Dr. Satya Srii Ram Vijayan

Ph.D in Seed Science and Technology
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I am keen on the 'whys' and 'hows' of nature and that keeps me passionately curious about the details of nature. I wish my professional career adds value to people's life. In this context, I see myself to be a better fit for research and I wish to have a career in the same.

ACADEMIC BACKGROUND

Aarhus University, Denmark — *Flakkebjerg campus*

Postdoctoral Researcher — *Ongoing till April 2024*

Research topic: Seed moisture relations during storage

Supervisor: Dr. Fiona R. Hay, Senior Researcher, Department of Agroecology- Crop Genetics & Biotechnology, Aarhus University

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Howard University, Washington DC — *Washington DC, USA*

Remote Volunteer Research Assistant — *Ongoing*

Supervisor: Dr. Philip Kurian, Principal Investigator and Founding Director, Quantum Biology Lab, Howard University

I have been serving as a remote volunteer research assistant (employee ID: 000274585) since June 2023 and I am indulged in exploring the use of quantum techniques for application in seed science and technology and getting familiar with the field of quantum biology.

University of Agricultural Sciences – Bangalore (UAS-B), India — *GKVK, Bengaluru*

***PhD**, Seed Science and Technology, GPA:* 9.58/10 — *December, 2022*

- **DST-INSPIRE fellow** (Department of Science and Technology-Innovation in Science Pursuit for Inspired Research) receiving a fellowship for Ph.D. from DST, India
- ***University Gold Medal*** for securing highest GPA

Dissertation: Studies on the Physical Structure and Chemical Composition of Seed Coat in Maize (*Zea mays*) and Soybean (*Glycine max*)
Supervisor: Dr. N. Nethra, Seed Technology Research Unit, All India Co-ordinated Research Project, UAS-B
Collaborator and project funding: **TRuCapsol LLC, Bethlehem, USA**

Sorbonne University, Paris — *Paris, France*
Short term research internship — 29th October 2021 to 29th January 2022

- Selected by **ICAR-CAAST** (Indian Council of AgriculturalResearch- Centre of Advanced Agricultural Science & Technology) for three-month international research and training

Project title: Role of seed coat in transgenerational stress memory of sunflower (*Helianthus annas*) seeds
Supervisor: Professor Christophe Bailly, Developmental Biology Lab, Sorbonne University, Paris.

University of Agricultural Sciences – Bangalore (UAS-B), India *GKVK, Bengaluru*

M.Sc., *Seed Science and Technology, GPA: 9.47/10* *August, 2019*

- Awarded ***Junior Research Fellowship*** under Indian Council of Agricultural Research, New Delhi.
- Awarded ***University Gold Medal*** for securing highest GPA

Dissertation: Genetic purity testing of maize (*Zea mays*) hybrids through Genotyping-by-Sequencing (GBS)
Supervisor: Dr. N. Nethra, Seed Technology Research Unit, All India Co-ordinated Research Project, UAS-B
Other researches performed:

1) Seed imbibition studies using image analyzer in *Melia dubia*
2) Impact of storage conditions on seed coat integrity of soybean.

Tamil Nadu Agricultural University – Tamil Nadu, India *AC &RI, Killikulam*
B.Sc., *Agriculture, GPA: 9.28/10* *May, 2017*

- *Awarded University Gold medal for securing highest GPA*

Project title: Breeding of mushrooms for the high yielding ability
Supervisor: Dr. Rammoorthy, AC & RI, Killikulam, Tamil Nadu, India.
Experiential learning:

1) Generating mutants in sunflower with Dr. Ashish K. Binod, AC & RI, Killikulam, Tamil Nadu, India
2) Production of biofertilizers with Dr. Akila, AC & RI, Killikulam, Tamil Nadu, India

