

Duraivadivel P

Environmental Biotechnology Lab, Centre for Rural Development and Technology

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Google Scholar Profile: https://scholar.google.co.in/citations?hl=en&user=i1VfNYgAAAAJ&view_op=list_works&sortby=pubdate

SUMMARY:

I'm Durai, a 32-year-old IIT-Delhi research scholar with 7+ years of experience in microbial dynamics in fermented products and plant rhizospheres, bioprospecting of plant and microbial secondary metabolites, etc. Recently, I have submitted my PhD thesis on the scientific validation of a traditional bioformulation known as Jeevamrutha, as well as the impact of Jeevamrutha application on soil and plant health. As an avid researcher, highly motivated and confident team player with effective communication skills, leading qualities, strong analytical skills, and technical writing/editing expertise. Seeking a challenging position where I can use my knowledge, expertise, and skills, which will assist my career development.

RESEARCH

EXPERIENCE:

Senior Research Fellow

2018-2022

Environmental Biotechnology Lab
Centre for Rural Development and Technology
Indian Institute of Technology, Delhi, India
Principal investigator: Dr. Hariprasad P., M.Phil., Ph.D.

Junior Research Fellow

2016-2018

Environmental Biotechnology Lab
Centre for Rural Development and Technology
Indian Institute of Technology, Delhi, India
Principal investigator: Dr. Hariprasad P., M.Phil., Ph.D.

Project Team Lead

09.2020-12.2020

Project title: *Validation of the product BioMix-I* and MCI* developed by CPB for Crop Residue Management (Stubble degradation)*

Environmental Biotechnology Lab
Centre for Rural Development and Technology
Indian Institute of Technology, Delhi, India
Principal investigator: Dr. Hariprasad P., M.Phil., Ph.D.

Project Team Lead

01.2021-06.2021

Project title: *To evaluate the potential and mode of action of Farmics products in improving plant growth and health*

Environmental Biotechnology Lab
Centre for Rural Development and Technology
Indian Institute of Technology, Delhi, India
Principal investigator: Dr. Hariprasad P., M.Phil., Ph.D.

Project Team Lead**07.2021-12.2021**

Project title: *To evaluate the potential of selected biomass as a source of plant nutrients focusing on developing a liquid nutrient solution for agriculture applications*

Environmental Biotechnology Lab
Centre for Rural Development and Technology
Indian Institute of Technology, Delhi, India
Principal investigator: Dr. Hariprasad P., M.Phil., Ph.D.

Junior Project Assistant**2014-2015**

Project title: *Isolation and characterization of bacterial strains and their enzymes with lignolytic potential from Western Ghats of India*

Environmental Biotechnology Lab
Centre for Rural Development and Technology
Indian Institute of Technology, Delhi, India
Principal investigator: Dr. Hariprasad P., M.Phil., Ph.D.

Summer Research Fellow (IASc)**05.2013-07.2013**

Project title: *An investigation of the role of MTHFRC667T, MTHFRA1298C, MSA2765G gene polymorphism in cervical cancer pathogenesis*

National Institute of Biomedical Genomics, West Bengal, India
Principal investigator: Prof. Sharmila Sengupta

EDUCATION:**Ph.D. Environmental Biotechnology**

2015-2022 (Thesis Submitted)

Indian Institute of Technology, Delhi, India

- Thesis topic: *Scientific Validation of Jeevamrutha for Sustainable Agriculture*
- Advisor:
Dr. Hariprasad P., M.Phil., Ph.D.
Environmental Biotechnology Lab
Centre for Rural Development and Technology

M. Tech, Biotechnology

2012-2014

School of Biotechnology and Genetic Engineering

Bharathidasan University, Tamil Nadu, India

- Dissertation topic: *Isolation and characterization of rhizoplane bacteria associated with free-floating aquatic plant – Eichhornia crassipes (Mort.) Solms*
- Advisor:
Dr. Hariprasad P., M.Phil., Ph.D.
Environmental Biotechnology Lab
Centre for Rural Development and Technology
Indian Institute of Technology, Delhi, India

B. Tech, Biotechnology

2008-2012

School of Biotechnology and Genetic Engineering

Bharathidasan University, Tamil Nadu, India

- Dissertation topic: *Production of Monoclonal Antibody against AflatoxinB1*
- Advisor:
Dr. G. Venkateshwaran., M.Phil., Ph.D.
Food Microbiology Lab
Department of Food Microbiology
Central Food Technological Research Institute, Mysore, India

SKILLS:

Microbiology

- Isolation, identification, and characterization.
- Spreading, Pouring, Streaking, Gram's Staining, Biochemical reactions etc.
- Bacterial growth curve & minimum inhibitory concentration test.
- Antibiotic sensitivity testing for bacteria

Molecular Techniques:

- DNA isolation and purification
- Protein extraction, purification and quantification
- PCR (qPCR and Colony PCR)
- Gel electrophoresis, DGGE, and SDS-PAGE

Analytical Techniques:

- HPLC, Flash Chromatography, Column Chromatography
- UV-spectrophotometry, ELISA, TLC, Extraction of secondary metabolites
- SEM-EDAX and TEM

Field experience

- Extensive field work experience of water, sediment, soil, plants, animal waste, and biogas slurry sampling from freshwater rivers, urban sewage drains, Industrial drains, common effluent treatment plants, and Industrial sites, Gaushala, and Biogas plant, etc.

