

Dr. CHANDINI P. K.

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PROFESSIONAL SUMMARY

Dynamic and research-driven Environmental Scientist with a proven track record at the Inter University Centre for Organic Farming and Sustainable Agriculture. Expert in pesticide degradation mechanisms, ecotoxicology, and ecological monitoring, leveraging advanced laboratory instrumentation and GIS spatial data mapping for impactful research. Adept at leading interdisciplinary research, organizing national conferences, and collaborating with diverse teams to drive innovative solutions in sustainable agriculture.

CORE AREAS OF EXPERTISE

- **Environmental Toxicological Dynamics:** Pesticide degradation mechanisms, metabolic resistance tracking, toxicological dynamics, and biological biomarker assessments.
- **Geochemical & Contaminant Transport:** Speciation, fractionation, and spatial distribution mapping of heavy metals (including Mercury) in Arctic and estuarine sediment cores.
- **Advanced Laboratory Instrumentation & Analysis:** CVAFS (Cold Vapor Atomic Fluorescence Spectroscopy), UV-Visible Spectrophotometer, Flame Photometer, pesticide residue extraction, and wet lab physico-chemical profiling.
- **Ecological Monitoring & Digital Mapping:** Spatial data handling, Digital Mapping, GIS, Remote Sensing platforms, and eco-informatics applications.
- **Microbiology & Bioremediation:** Isolation, identification, and handling of targeted pesticide-resistant bacterial communities from agricultural soils.

RESEARCH & PROFESSIONAL EXPERIENCE

Inter University Centre for Organic Farming and Sustainable Agriculture (IUCOFSA)

Chief Minister's Nava Kerala Post Doctoral Fellow (CMNPF) | 01/2024 – 01/2026

Project Title: *Evaluation of super pest and impact assessment of major agroecosystems of Kerala: A biomarker approach.*

- Evaluated super pest impacts on major agroecosystems of Kerala using comprehensive biomarker approaches.
- Facilitated policy and technical discussions on sustainable agriculture practices among community members and researchers.
- Developed high-impact educational materials and extension literature promoting eco-friendly farming methods.

EDUCATION

- **Ph.D. in Environmental Studies** | Cochin University of Science and Technology (CUSAT)
 - **Thesis Title:** *Ecotoxicological assessment and biomonitoring of pesticide contamination in the mango plantations of Muthalamada, Palakkad District, Kerala, India*
- **M.Phil. in Ecological Informatics** | Digital University Kerala (formerly IIITM-K)
 - **Dissertation Title:** *Geochemistry and spatial distribution of mercury in the sediments of Kongsfjorden, Arctic*
 - **Grade:** First Class (7.83 CGPA)
- **M.Sc. in Environmental Science** | Mahatma Gandhi University, Kottayam
 - **Dissertation Title:** *A comparative study of banana and rice eco-systems of Wayanad district*

- **Grade:** First Class (60%)
- **B.Sc. in Zoology** | *St. Peter's College, Kolenchery*
 - **Grade:** Second Class (59%)