SCIENTIFIC SKILLS AND TECHNICAL EXPOSURE

- **Seed Technology:** Germination testing, vigor testing, viability testing, Electrical conductivity, Accelerated Ageing, Moisture testing, Genetic purity testing by Grow-out Test, Molecular marker assays, Seed Image analysis, Oxygen mapping in seeds using sensors
- **Microscopy:** Compound microscopy, Fluorescent microscopy, Confocal microscopy, Scanning Electron Microscopy, Seed coat sectioning; Histochemical studies
- **Biochemical analysis:** Total dehydrogenase, estimation of tannin, lignin, polyphenols, ROS (H_2O_2), antioxidant enzyme activities of catalase, peroxidase, phenylalanine lyase, superoxide dismutase, estimation of trace elements using Atomic Absorption Spectrometry, phytochemical analysis through Gas Chromatography-Mass Spectrometry and High-Performance Liquid Chromatography.
- **Molecular biology:** DNA extraction, Simple Sequence Repeat (SSR) marker analysis, SNP marker analysis, RT-PCR, Designing primers, Designing Guide RNA, Finding Offtargets, CRISPR-Cas9 Editing in plants
- **Agronomy:** Experience in growing crops under greenhouse and field conditions. Better knowledge in planning layout for experiments using different models
- **Bioinformatics:** Basic sequencing data analysis from Genotyping by Sequencing (GBS), FASTQ data interpretation
- **Statistical Analysis:** Data analysis using Correlation, Covariance and Regression models. Data reduction and visualization by Heat Map, Principle Component Analysis and Factorial Analysis. Development of

one-way and factorial two-way ANOVA models for experiments, interaction studies, and posthoc statistical tests. Familiar with SPSS software for data analysis

- **Computer proficiency:** Proficient in MS-PowerPoint, Excel, Word, and scientific data retrieval from various Internet portals using databases such as SciFinder, Reaxys, Science Direct, PubMed, Google Scholar, and Patent database USA (USPTO), India (IPINDIA), Europe (ESPACENET) etc. Good knowledge of application software's *viz*., ImageJ
- **Scientific writing**: Capable of preparation of lab reports, research proposals, manuscripts for publications and posters.
- **Personal ability:** Capable of having good interpersonal relationships and performing collaborative and independent research. Strong leadership qualities. Efficient in identifying technical problems and sorting it independently. Experience in teaching postgraduates and supervising post-graduate students in various projects. Proficient communication and writing skills in English.

FELLOWSHIPS AND NET

1) Indian Council of Agricultural Research – **Junior Research Fellowship** for M.Sc. Research (2017-2019).
2) Department of Science and Technology- **Innovation in Science Pursuit for Inspired Research** for Ph.D Research (2019-2022).
3) ***Eligibility for Lectureship*** (NET) from Joint ***CSIR-UGC*** (Council of Scientific Research- University Grants Commission) (2019)
4) ***ASRB-NET*** (Agricultural Scientist Recruitment Board- National eligibility Test) (2019)

ACADEMIC AWARDS AND RECOGNITIONS

1) '***Young Plant Biologist'*** award in International Conference on Global Initiatives in Research, Innovation and Sustainable Development of Agriculture and Allied Sciences conducted by Guru Kashi University, Punjab, Agro Environmental Education and Farmers Welfare Society, Chandigarh and Just Agriculture in 2022.
2) Our paper published in ***Crop Science*** was selected as a ***featured article*** and our research image was published as ***cover page*** in the July-August issue of the journal in 2022.
3) ***Best Article Award*** for the our article in AgriGate in 2022.
4) ***University Gold Medal*** for securing highest OGPA in Masters Degree awarded by University of Agricutural Sciences, Bangalore, India (2022)- Ph.D
5) ***University Gold Medal*** for securing highest OGPA in Masters Degree awarded by University of Agricutural Sciences, Bangalore, India (2020) - Masters
6) ***University Gold Medal*** for securing highest OGPA in Masters Degree awarded by University of Agricutural Sciences, Bangalore, India (2017) - UG
7) ***Tiruttani Kandaswamy Devasundaram Award*** from TNAU, Coimbatore (2018)
8) ***S.M. Punniamoorthy Nagarathinammal Medal*** from AC & RI, Killikulam, TNAU (2017)
9) ***Smart Killi Medal*** from Agricultural College and Research Station (AC & RI), Killikulam, TNAU (2014)

CONFERENCE, SYMPOSIA AND TRAINING

1) Attended a '**Hands-on training program on CRISPR/Cas9 Gene Editing** technologies in plants' conducted by International Crop Research Institute in Semi-Arid Tropics (ICRISAT) and BioNcube in Patancheeeru, Hyderabad, India from 10th to 14th October 2022.