CONFERENCES:

- AAFS 2022, UAS, Bengaluru, ICAR-New Delhi, AIASA-New Delhi, India. 2022
- FEMS Conference on Microbiology 2022, Belgrade, Serbia. 2022
- 5th BioSangam Conference: Emerging trends in Biotechnology, MNIT, Allahabad, India. 2022
- Open house, IIT Delhi. 2017
- Open house, IIT Delhi. 2016

AWARDS:

Best poster award

- Emerging trends in Biotechnology at BioSangam 2022 held at NNIT, Allahabad, India. 2022

JOURNAL PUBLICATIONS

Duraivadivel, P., Kongkham, B., Satya, S., & Hariprasad, P. (2022). Untangling microbial diversity and functional properties of Jeevamrutha. **Journal of Cleaner Production**, 369, 133218. <https://doi.org/10.1016/j.jclepro.2022.133218>

Swain, A., Santhoshkannada, A. N., **Prabakaran, D.**, Choudhir, G., & Puttaswamy, H. (2021). Phytochemical and Pharmacological Exploration of *Cyperus articulatus* as a Potential Source of Nutraceuticals and Drug Ingredients. Indian **Journal of Pharmaceutical Education and Research**, 55(4), 1084-1095.

Pattanaik, L., **Duraivadivel, P.**, Hariprasad, P., & Naik, S. N. (2020). Utilization and re-use of solid and liquid waste generated from the natural indigo dye production process—A zero waste approach. **Bioresource technology**, 301, 122721. <https://doi.org/10.1016/j.biortech.2019.122721>

Duraivadivel, P., Gowtham, H. G., & Hariprasad, P. (2020). Co-occurrence of functionally diverse bacterial community as biofilm on the root surface of *Eichhornia crassipes* (Mart.) Solms-Laub. **Science of The Total Environment**, 714, 136683. <https://doi.org/10.1016/j.scitotenv.2020.136683>

Gowtham, H. G., **Duraivadivel, P.**, Ayusman, S., Sayani, D., Gholap, S. L., Niranjana, S. R., & Hariprasad, P. (2021). ABA analogue produced by *Bacillus marisflavi* modulates the physiological response of *Brassica juncea* L. under drought stress. **Applied Soil Ecology**, 159, 103845. <https://doi.org/10.1016/j.biortech.2019.122721>

Kongkham, B., **Prabakaran, D.**, & Puttaswamy, H. (2020). Opportunities and challenges in managing antibiotic resistance in bacteria using plant secondary metabolites. **Fitoterapia**, 104762. <https://doi.org/10.1016/j.fitote.2020.104762>

Ayusman, S., **Duraivadivel, P.**, Gowtham, H. G., Sharma, S., & Hariprasad, P. (2020). Bioactive constituents, vitamin analysis, antioxidant capacity and α -glucosidase inhibition of *Canna indica* L. rhizome extracts. **Food Bioscience**, 35, 100544. <https://doi.org/10.1016/j.fbio.2020.100544>

Tiwari, G., **Duraivadivel, P.**, & Sharma, S. (2018). 1-Aminocyclopropane-1-carboxylic acid deaminase producing beneficial rhizobacteria ameliorate the biomass characters of *Panicum maximum* Jacq. by mitigating drought and salt stress. **Scientific reports**, 8(1), 1-12. <https://doi.org/10.1038/s41598-018-35565-3>

Gowtham, H. G., **Duraivadivel, P.**, Hariprasad, P., & Niranjana, S. R. (2017). A novel split-pot bioassay to screen indole acetic acid producing rhizobacteria for the improvement of plant growth

in tomato [*Solanum lycopersicum* L.]. **Scientia Horticulturae**, 224, 351-357.
<https://doi.org/10.1016/j.scienta.2017.06.017>

Prakash, K., Naik, S. N., **Vadivel, D.**, Hariprasad, P., Gandhi, D., & Saravanadevi, S. (2018). Utilization of defatted sesame cake in enhancing the nutritional and functional characteristics of biscuits. **Journal of Food Processing and Preservation**, 42(9),13751.
<https://doi.org/10.1111/jfpp.13751>

Hariprasad, P., **Duraivadivel, P.**, Snigdha, M., & Venkateswaran, G. (2013). Natural occurrence of aflatoxin in green leafy vegetables. **Food chemistry**, 138(2-3), 1908-1913.
<https://doi.org/10.1016/j.foodchem.2012.11.093>

REFERENCES:

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Dr. Vijayaraghavan M Chariar

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