PUBLICATIONS

1. **Kuttappan, C.P.**, Narayanan, S.P., Pillai, S.R.N., Sivalingam, R., Kannegowda, N., Kochu, J.K., Sadanandan, G.O., and Shappumkunnath, M.K. (2025). A biomarker assessment of pesticide toxicity in endemic, native peregrine, and invasive earthworm species from the Muthalamada mango plantations, Kerala, India. *Natural Built Social Environment Health*, 1, 3.
2. **Chandini, P.K.** and Mahesh Mohan (2024). Evolution of super pest in the agroecosystems of Kerala: an upcoming threat. *Current Science*, 127, 6.
3. Jayasooryan, K.K. and **Chandini, P.K.** (2024). Emerging human-otter conflicts in the wetlands and rivers of Kerala, India. *Current Science*.
4. Maneesh Kumar, Kartha, S.K., Rajathy, A.R., Ratheesh Kumar, C.S., **Chandini, P.K.**, Vidya, P.V., Madhurai, P.K., Sajith, K.S., and Anamika, S. (2023). Characterization of suspended microplastics in surface waters of Chalakudy River, Kerala, India. *Chemistry and Ecology*, 1-20.
5. **Chandini, P.K.** and Rajathy Sivalingam (2022). Presence of chemical nerve agent in agriculture lands of India: critical information on pesticide degradation in the environment? *International Journal of Science and Research*, 11, 449-456.
6. Jayasooryan, K.K., Ramasamy, E.V., **Chandini, P.K.**, and Mahesh Mohan (2021). Fractionation and accumulation of selected metals in a tropical estuary, southwest coast of India. *Environmental Monitoring and Assessment*, 193, 220.
7. **Chandini, P.K.**, Jayasooryan, K.K., Gayathri, O.S., Sharon Mathew, and Rajathy Sivalingam (2021). An Assessment of Earthworm Population Density of different Habitat Types in a Mango Cultivation Region of Palakkad District, Western Ghats. *International Journal for Research in Applied Science & Engineering Technology (IJRASET)*, 9, IV.
8. **Chandini, P.K.**, Sebimol Shaji, and Rajathy Sivalingam (2018). A study on the accumulation of heavy metals on the sediments and shrimps of Cochin estuary. *Indian Journal of Science and Research*, 18(2), 92-96.
9. Mahesh Mohan, **Chandini, P.K.**, Krishnan, K.P., Gopikrishna, V.G., Sajin Kumar, K.S., and Kannan, V.M. (2017). Mercury Fractionation in the Sediments of Kongsfjorden, an Arctic Fjord, Svalbard. *International Journal of Marine Science*, 7(26), 260-271.
10. **Chandini, P.K.** and Rajathy Sivalingam (2016). Cancer risk from pesticides in mango orchards. *Current Science*, 110.
11. **Chandini, P.K.**, Jayasooryan, K.K., Rinoy Varghese, Sreedharan, K., and Smitha, K.P. (2014). Endosulfan resistance profile of soil bacteria and potential application of resistant strains in bioremediation. *Present Environment and Sustainable Development*, 8.1.

CONFERENCE PRESENTATIONS & ACADEMIC DEFENSE

- **International Presentation (2025):** "The Rise of The Super Pest: Investigating Insecticide Resistance in Tea Mosquito Bug (TMB)" – International Conference on Towards a Sustainable Future: Scientists and Sages Meet, Mahatma Gandhi University, Kottayam (10/06/2025).
- **National Presentation (2017):** Presented research paper in the *Environmental Science, Sanitation and Waste Management* session of the 27th Swadeshi Science Congress, Amrita Vishwa Vidyapeetham, Kollam.
- **Technical Defense (2017):** Presented paper at the *International Conference on Potential Impact of Pesticides on Environment and Human Health (ICPIPEHH-2017)*, Dayananda Sagar University, Bangalore.

AWARDS, MEMBERSHIPS & PEER SERVICE

- **Research Excellence Award:** Conferred the *Excellent Paper Award* at the 6th International Conference on Solid Waste Management, Jadavpur University, Kolkata (2016).
- **Active Peer Reviewer:** Evaluator for journals including *Current Science*, *International Journal of Environmental Science*, *Environment Development and Sustainability*, *Bulletin of National Research Centre*, and *Journal of Pharmaceutical Research International*.
- **Science Communication & Public Outreach:** Published educational research analyses across regional networks, including *Shasthra Gathi (KSSP)*, *Shasthra Keralam*, and *Thalir* magazines.
- **Environmental Leadership:** Official nominated member of the digital environmental platform *Garcinia Foundation* (Mahatma Gandhi University).

EVENT ORGANIZATION & ACADEMIC SERVICE

- **Coordinator (2017):** One-Day National Seminar on *Environmental Degradation and Climate Change - A Holistic Approach*, School of Environmental Studies, CUSAT.
- **Coordinator (2017):** One-Day National Conference on *Zero Effluent Discharge Technology*, School of Environmental Studies, CUSAT.

ACADEMIC & PROFESSIONAL REFERENCES

- **Dr. Mahesh Mohan** | Assistant Professor, School of Environmental Sciences, Mahatma Gandhi University, Kottayam, Kerala | 📞 +91 9446121596 | ✉️ maheshmohan@mgu.ac.in
- **Dr. Shijo Joseph** | Assistant Professor, School of Environment, Kerala University of Fisheries and Ocean Studies (KUFOs), Ernakulam | 📞 +91 9562127128 | ✉️ shinjonrsa@gmail.com
- **Dr. Rakesh P. S.** | Senior Scientist, CSIR-National Institute of Oceanography (NIO), Mumbai | 📞 +91 9619333404 | ✉️ rakesh@nic.org