

# Praveen P.

## Personal Information

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India

## Educational Qualification

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Year	Qualification	Specialization	Institute	Marks (%)
2018 -2025	Doctor of Philosophy	Biology (Ecology and Evolution)	National Center for Biological Sciences, Bangalore, India	
2015 -2017	Master of Science	Genetic and plant Breeding	University of Agricultural Sciences, Dharwad, India	91.6
2011 - 2015	Bachelor of Science	Agriculture	University of Agricultural Sciences, Raichur, India	89.9
2010	Higher Secondary	Science	Government Higher secondary school, Kallar, India	80.3
2008	High school	-	St. Sebastians's High school, Nedumkandam, India	Nine A+ and One A

## Masters Project

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**Title:** Genetic enhancement of Green Gram (*Vigna radiata*) genotypes through induced mutagenesis

**Supervisor:** Dr Suma C. Mogali, Scientist (Plant breeding), University of Agricultural Sciences, Dharwad, India

**Details:** Different agricultural varieties of green gram (*Vigna radiata*) were treated with chemical and radiation-induced mutagens, and mutants exhibiting superior traits were selected to develop improved lines and potential new varieties.

## PhD Project

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**Title:** Population genetics, ploidy variation and its effects on the phenotype of *Lantana camara* L., in India

**Supervisor:** Prof Uma Ramakrishnan, National Centre for Biological Sciences, Bangalore, India

**Details:** During my PhD, I studied *Lantana camara*, a globally invasive plant with mixed ploidy. Our research addressed three key questions: (a) What is the distribution of different cytotypes of *Lantana* in the wild, and do they show genetic differentiation? (b) Do invasive populations of *Lantana* exhibit high genetic diversity, and do they form a species complex, as previously hypothesised? (c) Does ploidy influence phenotypic and functional traits of *Lantana*? My study aims to develop fundamental genetic information about this globally invasive species, which could contribute to developing control strategies. Additionally, I am studying the ploidy variations and their impact on the phenotype of *L. camara*.

## List of Publications

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Praveen P., Gopal R., and Ramakrishnan U., **The population structure of invasive *Lantana camara* is shaped by its mating system, 2025**

<https://elifesciences.org/reviewed-preprints/104988>

Mayuresh Gangal, Rohan Arthur, Venkatachalam Suri, Awadhesh Pandit, Abhinav Tyagi, Praveen P., Mihir Sule, Iravatee Majgaonkar, Jagdish Krishnaswamy, Uma Ramakrishnan, **Unbounding fish: Assessing vulnerability to overexploitation for transboundary fish 2 populations** (bioRxiv), 2024

<https://www.biorxiv.org/content/10.1101/2024.07.12.603026v1>

Joshi A., Praveen P., Ramakrishnan U. and Sowdhamini R. **Draft genome sequence of an invasive plant *Lantana camara* L.** *Bioinformatics*. 18(9): 739-741 (2022)

<https://pubmed.ncbi.nlm.nih.gov/37426502/>

Praveen P., and Ramakrishnan U., **Predominant tetraploidy and lack of ploidy-associated genetic structure across invasive *Lantana camara* populations in India**, *BioRxiv*, 2026

## Conferences / Presentations

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- 2019      **SERB school in Chemical ecology**  
Provided training in emerging tools in Chemical Ecology research and attended lectures by Scientists working in the field of Chemical Ecology
- 2021      **Attended the *Evolution* conference**  
Attended lectures by eminent scientists in the field of evolutionary research
- 2022      **Delivered a talk at the *Evolution* conference**  
Talk about Untangling the Invasion history of *Lantana camara* using genomics
- 2023      **Delivered a talk at the National Botanical Garden, Sydney, Australia**
- 2023      **Attended the International Congress of Genetics, Melbourne, Australia and presented my PhD work**
- 2024      **Attended the International Workshop on Population Genetics of Polyploids at Czech Republic and presented my PhD work**
- 2025      **Attended the International Workshop on Population and Speciation Genomics at Český Krumlov**

## Awards and recognitions

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- 2011-2015      National Talent Scholarship for Bachelor of Science
- 2016-2017      National Talent Scholarship for Master of Science
- 2018              Cleared JGEEBILS exam and secured PhD position with fellowship
- 2019              Secured 48<sup>th</sup> rank and fellowship in the all-India CSIR-JRF exam

## Skills & Expertise

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During my PhD research, I gained extensive experience in genomic analysis, covering key aspects of population genomics. I was actively involved in all three major stages of genomic research - **extensive sample collection, DNA extraction and genomic library preparation and finally, data analysis** - allowing me to develop a well-rounded understanding of the field. My core skills include:

### Field & Lab Experience:

- Extensive sample collection in India, including protected areas in different habitats
- Ploidy estimation using **flow cytometry**

- DNA extraction
- Sequencing **library preparation** for whole genome, ddRAD and Sanger sequencing.
- PCR and gel electrophoresis
- Scanning Electron Microscopy

### Genomic Data Analysis:

- Raw sequencing data processing & quality control
- **Genetic differentiation estimation:** Principal Component Analysis (PCA), admixture analysis, fixation index ( $F_{ST}$ ), and Discriminant Analysis of Principal Components (DAPC)
- **Genetic diversity estimation:** Heterozygosity, inbreeding coefficient, genetic distance, theta estimation, and Site Frequency Spectrum (SFS)
- **Hybridisation tests:** Treemix, ABBA-BABA tests, and NewHybrids analysis
- **Phylogenetic reconstruction:** Using mitochondrial sequences and SNP data
- **Species delimitation:** General Mixed Yule Coalescent (GMYC) analysis
- **Genomic simulations:** SLiM, CDPOP, and Fastsimcoal
- **Selection scans:** Manhattan plots
- **Runs of homozygosity analysis:** Using ROHan.
- **Metabarcoding:** Preparation of barcoded libraries

### Other Tools:

- Scanning Electron Microscopy (**SEM**)
- Estimation of plant morphological traits

## Additional Information

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Languages

Malayalam, Hindi, Kannada, Tamil and English