

# Dr. Soumya P.R.

**Assistant Professor (Plant Physiology)**  
**RARS(SZ), Vellayani**

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## Summary

My research interest in the abiotic stress response of plants started with my M.Sc. program wherein I worked on a project entitled “ Role of paclobutrazol in amelioration of water deficit stress in chickpea (*Cicer arietinum* L.)” at the Division of Plant Physiology, Indian Agricultural Research Institute, New Delhi, one of the premier institutes of agricultural education. During Ph.D. program I worked on a project entitled “ Study of genetic variation for improved phosphorus efficiency and associated physiological traits in wheat” at the Division of Plant Physiology, Indian Agricultural Research Institute, New Delhi. I have been working on the broad area of “ Abiotic stress response of plants” with special emphasis on the drought tolerance in crops. My current research interest is to identify the donors with efficient traits for abiotic stress tolerance.

## Experience

Joined Kerala Agricultural University as Assistant Professor (Plant Physiology) in the year 2019.

## Education

- Graduated in Agricultural Science from Kerala Agricultural University (2012)
- Post Graduation in Plant Physiology from Indian Agricultural Research Institute, New Delhi (2014)
- Ph.D in Plant Physiology from Indian Agricultural Research Institute, New Delhi (2021)

## Area of Specialization

Abiotic stress response of plants, Mineral nutrition, Plant growth regulators

## Awards & Recognitions

- 1<sup>st</sup> Rank in M.Sc.Plant Physiology from Indian Agricultural Research Institute
- IARI Junior fellowship for doing M.Sc. Plant Physiology
- IARI Junior fellowship for doing Ph.D Plant Physiology
- Cleared ASRB-National Eligibility Test (2015)
- Cleared CSIR – UGC National Eligibility Test (2016)
- Qualified ICAR’s AICE-SRF (PGS) –Plant Physiology (2015)
- Cleared Agricultural Research Service (ARS-2016)
- Best Poster award on “ Genome-wide association study for phosphorus efficiency traits in bread wheat (*Triticum aestivum* L.)” presented in the International Plant Physiology Virtual Symposium on “Physiological Interventions for Climate Smart Agriculture (IPPVs 2021)”

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## Research Projects

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### Completed

1. Screening of rice genotypes for drought tolerance. Funded by State Plan-Station wise funding 2022-23.

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## Publications

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### Journal Articles

1. Soumya, P. R., Sharma, S., Meena, M. K., & Pandey, R. (2021). Response of diverse bread wheat genotypes in terms of root architectural traits at seedling stage in response to low phosphorus stress. *Plant Physiology Reports*, 26(1), 152-161.
2. Soumya, P. R., Singh, D., Sharma, S., Singh, A. M., & Pandey, R. (2021). Evaluation of diverse wheat (*Triticum aestivum*) and triticale ( $\times$  Triticosecale) genotypes for low phosphorus stress tolerance in soil and hydroponic conditions. *Journal of Soil Science and Plant Nutrition*, 21(2), 1236-1251.
3. Soumya, P. R., Burrridge, A. J., Singh, N., Batra, R., Pandey, R., Kalia, S., Rai, V., & Edwards, K. J. (2021). Population structure and genome-wide association studies in bread wheat for phosphorus efficiency traits using 35 K Wheat Breeder's Affymetrix array. *Scientific reports*, 11(1), 1-17.
4. Vengavasi, K., Pandey, R., Soumya, P. R., Hawkesford, M. J., & Siddique, K. H. (2021). Below-ground physiological processes enhancing phosphorus acquisition in plants. *Plant Physiology Reports*, 26(4), 600-613.
5. Soumya, P. R., Vengavasi, K., & Pandey, R. (2022). Adaptive strategies of plants to conserve internal phosphorus under P deficient condition to improve P utilization efficiency. *Physiology and Molecular Biology of Plants*, 28(11-12), 1981-1993.
6. Dhanyalakshmi, K. H., Mohan, R., Behera, S., Jha, U. C., Moharana, D., Behera, A., Thomas, S., Soumya P.R., Sah, R.P. & Beena, R. (2024). Next Generation Nutrition: Genomic and Molecular Breeding Innovations for Iron and Zinc Biofortification in Rice. *Rice Science*.

### Popular Articles

1. Ajith, K.K., Sameera, K., Preetha, R., & Soumya P.R. Puliyoorum madhuravumayi strawberry pera Kerala Karshakan, 66 (5).

