

Selva Kumar S

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Education

- **M.Sc. Plant Pathology (2025)** – Indian Agricultural Research Institute (CGPA: 9.00/10)
- **B.Sc. (Hons) Agriculture (2023)** – Tamil Nadu Agricultural University (CGPA: 8.59/10)

- Crop production
- Farm budgeting
- Farm planning
- Disease and pest identification
- Disease Management
- Indulged in State agriculture department: Conduction extension programs for farmers
- Volunteer in National Service Scheme
- Isolation and mass production of bioagents

Research Experience

Graduate Researcher: Indian Agricultural Research Institute, Nagpur Hub (Nov 2023-Sept 2025)

Project: “Development of rapid detection tools for pathogens causing cotton seedborne diseases”

- Isolated seedborne pathogens (*Alternaria*, *Fusarium*, *Paramyrothecium* and *Xanthomonas*) from cotton seeds
- *In vitro* bioassay
- Developed multiplex PCR and LAMP assays for pathogen detection in seeds
- Cotton varietal responses against seed pathogens by enzyme assays (POD, PAL, CAT)
- Applied molecular diagnostics and microscopy-based identification to confirm pathogen identity
- Managed laboratory workflow, culture maintenance, DNA extraction, RNA extraction, primer designing, standardisation of PCR and LAMP assays
- Utilised Excel and SPSS for experimental design and statistical analysis
- Laboratory management and record keeping
- Seed health testing
- Communication and interdisciplinary collaboration
- Tools: R, Excel, NCBI tools, Primer Design Tools, MEGA, QIIME2, CAP 3, and Bioedit
- Enzymatic/Biochemical Assays: Soluble protein, peroxidase, PAL, catalase, total antioxidant activity, polyphenol oxidase, chitinase, and β-glucanase

Senior Research Fellow: ICAR-Central Institute for Cotton Research, Nagpur (Dec 2025-till now)

Project: “Bollrot (Rasi CICR Nagpur CSR)”

- Survey and collection of infested bolls
- Field layout and experimental designing
- Disease indexing
- Isolation of bollrot pathogens (*Pantoea*, *Fusarium*, *Xanthomonas*, etc.,)

- Morphological and molecular characterization
- Diversity analysis
- Development of LAMP assays: fungal and bacterial pathogens
- Multilocus sequence alignment
- Preservation of cultures

Publications

Research articles communicated (3):

- Development of a colorimetric Loop Mediated Isothermal Amplification (LAMP) assay against seedborne *Xanthomonas citri* pv. *malvacearum* in cotton
- First report of seed association of *Lasiodiplodia theobromae* in cotton and its detection
- Seedborne Pathogen Complex of Cotton: Morpho-Molecular Identification and PCR-Based Detection of *Paramyrothecium roridum*

Popular article (2):

- Harnessing Omics for Next-Generation Plant Disease Management
- Advances in Molecular Diagnostics for *Citrus Tristeza Virus*: Tools for Precise Detection

Presentations in Conferences

➤ **Oral Presentations (2):**

- Colorimetric LAMP Assay for Rapid Detection of *Xanthomonas citri* pv. *malvacearum* in Cotton Seeds
- Rapid detection tool for *Fusarium* spp. and *Paramyrothecium roridum* in cotton seeds”

➤ **Poster presentations (2):**

- Detection and diagnosis of plant diseases: An overview of current prospective methods
- Next Gen-Detection: Fusion of microfluidics with molecular tools”,

➤ **Abstracts (3):**

- Secondary metabolites from microbes for plant disease management
- Wheat Blast: A Global Agricultural Crisis Unfolding
- Harnessing microbial biofilms for sustainable plant disease management”

Certifications

- Basics of Data Analysis Using R (Nov 2025)
- SWBio DTP Data Science Summer School (July 2025)
- NPTEL Organic Farming for Sustainable Agriculture (June-Sep, 2023)
- C/C++ Programming (Bharathidasan University, 2015–16)
- Winter School: Technological Advances Leading to Smart Farming & Agripreneurship (Jan, 2024)

Awards

- Prof. M. J. Narasimhan Merit Academic Award (IPS West zone, 2025)
- ICAR National Talent Scholarship and IARI PG Fellowship (2023-25)
- Certificate of Appreciation (BSM 2025)
- Best article award (Vigyan Varta, February, 2025)