RAHUL ARVIND JAMDADE (PHD, POST-DOC (UAE))

ASST. PROFESSOR, DEPARTMENT OF ZOOLOGY,
YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD.

● 📞 +91 8501945016 ● ✉ rajamdade@gmail.com
https://rajamdade.blogspot.com/p/profile.html

SUMMARY OF QUALIFICATIONS

Self-motivated and diligent professional with over 5+ years of post-doctoral research experience in molecular biology. Exceptional expertise with an extensive research background in molecular biology techniques, bioinformatics and genomics. Demonstrated DNA barcoding for species identification by generating 2000+ multi-locus DNA barcodes with 10+ publications in leading journals. Highly organized, collaborative professional and strategic planner with project management skills. Ability to work accurately, independently as well as part of a team.

EDUCATION

Ph.D. in Zoology (2009 – 2014), Paul Hebert Center for DNA Barcoding and Biodiversity Studies, Dr. Babasaheb Ambedkar Marathwada University, Maharashtra, India.

Thesis entitled: Molecular taxonomy and genetic biodiversity of freshwater fishes from Narmada riverine system using mitochondrial COI gene.

Bachelor in Education (2008-2009), Shivaji University, Maharashtra, India.

Master of Science (2006 – 2008), Shivaji University, Maharashtra, India.

Bachelor of Science (2003 – 2006), Shivaji University, Maharashtra, India.

RESEARCH EXPERIENCE

Sharjah Seed Bank and Herbarium, Environment and Protected Areas Authority, United Arab Emirates (UAE) (May 2017 – July 2022),

Senior Research Specialist (Post-doctoral Researcher)

Research summary:

- Generating the multi-locus DNA barcode reference library (1000+ sequences) for the plants (250+ species) of the United Arab Emirates
- DNA barcoding of the medicinal plant species (250+ sequences, to assist pharmacovigilance across the UAE.
- Resolving cryptic species via multi-locus marker-based delimitation assisted by a supervised machine learning approach.
- Creating a framework for the DNA bank.
- Genome-wide identification of mitogen-activated protein (MAP) kinase gene family in Castor.
- Demonstrating the AI-based machine learning approach for evaluating the Arabian plant barcodes and integrating the models in the DNA barcoding workflow for resolving the UAE plant species.

Roles and Responsibilities:

- Developing or strengthening Laboratory Infrastructure.
- Designing and implementing the research projects.
- Monitoring research activities.
- Mentoring the research assistants.
- Effective communication
- Acquisition of results and data analysis
- Scientific writing and publication.

UGC Major Research Project at Rani Laxmibai Mahavidyala, Jalgaon, India (Aug 2011 – Nov 2012)

Junior Research Fellow

Project entitled: Molecular approach in understanding the genetic diversity of Mosquitoes from Maharashtra by using COI gene.

Research summary: Collection, preservation, DNA extraction, amplification and sequencing the mitochondrial CO1 gene. Sequence alignment and assembly and related bioinformatic analysis, further reporting results to the principle investigator and preparing the annual report.

TEACHING EXPERIENCE

Yashwantrao Chavan College of Science, Karad, MH, India (Employed, May 2023)

Assistant Professor (Regular)

Conducting lectures, practicals, annual projects and field trips for Bachelor (Zoology)

Yashwantrao Chavan Institute of Science, Satara, India (July 2014 – Feb 2017)

Assistant Professor (Contractual)

Conducting lectures, practicals, annual projects and field trips for Bachelor (Zoology – Fisheries) and Masters (Zoology – Cell biology – Bioinformatics).

SKILLS AND TECHNICAL ACQUISITION

Technique acquisition

- DNA Sequencer (Genetic Analyzer 3130) sequencing, calibration and independent handling.
- Primer designing and synthesis (Mermaid Oligo Synthesizer).
- PCR amplification, troubleshooting and formulation.

Computer proficiency

- DNA sequence alignment and assembly using Geneious Prime, Codon code Aligner and MEGA5,
- Phylogenetic analysis using MEGA, Geneious Prime, BEAST, bPTP, Mesquite, iTOL.
- Population genetic analysis using Arlequin, DNASP.
- Detecting structure from genetic data using the Network software and PopART (creating geotag blocks for phylogeographic analysis).
- AI based Machine learning technique for species identification using WEKA.
- Working knowledge of Python programming and familiar with Linux, Ubuntu Operating system.
- Primer designing (conventional and qPCR with probes) using; Primer 3, IDT Primer quest, & Oligo clac.
- Recognition of complimentary genes through Genome repositories.
- Recognition of relevant domains using HMM profiling.
- Signature MOTIF search using ScanProsite.
- Elimination of redundant sequences using CD-HIT and EMBOSS.