2) **Oral presentation** of paper titled 'Seed Morphometric Changes Influenced by Accelerated Ageing in Contrast-coloured Maize (*Zea mays* L.) Genotypes' in **Science Week** conducted by University of Agricultural Sciences, Bangalore, India (2022).
3) Paper titled 'Study on the seed coat phytochemical diversity of black and white soybean (Glycine max (L.) Merr) with differential storability' accepted for **oral presentation** in 13th Triennial Meeting of the International Society of Seed Science (ISSS-2021) conducted by the ***Royal Botanic Gardens, Kew*** (2021)
4) Presented a **poster** titled "Application of microsatellite markers for genetic purity testing of maize hybrids" in 107th Indian Science Congress 2020 held at UAS-B, Karnataka, India (2020)
5) Presented a **poster** titled "Effect of stacking height on seed coat integrity of soybean (*Glycine max* (L.) Merrill.) in the International E-conference on 'Advances and future outlook in biotechnology and crop improvement for sustainable productivity' organized by the Department of Biotechnology and Crop Improvement, College of Horticulture, Bengaluru during 24-27th November 2020.
6) Presented **poster** entitled "Use of Single Nucleotide Polymorphisms for genetic purity testing of maize hybrids" in 32nd ISTA Congress held at Hyderabad, India. (2019)
7) **Poster** entitled "Effect of pericarp in imbibition of Melia dubia seeds" accepted in 10th National Seed Congress" held at IARI, New Delhi, India (2019)
8) Attended ***hands-on- Workshop on NGS data analysis*** – RNA-sequencing data analysis with R programming at the Institute of Bioinformatics and Applied Biotechnology (IBAB), Bangalore, India (2019)
9) Participated in ***Seed World- 2019*** organized by the Indian Council of Food and Agriculture (2019)
10) Presented **poster** titled "Hybridization of mushrooms to enhance yield and disease resistance in cultivated genotypes" in the National Seminar on enterprising mushroom biotechnology organized by the Department of Plant Pathology, TNAU (2017)

RESOURCE PERSON

Served as Resource person in seminar titled "***Common Skills in Botany***" conducted by Pachamuthu College of Arts and Science for Women, Dharmapuri, Tamil Nadu on 4-6-2022.

AWARDS FOR POSTERS AND ORAL PRESENTATION

1) Best **oral presentation award** of 2500 pounds in 13th Triennial Meeting of the International Society of Seed Science (ISSS-2021) conducted by the **Royal Botanic Gardens, Kew (2021)**
2) ***Best poster award*** in107th Indian Science Congress 2020 held at UAS-B, Karnataka, India (2020)
3) ***Best Poster award in International E-Conference*** on "Advances and Future outlook in Biotechnology and Crop Improvement for sustainable production.
4) ***Best Poster award*** in National Seminar on enterprising mushroom biotechnology organized by Department of Plant Pathology, TNAU (2017)

PUBLICATIONS

1) **Satya Srii, V.**, Nethra, N., Ranjitha, H.C. (2023) Plant Biology https://doi.org/10.1111/plb.13551
2) **Satya Srii,V**., Nethra, N., Vasudevan, S. (2022) Crop Science, 62: 1573-1583.

3) **Satya Srii**, **V**., Nethra, N., Umarani, K., Lohithaswa, H.C., Shadakshari, Y.G., Rajendra Prasad, S. (2021) Seed Science and Technology, 49 (3): 193-206.
4) **Satya Srii, V**., Nethra, N., Umarani, K., Sowmya. H, and Devaraju. P.J. (2020) Seed Science and Technology, 48(3): 325-332.
5) **Satya Srii, V**. and Nethra, N. (2022) Mysore Journal of Agricultural Sciences.
6) Satya Srii, V. and Nethra, N. (2023) Biological Forum- An International Journal,15(2):158-163.

Manuscripts in communication

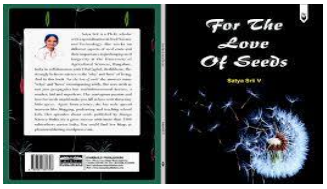
7) **Satya Srii, V.** and Nethra, N (2022) Is the structure of seed coat a reason for longevity? (under review).

Editorial

1. Satya Srii, V., 2023, Seed Science and Technology, 51 (3): 505-512. https://doi.org/10.15258/sst.2023.51.3.18

BOOK with ISBN

I wished to change the perspective people hold for seeds and also encourage kids to love seeds. I wrote the book "***For the love of seeds***", the foreword of which was written by Dr. Kent J. Bradford, USDA, USA and Dr. Nethra, UAS-B, Bangalore. It was published by ***Emerald publishers*** and is published in 2021.



