laboratory environments. I aspire to contribute to innovation-driven, application-oriented plant biotechnology research while strengthening my leadership, technical expertise, and scientific communication skills.

## RESEARCH EXPERIENCE

### Ph.D. Researcher [Annamalai University, 2021 - 2025]

- Investigated the antidiabetic properties of natural compounds from medicinal plants.
- Optimized extraction methods
- Conducted analytical analysis to identify potential drug candidates.
- Studied glucose uptake and insulin response mammalian cell lines.
- In silico approaches
- Micropropagation of medicinal plants.

### Supporting Researcher [Annamalai University, 2023-2024]

- Worked on microbial degradation of plastics using bacteria.

## MISCELLANEOUS EXPERIENCE

- Founder & Research Consultant [Research Hub, 2024 – Present]
- Content Creator [INSIGHTS – 2021 – Present]

## TECHNICAL SKILLS

- **Molecular Techniques:** PCR, molecular markers, protein analysis (western blotting).
- **Biotechnology:** Micropropagation, somatic hybridization, and cell line studies.
- **Natural products:** Phytochemical analysis and extraction, metabolite profiling.
- **Instrumentation & Analysis:** LC-MS, GC-MS, spectroscopy.
- **Computational Techniques:** Molecular docking, geo statistics (basics), bioinformatics (basics).
- **Graphical Illustration:** Adobe creative tools, BioRender, Canva affinity.
- **Engineering & Electronics:** Automation tools, microcontrollers, custom research instrument design.
- **Software:** Microsoft tools, language (R and basics python), Statistical tools (GraphPad Prism, Origin, SPSS, R studio and shiny).

- Knowledge on integrating AI tools to research.

## EDUCATION

<b>Doctor of Philosophy (Ph.D.) in Plant Molecular Biology and Biotechnology,</b> Annamalai University, Chidambaram, Tamil Nadu, India.	Graduated, Sep 2025 OGPA: 9.25
<b>Master's in Plant Molecular Biology and Biotechnology,</b> Annamalai University, Chidambaram, Tamil Nadu, India.	Graduated, May 2021 OGPA: 9.26
<b>Bachelor's in Agriculture (Hons),</b> Annamalai University, Chidambaram, Tamil Nadu, India.	Graduated, May 2019 OGPA: 8.42
<b>Higher Secondary Education (HSC)</b> A.C.S. Metric Higher Secondary School, Arni, Tamil Nadu, India.	Graduated, March 2015 Percentage: 91.66 %
<b>Secondary School Education (SSLC)</b> Subramania Sastriar Higher Secondary School, Arni, Tamil Nadu, India.	Graduated, March 2013 Percentage: 89.80 %

## THESIS

### Doctor of Philosophy – Thesis

Evaluation of *in vitro* and *in silico* antidiabetic effects of *Costus pictus* D. Don. Ex. Lindl. and *Dodonaea viscosa* (L.) Jacq.

### Master's – Thesis

Studies on *in vitro* regeneration protocol in *Costus speciosus* - a high valued insulin herb

## PUBLICATIONS

Poornalakshmi, M., **Kanmani Bharathi, J.**, Sai Prathyusha Neelam, S., Gurumoorthy, P., Divya, M., Prakash., & Anandan, R. (2026). Development of an efficient in vitro system for micropropagation and regeneration of *Justicia adhatoda*, *Sida acuta*, *Pimenta dioica*, and *Premna integrifolia*. *Discover Plants*, 3(13), 1-7. <https://doi.org/10.1007/s44372-026-00477-4>

Akash, K., Parthasarathi, R., **Kanmani Bharathi, J.**, & Elango, R. (2025). Exploring the Role of Microbes in the Biodegradation of Plastic Waste: Mechanisms, Interactions, and Implications for Sustainable Waste Management-A Review. *Water, Air, & Soil Pollution*, 236(12), 1-49. <https://doi.org/10.1007/s11270-025-08343-x>

**Kanmani Bharathi, J.**, and Prakash, M. (2024). Estimation of total flavonoids, phenols, alkaloids, tannins and *in vitro* antioxidant activity of *Costus pictus* D. Don. ex. Lindl. and *Dodonaea viscosa* (L.) Jacq. leaf extracts. *Chemical Papers*, 1-15. <https://doi.org/10.1007/s11696-024-03802-x>

