Dr. K. Sunitha Kumari – Assistant Professor, Department of Botany

Personal Information

Name	**:**	Dr. K. Sunitha Kumari
Designation	**:**	Assistant Professor
Department	**:**	Botany
Email	**:**	ksunitha@psgrkcw.ac.in
Teaching Experience	**:**	7 Years 10 Months
Research Experience	**:**	13 Years
Areas of Specialization	**:**	Soil Microbiology, Bioinoculants, Solid Waste Management, Biocolourants

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Academic Qualifications

Degree	Branch	Institution / University	Year
Ph.D.	Botany	PSGR Krishnammal College for Women	2017
M.Sc.	Botany	PSGR Krishnammal College for Women	2012
B.Sc.	Botany	PSGR Krishnammal College for Women	2010

Additional Qualifications

Certification / Diploma	Area of Specialization	Institution / Agency	Year
Certification	Commercial Horticulture	PSGR Krishnammal College for Women	2010
Certification	Biofertilizer Technology	PSGR Krishnammal College for Women	2010
Certification	Computer Applications	Tamil Nadu Computer Education & Examination Board	2011

Professional Experience

- Assistant Professor, Department of Botany, PSGR Krishnammal College for Women, Coimbatore — 2018–Present
- Junior Research Fellow, UGC-Major Research Grant, PSGR Krishnammal College for Women, Coimbatore — 2013–2016

Ongoing Research Projects

- Tamil Nadu Forest Department Project (2024–2025): Molecular Characterization of Grass Species in Nilgiri Tahr Grazing Habitats — ₹ 2,31,000 **(Principal Investigator)**
- DBT BUILDER Project (2022–2027): Exosomes — ₹ 1.5 Crore **(Co-PI)**
- BIRAC EYUVA Grant (2024–2025): Food packages from flower wastes — ₹ 2,50,000 **(Mentor)**

Research Projects Completed

- GRG Trust Major Project (2018–2020): Assessment of Air Quality in Coimbatore City Using Air Pollution Sensors — ₹ 2,50,000 **(Principal Investigator)**
- NCSTC Project (2020–2021): Awareness of Organic Farming — ₹ 2,50,000
- TNSCST Student Project (2021–2022): Anthocyanin-Rich Biocolourant Extraction — ₹ 7,500 **(Mentor)**
- GRG Trust Major Project (2020–2023): Impact Assessment on Agricultural Land along the Noyyal Basin Using GIS — ₹ 1,00,000 **(Co-PI)**
- ICSSR Minor Project (2023–2024): Sustainable Agriculture and Food Security — ₹ 7,50,000 **(Co-PI)**
- BIRAC EYUVA Grant (2023–2024): Biodegradation of Vegetable and Fruit Waste via Mushroom Cultivation — ₹ 2,50,000 **(Mentor)**

Awards and Recognitions

- Best Faculty Award, PSGRKCW (2025)
- Outstanding IIC Coordinator Award, CIIED, PSGRKCW (2025)
- Outstanding Contributor Award, CIIED, PSGRKCW (2024)
- Mangala Sirpiyar Award, Ulaga Tamil Neri Kazhagam & Thirukkural Ulagam Kalvi Saalai (2024)
- First Rank with Distinction in M.Sc. & B.Sc., PSGRKCW
- NSF Best Research Paper Award (2018)
- Best Paper (Oral Presentation), Periyar University (2016)
- Best Paper (Oral Presentation), PSG SCITECH (2014)
- Third Prize, Poster Presentation, Bannari Amman Institute of Technology (2010)
- Yuva Kala Bharathi Award for excellence in curricular and co-curricular activities

Research Publications

- Field trial to correlate mineral solubilization activity of Pseudomonas aeruginosa and biochemical content of groundnut plants. Open Life Sciences, 2025, Volume 20(1), Pages 20221008. DOI:https://doi.org/10.1515/biol-2022-1008
- Organic Remobilization of zinc and phosphorus availability to plants by application of mineral solubilizing bacteria Pseudomonas aeruginosa. Heliyon, 2023, Volume 9. DOI:10.1016/j.heliyon.2023.e22128
- Phosphorus solubilizing activity of *Mycobacterium cosmeticum* under various cultural conditions. International journal of advanced scientific research and management. 2018. 3(8): 103-106.
- Organic cultivation of medicinal plants: Influence of composted coirpith on the growth and yield of Coleus forskohlii (willd.) Briq. Compost Science & Utilization. 2016, 24(4): 266-272. DOI:10.1080/1065657X.2015.1013583
- Zinc solubilizing bacterial isolates from the agricultural fields of Coimbatore district, Tamil Nadu. Current science. 2016, 110(2): 196-205. DOI:10.18520/cs/v110/i2/196-205
- Assessment of competence of the Pseudomonas aeruginosa to solubilize insoluble form of zinc under various cultural parameters. Arabian journal for science and engineering. 2016, 41(6):2117–2121. DOI:10.1007/s13369-015-1907-3
- Isolation and identification of zinc solubilizing fungal isolates from agricultural fields. Indian journal of agricultural sciences.2015, 85(12): 1638-1642. DOI:10.56093/ijas.v85i12.54334
- Role of phosphorous solubilizing microorganisms to eradicate P-deficiency in plants review. International Journal of Scientific and Research Publications. 2014. 4(6)-Online journal.
- Microbial inoculants-A boon to zinc deficient constraints in plants –A review. International Journal of Scientific and Research Publications. 2014. 4(6)-Online journal.
- Composting of Coirpith and its effect on growth and biochemical contents of *Helianthus annuus*, L. Plant Archives. 2013.13(1): 535-539.
- Composting of coirpith by the mushrooms- *Pluerotusflorida* (FR).Kumm and *Hypsizygusulmarius* (Bull. FR.) Redh. 2013. Plant Archives. 13(1): 11-14.
- A study on integrating EM technology with vermicomposting for effective composting of coir pith. 2012. Advances in Applied Research. 4(2): 106-110.

Book Chapters and Book Published

- High-Throughput Metabolomics for Plant Ecology and Biodiversity Research. In *High-Throughput Plant Metabolomics* (2025), pp. 405–426.
- Technological Advancements in Plant High-Throughput Metabolomics. In *High-Throughput Plant Metabolomics* (2025), pp. 67–95.

- Dissecting Plant–Pathogen Interactions via Metabolomics. In *Plant High-Throughput Phenotyping and Functional Phenomics* (2025), pp. 345–362.
- Microbial Degradation of E-waste for a Sustainable Environment. In *Scientific Aids for Sustainable Business* (2020), pp. 80–85.

Book: *Taxonomy of Angiosperms – Field to Laboratory.* 2021. Blue Hill Publishers, Coimbatore. ISBN: 978-81-951362-2-3

Reviewer Roles and Professional Contributions

- Reviewer for *South Asian Journal of Research in Microbiology*
- Reviewer for *Asian Soil Research Journal*

GenBank Submissions: 10 | **Patents Filed**: 2 | **Proceedings:** 4

Institutional Roles and Responsibilities

- AQAR – Criteria VII Working Committee Member
- 4th Cycle NAAC Working Committee Member
- Green Audit Committee Member
- Institutional Innovation Council (IIC) – Innovation Coordinator
- ARIIA and NIRF Innovation Committee Member
- Amrita Virtual Lab Coordinator