Oral and written skills

- Effective verbal communication and interpersonal skills
- Scientific/academic writing and communication
- Speaking fluently English, Hindi, Marathi
- Writing English, Hindi, Marathi

GRANTS

International Travel Grant, Government of Sharjah, UAE, for "8th International Barcode of Life Conference", Norway (2019).

RESEARCH PUBLICATIONS

1. **Jamdade, R., Al Shaer, K., Al Sallani, M., Al Harthi, E., Mahmoud, T., Gairola, S., Shabana, H., (2022).** Multilocus Marker-based Delimitation of Salicornia persica and its Population Discrimination Assisted by Supervised Machine Learning Approach. **PLoS ONE**. (Accepted).

2. **Jamdade, R., Mosa, K. A., El-Keblawy, A., Shaer, K. Al, Harthi, E. Al, Sallani, M. Al, … Mahmoud, T. (2022).** DNA Barcodes for Accurate Identification of Selected Medicinal Plants (Caryophyllales): Toward Barcoding Flowering Plants of the United Arab Emirates. **Diversity** 2022, Vol. 14, Page 262, 14(4), 262. https://doi.org/10.3390/D14040262

3. **Jamdade, R., Upadhyay, M., Al Shaer, K., Al Harthi, E., Al Sallani, M., Al Jasmi, M., & Al Ketbi, A. (2021).** Evaluation of Arabian Vascular Plant Barcodes (rbcL and matK): Precision of Unsupervised and Supervised Learning Methods towards Accurate Identification. **Plants** 2021, Vol. 10, Page 2741, 10(12), 2741. https://doi.org/10.3390/PLANTS10122741

4. **Saddhe, A. A., Jamdade, R. A., & Gairola, S. (2020).** Recent Advances on Cellular Signaling Paradigm and Salt Stress Responsive Genes in Halophytes. In **Handbook of Halophytes** (pp. 1–26). Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-17854-3_111-1

5. **Mosa, K. A., Gairola, S., Jamdade, R., El-Keblawy, A., Al Shaer, K. I., Al Harthi, E. K., … Mahmoud, T. (2019).** The Promise of Molecular and Genomic Techniques for Biodiversity Research and DNA Barcoding of the Arabian Peninsula Flora. **Frontiers in Plant Science**, 9, 1929. https://doi.org/10.3389/fpls.2018.01929

6. J**amdade, R. A., Mahmoud, T., & Gairola, S. (2019).** Prospects of genomic resources available at the global databases for the flora of United Arab Emirates. **3 Biotech**, 9(9), 333. https://doi.org/10.1007/s13205-019-1855-9.

7. **Patil, T. S., Jamdade, R. A., Patil, S. M., Govindwar, S. P., & Muley, D. V. (2018).** DNA barcode based delineation of freshwater fishes from northern Western Ghats of India, one of the world's biodiversity hotspots. **Biodiversity and Conservation**. https://doi.org/10.1007/s10531-018-1604-0

8. **Saddhe, A. A., Jamdade, R. A., & Kumar, K. (2017).** Evaluation of multilocus marker efficacy for delineating mangrove species of West Coast India. **PLoS ONE**, 12(8). https://doi.org/10.1371/journal.pone.0183245

9. **Saddhe, A. A., Jamdade, R. A., & Kumar, K. (2016).** Assessment of mangroves from Goa, west coast India using DNA barcode. **SpringerPlus**, 5(1). https://doi.org/10.1186/s40064-016-3191-4

10. **Khedkar, G. D., Jamdade, R., Kalyankar, A., Tiknaik, A., Ron, T. B., & Haymer, D. (2014).** Genetic fragmentation in India's third longest river system, the Narmada. **SpringerPlus**, 3(1). https://doi.org/10.1186/2193-1801-3-385

11. **Khedkar, G. D., Jamdade, R., Naik, S., David, L., & Haymer, D. (2014).** DNA barcodes for the FIshes of the Narmada, one of India's longest rivers. **PLoS ONE**, 9(7). https://doi.org/10.1371/journal.pone.0101460

GENBANK PUBLICATIONS

Animal Sequences:

- DNA barcoding of fishes from Narmada riverine system, one of the longest river from India, published in *Plos One*, 2014 (319 sequences: JX983210-JX983514, KF214293-KF214306)