**Kanmani Bharathi, J.**, and Prakash, M. (2024). Phytochemical screening and quantitative analysis, FTIR and GC-MS analysis of *Costus pictus* D. Don ex Lindl. Leaf extracts-A potential therapeutic herb. *Journal of the Indian Chemical Society*, 101(11), 101362. <https://doi.org/10.1016/j.jics.2024.101362>

**Kanmani Bharathi, J.**, Suresh, P., Prakash, M. A. S., & Muneer, S. (2024). Exploring recent progress of molecular farming for therapeutic and recombinant molecules in plant systems. *Heliyon*, 10, e37634. <https://doi.org/10.1016/j.heliyon.2024.e37634>

Priyadarshini, B., Anandan, R., Manikandan, S., **Kanmani Bharathi, J.**, and Prakash, M. (2023). Evaluation of black gram (*Vigna mungo* (L.) Hepper) genotypes for coastal saline tolerance using microsatellite markers. *Brazilian Journal of Botany*, 1-23. <https://doi.org/10.1007/s40415-023-00955-z>

Bhuvaneshwari, R., Johnny, S.I., **Kanmani Bharathi, J.**, Joshi, J.L., and Anandan, R. (2023). In vitro regeneration through organogenesis in *Costus igneus* –an important herbal insulin plant. *Research Journal of Biotechnology*, 18(3), 70-78. <https://doi.org/10.25303/1803rjbt70078>

**Kanmani Bharathi, J.**, Anandan, R., Benjamin, L. K., Muneer, S., & Prakash, M. A. S. (2022). Recent trends and advances of RNA interference (RNAi) to improve agricultural crops and enhance their resilience to biotic and

abiotic stresses. *Plant Physiology and Biochemistry*, 194, 600-618.  
<https://doi.org/10.1016/j.plaphy.2022.11.035>

**Kanmani Bharathi, J.**, Anandan, R., Rameshkumar, S., Menaka, K., & Prakash, M. A. S. (2022). Development of an efficient in vitro regeneration system in *Costus speciosus*-an important herbal insulin plant. *South African Journal of Botany*, 149, 468-475. <https://doi.org/10.1016/j.sajb.2022.06.031>

Jeevitha, S., **Kanmani Bharathi, J.**, Saravanan, K. R., Prakash, M., Murugan, S., & Anandan, R. (2022). Genetic diversity and marker trait association for yellow mosaic virus disease in Green gram, *Vigna radiata* (L.) Wilczek. *Indian Journal of Experimental Biology*, 60, 481-489.

Prakash, M., Sunilkumar, B., **Kanmani Bharathi, J.**, & Viswanathan, C. (2022). Root dynamics and drought stress management in plants—An overview. *Indian Journal of Experimental Biology*, 60, 449-455.

**Kanmani Bharathi, J.**, & Prakash, M. (2021). In vitro propagation of pharmaceutical and endangered medicinal plants-a mini review. *Journal of Current Opinion in Crop Science*, 2(4), 433-440.

## BOOK CHAPTERS

**Kanmani Bharathi, J.**, and Prakash, M. (2024). Micropropagation of vetiver grass – A review. *Micropropagation of Medicinal Plants: Bentham books*, 1(1), 283-296.  
<https://doi.org/10.2174/9789815196146124010017>

## CONFERENCES

International Conference on “Recent Trends in Biodiversity Conservation” (ICRTBC-2023) conducted by PG & Research Department of Zoology, Periyar Arts College, Cuddalore held on 12th April, 2023.

## AWARDS/HONORS

**Dr. A.P.J. Abdul Kalam Young Scientist Award** – “9<sup>th</sup> National Conference on Addressing Environmental challenges in Agricultural Production” held at Pushkaram College of Agriculture Sciences, Tamil Nadu, India, on 29<sup>th</sup> December, 2023.

University Research Studentship – Directorate of Student Support and Progression, Annamalai University, India [2023-2024].

