# PRAVIINKUMAR R

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## PROFILE

ICRISAT- Research Fellow
M.Sc. Genetics & Plant Breeding
Research Interests: Plant Breeding, Genomics, Bioinformatics, and Crop Phenotyping

## OBJECTIVE

I aim to expand my expertise in crop improvement by exploring advanced approaches in Plant Breeding, Genomics, Molecular Biology, and Bioinformatics. This will enhance my academic and scientific knowledge, enabling me to contribute meaningfully to society through cutting-edge advancements in the field. Additionally, I have gained diverse experience across different platforms, further broadening my skill set.

## EXPERIENCE

**Research Fellow**
The International Crops Research Institute for the Semi-Arid Tropics- ICRISAT, Hyderabad, India
Crop Physiology and Modelling, Accelerated Crop Improvement
[20/01/2025 – 02/05/2025]

**Research Assistant**
Indian Institute of Millets Research (IIMR)
Molecular Breeding on Proso Millet
[14/09/2024 – 15/12/2024]

## EDUCATION

**B.Sc (Hons) Agriculture**
Ramakrishna Mission Vivekananda Educational Research Institute, Coimbatore, India
[2018 – 2022] Final Grade: 8.52 out of 10

**M.Sc Agriculture (Genetics and Plant Breeding)**
Annamalai University, Chidambaram, India
Thesis: Studies on combining ability and heterosis through line x tester analysis in Okra (*Abelmoschus esculentus L.* Moench)
[2022 – 2024] Final Grade: 9.01 out of 10

## RESEARCH AND WORK EXPERIENCE

**As Research: ICRISAT – Crop physiology and Modeling**

- High Throughput Phenotyping, Precision phenotyping sensors, UAV based phenotyping
- Crop bio-fortification using NIRs, XRF spectrometer and visible-spectra imaging sensors
- Breeding and evaluation for drought and stress resilience

**As Research: IIMR- Crop Improvement**

- Conducted breeding programs for Proso millet and Pearl millet.
- Plant DNA isolation, purification, and quantification (Spectrophotometer)
- Utilized molecular markers (SSR, AFLP, RFLP) and PCR-based techniques.
- Performed agarose & PAGE gel electrophoresis for DNA/protein analysis.
- Gained expertise in GWAS (mixed and linear) models for micronutrient bio-fortification and contributed to a book chapter on the genetic basis of micronutrient traits in crops.

**As a part of Masters Research**

Thesis: Studies on combining ability and heterosis through line x tester analysis in Okra (*Abelmoschus esculentus* L. Moench)

- Diversity Analysis, Experimental design and crossing block setup.
- Phenotypic measurements and field data collection.
- Hybridization analysis using ANOVA, GCA/SCA (R).
- Genetic analysis including combining ability, and heterosis estimation.
- Gene x Environment (GxE) analysis using AMMI stability models

**As a part of Bachelors: Pathology Lab**

- Isolation of disease pathogens and inoculation techniques.
- Proficient in fungal culture techniques and spawn preparation.
- Hands-on experience with bagging and controlled environment techniques.
- Also in field disease identification and disease scoring.

**Other skills**

- STAR, TASSEL, GAPIT, Phytozome
- Sequence Alignment, Genome Annotation, Phylogenetic Analysis
- RNA-Seq & Transcriptomic Analysis

## WORKSHOP:

- Genomic Selection - ICRISAT
- RNA sequencing using R- OmicsLogic®
- Single Cell Sequencing- Plant Cell Atlas®

## PUBLICATIONS

Chandraprakash, S., Kamalasuriyan, C. M., **Praviinkumar**, R., Manoj, R., Pradesh, G. J., Kumar, R. N., ... & Partheeban, C. (2021). Performance of various substrates in the cultivation of oyster mushroom (*Pleurotus sajor-caju*). *Eco Environment & Conservation, 28*(8), 252-257. https://doi.org/10.53550/EEC.2022.v28i08s.038

Praviinkumar, R., Nishok, P., Vignesh, R., Harini, M., & Senthilkumar, N. (2024). Genetic variability, combining ability, and stability analysis studies on traditional okra genotypes and their hybrids (*Abelmoschus esculentus* (L.) Moench) using line × tester design. *Plant and Soil Science, 15*(4), 20-39. https://doi.org/10.31548/plant4.2024.20

Praviinkumar, R. (2025). Genetic diversity and crop genome-wide association studies to identify biofortified traits for micronutrients. In A. N. Shah, S. Faiz, M. Aslam, J. Iqbal, & A. Qayyum (Eds.), *Crop biofortification: Biotechnological approaches for achieving nutritional security under changing climate* (Chapter 24). Wiley. https://doi.org/10.1002/9781394273270.ch24

## ACHIEVEMENTS

- Certification of Merit – Tamil Nadu Agricultural University (TNAU), Coimbatore (2019)
- Squad Leader for Rural Technology Transfer – Krishi Vigyan Kendra, Coimbatore (2022)
- Certified in three FAO e-learning courses, obtained digital badges:
    1. Introduction to Pre-breeding and Project Management (2019)
    2. SDG Indicators 2.5.1 and 2.5.2 - Plant and Animal Genetic Resources (2022)
    3. Surveillance and Pest Status Determination (2024)

## DIGITAL SKILLS and HOBBIES

- Language Skills: English and Tamil
- Computer skills with Adobe Express, R Programming
- Blog Posts Writing (Instagram: agriculture_2k, Blogspot: agriculture-2k.blogspot.com)

**TOEFL: 86** R-22 | L- 21 | S- 25 | W-18 |

## REFRENCES:

1. Dr. Sunita Choudhary,
   Research Scientist, ICRISAT
   Email: sunita.choudhary@icrisat.org
2. Dr. N. Senthil Kumar,
   Professor [Genetics and Plant Breeding], Annamalai University
   Email: nsenthilsukant1975@gmail.com