### Books/Chapters in Books

1. Soumya, P.R., Das, M., Kumar, R., & Singh, P. (2019). Physiological mechanisms for multiple stress tolerance – status and emerging opportunities. In: Rao, C.S., Vinayagam, S.S., & Meena, P.C. (eds) Challenges and emerging opportunities in Indian agriculture. ICAR-National Academy of Agricultural Research Management, Hyderabad, India, pp 321.

## Practical Manual

1. PP 501 Manual Principles Of Plant Physiology I- Plant Water Relations and Mineral Nutrition (PP 501)

## Poster presentation

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1. Soumya P.R., Singh, D., Sharma, S., Meena, M.K., Singh, A.M., & Pandey, R.(2019). Genotypic variation in phosphorus deficiency tolerance of wheat (*Triticum aestivum*) genotypes grown in low phosphorus soil. National Conference of Plant Physiology-2019 KAU, Thrissur, Abstract proceedings pp: 55.
2. Soumya P.R., Pandey, R., Burrridge, A. J., Singh, N., Batra, R., Kalia, S., Rai, V., & Edwards, K.J. Genome-wide association study for phosphorus efficiency traits in bread wheat (*Triticum aestivum* L.). International Plant Physiology Virtual Symposium on “Physiological Interventions for Climate Smart Agriculture (IPPVs 2021)”, ICAR-Sugarcane Breeding Institute, Coimbatore, Tamil Nadu, Abstract proceedings pp: 46.
3. Soumya P.R., Singh, N., Batra, R., Burrridge, A. J., Edwards, K.J. & Pandey, R. (2021). Genome-wide association studies in bread wheat revealed genes controlling physiological traits governing phosphorus use efficiency. National Conference of Plant Physiology-2021, ICAR-NIASM, Pune, India, Abstract proceedings pp: 162.
4. Soumya, P.R., Sharma, S., Singh, A.M., & Pandey, R.(2024). Genetic variation for root morphological traits of wheat genotypes under phosphorus deficiency. AICSA 2024 KAU-CORTEVA International Plant Symposium, College of Agriculture, Vellayani, Abstract proceedings pp: 11.
5. Rakhi, R., Sarada, S., Beena R., & Soumya, P.R. (2024). High throughput phenotyping methods. AICSA 2024 KAU-CORTEVA International Plant Symposium, College of Agriculture, Vellayani, Abstract proceedings pp: 16.

## Workshop/Trainings attended

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1. Participated in the 4<sup>th</sup> Orientation programme on “New Vistas for Disaster Resilient Academic Ecosystem Management” conducted by Kerala Veterinary and Animal Sciences University, Directorate of Entrepreneurship, Academic staff college from 25-11-2020 to 15-12-2020.
2. Participated in MOOC on Psychology of Learning held during 1-15, May 2020 conducted by ICAR-National Academy of Agricultural Research Management, Hyderabad.
3. Participated in Foundation course on research, education and extension management held during 2-7, March 2020 conducted by Central training institute, Mannuthy.
4. Participated in 109<sup>th</sup> Foundation course for agricultural research service (FOCARS) held during January 4-April 3, 2019 conducted by ICAR-National Academy of Agricultural Research Management, Hyderabad.
5. Participated in 4-Week Induction/ Orientation Programme for Faculty in Universities/Colleges/Institutes of Higher Education held during November 19-December 18, 2021 conducted by Teaching Learning Centre, Ramanujan College, University of Delhi under the aegis of Ministry of Education Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching.
6. Participated in two day workshop on Introductory bioinformatics held during 12.12.2023 to 13.12.2023 conducted by Department of Molecular Biology and Biotechnology, College of Agriculture, Vellayani, Thiruvananthapuram.
7. Attended International webinar on “Functional phenomics for improved climate resilience in tropical agriculture” on 04.01.2024 organised by ICAR-CTCRI, Sreehariyam.

8. Attended winter school training program on Phenotyping horticultural crops for abiotic stress tolerance to enhance resilience under climate change organised by ICAR-IIHR Bangalore on 01.02.2024 to 21.02.2024.
9. Attended International workshop on climate resilient rice for Kerala organized by Department of Plant Physiology, College of Agriculture, Vellayani on 07.03.2024
10. Attended online training program on Design and Analysis of Agricultural Experiments organized by Department of Agricultural Statistics, College of Agriculture, Vellayani on 30.07.2024 to 31.07.2024.
11. Attended online training program on Basics of Data Analysis Using R, organized by Centre for e-Learning, KAU on 09.09.2024 to 13.09.2024.

## **Membership in Professional Associations**

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1. Life time member of Indian Society for Plant Physiology