- Genetic fragmentation in India's third longest river system, the Narmada determined by D-loop gene analysis of *Catla catla* and *Mastacembalus armatus.* Published in *SpringerPlus,* 2014 (102 sequences: KF468009-KF468110)
- DNA barcoding of ornamental fishes that could help Ornamental Fish trading in changing the regime of Indian Biodiversity Act (106 sequences: JQ667488-JQ667593)
- Genetic Diversity and Population Structure of Giant Tiger Prawn *Penaeus monodon* from East Coast of India by Mitochondrial D-Loop (81 sequences: JQ863127-JQ863216)
- DNA barcoding of Formicidan ants (75 sequences: KC685075-KC685001)
- Freshwater sponge barcoding (4 sequences: KC860779-KC860775)

Plant Sequences:

- DNA barcoding of Mangroves from West Coast of Goa, of India, Published in *Springer Plus*, 2016 & Plos One 2017; (158 sequences: Springer Plus: KM255065 - KM255094; Plos One: KU876881-KU8768911, KY250442-KY250449, KY754561-KY754575, KY754184-KY754189)
- DNA barcoding of Selected Medicinal Caryophyllales of UAE in MDPI Diversity (98 sequences; OM039304 - OM039402)
- Multilocus Marker-based Delimitation of Salicornia persica (383 sequences; OM396936 - OM397363; MW514447 - MW514530)

PRESENTATIONS

1. 22nd Sharjah International Conservation Forum for Arabia's Biodiversity (SICFAB) (2023). "National Barcode of Life Program".
2. Eighth International Barcode of Life Conference, Trondheim, Norway (2019). "Evaluation of Arabian Vascular Plant Barcodes (rbcL and matK): Precision of Unsupervised and Supervised Learning."
3. National Conference on Recent Advances and Applications of Taxonomy in Life Sciences (2015). "Identification of Human Pathogenic Fungi through DNA Sequencing."
4. National Conference on Innovative Ideas & Research in Life Science for Sustainable Development (2015). "Elemental composition of freshwater sponge using Atomic Absorption Spectroscopy from Satara region."
5. Fourth International Conference on Insect Science (2013). "DNA Barcoding of Formicidean ants from Western Ghats of Maharashtra."
6. International Conference on Biodiversity and its Conservation (2011). Modern College of Arts, Science & Commerce Pune. "Freshwater Sponge fauna of Western Ghats."
7. International workshop on Aquatic Bioresource Biotechnology & Parasite Diversity (2009). Department of Zoology, Allahabad Central University, Allahabad. "Protocol for Easy and Economic DNA Isolation."

RESOURCE PERSON

1. Two days hands-on workshop on bioinformatics (Nov 2023). Yashwantrao Chavan Institute of Science, Satara.
2. International Conference on Recent Trends in Basic and Applied Sciences. R.B. Narayanrao Borawake College, Shrirampur, MH, India. (14th May 2022). Artificial Intelligence for accurate species identification.
3. International Conference on Advances in Science and Technology. Rajashri chhatrapati Shahu College, Kolhapur, MH, India (9th March 2022). Artificial Intelligence for accurate species identification.
4. International Webinar on 'Taxonomy and Forensic Entomology. Sant Gadge Baba Amravati University, Amravati, MH, India (31st May 2020). Artificial Intelligence for accurate species identification.
5. Two days hands-on workshop on Bioinformatics. Yashavantrao Chavan Institute of Science, Satara, MH, India (12th - 13th Nov. 2018).

6. Two days hands-on workshop on Bioinformatics. Yashavantrao Chavan Institute of Science,Satara, MH, India (18th - 19th Aug. 2017).
7. Yashavantrao Chavan Institute of Science,Satara, MH, India (22nd July 2016). An overview to Ubuntu Operating System.

REFERENCES

Dr. Suresh Naik: Research Scientist and Curator of DNA Archive; Adjunct Professor
Canadian Centre for DNA Barcoding, Centre for Biodiversity Genomics,University of Guelph.
Email: snaik@uoguelph.ca

Dr. Kareem Mosa: Associate Professor, University of Sharjah (UAE).
Email: kmosa@sharjah.ac.ae

Dr. Kundan Kumar: Associate Professor, Department of Biological Sciences. BITS Pilani K K Birla Goa Campus.
Email: kundan@goa.bits-pilani.ac.in

PERSONAL INFORMATION

1	Name in Full	Rahul Arvind Jamdade
2	Full Permanent address	Survey No. 36/5/1, Plot No. 2 Vikasnagar, Satara-415003, Maharashtra, India.
3	E-mail	rajamdade@gmail.com
4	Contact Number WhatsAPP	+91 8501945016
5	Date of Birth	30/05/1984
6	Nationality, Religion & Cast	Indian, Hindu-Mali
7	Category	OBC
8	Gender	Male
9	Marital status	Married
10	Whether differently abled	No