## WORKSHOPS

**AI-Assisted Drug Designing** organized by Barcode Biotechnology on 30<sup>th</sup> January, 2026.

**Five-Day Online National Workshop on “AI-Digital Boot Camp”** organized by PMMMNMTT and TNTEU, Chennai during 30<sup>th</sup> June – 4<sup>th</sup> July, 2025.

**Modelling Amorphous Solid Dispersion Release Mechanisms** organized by Chemistry world and Schrodinger, 10<sup>th</sup> June, 2025.

PPV & FRA sponsored workshop on “**Training cum Awareness Programme on protection of Plant Varieties and Farmers’ Rights Act 2001**” organized by Tamil Nadu Rice Research Institute, Aduthurai, Tamil Nadu on 24<sup>th</sup> January, 2025.

**Author Workshop: Publishing Open Access in Wiley Journals with Expert Tips for Authors** organized by Wiley Research Training, 22<sup>nd</sup> May, 2025.

**Biofertilizer and Composting Technology** conducted by Shanmuga Industries Arts & Science College, Tamil Nadu, India, on 14<sup>th</sup> March 2024.

**Apiculture Training Program** conducted by Tamilnadu State Council for Science and Technology and Department of Entomology, Annamalai University, India, on 18 – 22<sup>nd</sup> December, 2023.

## CONFERENCES/WEBINARS

International webinar on “**Costal Agriculture – An Interactive Webinar**” conducted by Faculty of Agriculture, Annamalai University on 28<sup>th</sup> August, 2020.

International webinar on “**Biodiversity Conservation and Mitigation of Impacts of Climate Change**” conducted by Faculty of Agriculture, Annamalai University on 26<sup>th</sup> August, 2020.

International webinar on “**OMICS in Crop Improvement**” conducted by Faculty of Agriculture, Annamalai University on 21<sup>th</sup> August, 2020.

Webinar on “**Nurturing Future Biotech Industry Professionals**” organized by Division of Biotechnology, Karunya Institute of Technology and Sciences, Coimbatore held from 3-8<sup>th</sup> June, 2024.

National webinar on “**Hybrid Seed Production Using Two-Line Breeding**” organized by School of Agricultural Sciences, Bharath Institute of Higher Education and Research, Chennai on 16<sup>th</sup> February, 2022.

Webinar on “**Plant Genomics and Phytotherapy**” organized by The Biomics on 12<sup>th</sup> September, 2020.

Webinar on “**Molecular Engineering: Tissue Engineering and Organ Printing and Nucleotide Excision repair in *Mycobacterium tuberculosis***” organized by The Biomics on 05<sup>th</sup> September, 2020.

Webinar on “**Medical Health Care: BCG, a Century Old Vaccine against CoVID19: Science and Sense and Microbial Enzymes in Healthcare**” organized by The Biomics on 29<sup>th</sup> August, 2020.

Webinar on “**Demystifying COVID19: Tools of Bioinformatics for COVID19 Resarch and Immunology, Immunopathology and Immune Escapism of Viral Infection**” organized by The Biomics on 22<sup>th</sup> August, 2020.

Webinar on “**Regulatort Genomics and Epigenomics: Technologies and Applications**” organized by The Biomics on 15<sup>th</sup> August, 2020.

Webinar on “**DNA Damage Responses, Cancer Susceptibilities and Therapeutics**” conducted by Department of Biochemistry and Biotechnology, Annamalai University on 20<sup>th</sup> July, 2020.

Webinar on “**Nourish Immunity Beat Pandemic**” organized by Mather Terasa Group of Institution, Pudukkottai, Tamil Nadu on 14<sup>th</sup> July, 2020.

## PEER REVIEWES

Nusantara Bioscience ISEA Journal of Biological Science – 1 (2024)

South African Journal of Botany (Elsevier) – 2 (Dec 2024; May 2025)

Journal of Plant Biochemistry and Biotechnology – 3 (May 2024; Jul 2024; Nov 2025)

## LANGUAGES

- English
- Tamil

## PASSIONS & PURSUITS

- Tech enthusiast
- Science communicator
- Script writer
- Art of cooking
- Multimedia enthusiast

## **REFERENCE**

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