BOOK CHAPTERS in books with ISBN

1) **Satya Srii, V**., Tulja Sanam and Shyam S. Phratyal., (2022) Influence of hormonal priming on seedling growth, development and antioxidant potential performance under abiotic stress. ***Elseviers publishers.*** Book title: Hormonal cross-talk, plant defense and development edited by Dr.Azamal Husen. 273-294.
2) **Satya Srii, V** and N. Nethra. (2022) Application of molecular markers for genetic purity testing of seeds. ***Akinik publishers***. Book title: Advances in Agricultural Biotechnology (vol.7).
3) **Satya Srii, V,** Sowmya, K.S. and N. Nethra. (2022) Nanotechnology in Agriculture. ***Scriprown publishers.*** Book title: Innovative Research and Technology in Agricultural Sciences (vol.6).

MANUALS FOR PH.D COURSES

1. Prepared practical manual for the Ph.D.course SST:608 "Advances in Seed Science Research" offered at the University of Agricultural Sciences, Bangalore, India in 2022 along with Dr. N. Nethra.
2. Prepared practical manual for the Ph.D.course SST:604 "Genetic Purity and DUS testing" offered at the University of Agricultural Sciences, Bangalore, India in 2022 along with Dr. N. Nethra.

POPULAR ARTICLES

1. **Satya Srii, V.** (2022) Advances in Seed Science Research, *Just Agriculture*, 3(4): 1-4.
2. **Satya Srii, V.** (2022) Seed Microsculpture, *Agrobios*, 21 (7): 1-4.

3. **Satya Srii, V.** and Tulja, S (2022) Application of Digital Image Analysis in Seed Science. *Just Agriculture*, 3 (2): 1-4.
4. **Satya Srii, V.** (2022) Gene Editing, *Agrobios*, 21 (6): 1-4.
5. **Satya Srii, V.** and Nethra, N (2022) Synthetic Seeds. *Just Agriculture*, 2 (12): 1-4.
6. **Satya Srii, V.** (2022) Seed Storage Volatile Signatures, *Agrobios*, 21 (5): 24-26.
7. **Satya Srii, V.** (2022) Nanotechnology for Seeds, *Agrobios*, 21 (4): 24-26: 44-4.
8. Tulja, S., **Satya Srii, V**., Santosh Nagappa Ningoji and Laikhuram Sarda Devi (2022) Cultivation of microalgae- As biological sources of lipids and hydrocarbons. *AgriGate*, 2(4):17-22.

TEACHING EXPERIENCE

Handled Practicals and Theory of Ph.D course SST:608 "Advances in Seed Science Research" offered at the University of Agricultural Sciences, Bangalore, India in 2022.

Handled Practicals and Theory of Ph.D course SST:604 "Genetic Purity and DUS testing" offered at the University of Agricultural Sciences, Bangalore, India in 2022.

REVIEWER EXPERIENCE

Served as reviewer for international journals like Seed Science and Technology, Peer J, Current Science.

EXTRACURRICULAR ACTIVITIES

1) **Reading books** –I read a diverse range of science non-fiction in astrophysics, quantum physics, quantum biology, evolution, environmental sciences, psychology, biology, and also Vedas.

2) **Writing**- While reading is my hobby, writing is my passion. So, I try to write on all platforms and diverse thoughts as possible. I am a blogger. I write science blogs for the ***"Scientistt community"*** on their blog page at https://scientistt.net/. The Scientistt community has researchers across the globe from around 50 universities comprising around 1200 members. Here are a few recent science blog links.

https://scientistt.net/blogs/857/16/the-language-of-bird-s-eye (A blog on crytochrome and quantum entanglement in Robins)

Also, You can read my personal blogs on my blog page 'Joy of Little Things' through this link – pleasureofsharing@wordpress.com.

3) Twitter- I post a seed fact everyday on my twitter under the hashtag #afactaday on my Twitter page @srii_satya and it has reached around **1235 seed facts**.

Social interests

- In my Ph.D., I got linked with a group in Tamil Nadu "***Mango education***" who does teaching science to kids as a profession. That group asked me to contribute to their ***radio***. Then started ***Seed Series and more than 45 episodes on seeds and plants*** have been published yet. Here is the link to it - https://themango.co/hello-educator/.
- I and my friend also started a small group called **"Lets Explore"**. The aim of that was to reach public sector schools in rural areas and teach those kids science and the way to look at it. We conducted weekend classes besides our research work.