Name: Dr. Siddanna Savadi

Photo: Your Photo (Minimum 1 MB size; better if it is taken in the field or working with specimen/equipment, etc.; attach it separately)

Year of Birth: 1983

Qualification and subject: Ph.D. (Molecular Biology & Biotechnology)

Present Position: Senior Scientist (Plant Biochemistry)

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Brief Work Experience (200 words):

My research has focused on biotechnology and genetic improvement of cashew and wheat over a period of 10 years. We accomplished the first *de novo* genome assembly of the Indian cashew cultivar Bhaskara using Nanopore and Illumina sequencing platforms, generating a 356 MB genome. This effort provided the first comprehensive genomic and molecular marker resources for cashew, including SSR and InDel markers. I contributed to the development and release of two jumbo nut cashew varieties, Nethra Ganga and Nethra Jumbo-1, and the first dwarf cultivar, Nethra Vaman. A rapid SSR-based method was established to assess the genetic purity of interspecific hybrids at the seedling stage. Our studies on ultra-density planting and phenological characterization using the BBCH scale have supported improved crop production and management in cashew. Several unique cashew germplasm lines were characterized and registered with the nodal agency, and different mapping populations for yield and nut traits have been developed.

In wheat rust research, we developed SSR and transcriptome-based markers for rust pathogens, explored gene expression in plant–pathogen interactions, and identified three new *Puccinia striiformis* pathotypes (111S68, 79S68, 79S4). These works have strengthened genomic research and varietal development in cashew and contributed to improved resistance and disease management strategies in wheat.

Current Areas of Interest (three to four bullet points)

- Genetic dissection of QTLs controlling nut yield and cashew nut shell liquid (CNSL) content for advancing trait-based genomic selection and breeding.

- Molecular analysis of cashew–tea mosquito bug (TMB) interactions to elucidate host defense mechanisms and identify pathogen effectors for developing resistant varieties.

- Comprehensive biochemical profiling of cashew cultivars and germplasm to characterize valuable compounds and explore biofuel production from cashew biomass.

- Establishment of state-of-the-art facilities for speed breeding and omics resource development to enhance genetic improvement and accelerate cashew breeding programs.

Current Projects (Only titles of the projects where you are the PI, including external projects)

In-house projects:

1. Genetic dissection of QTLs governing nut yield and cashew nut shell liquid (CNSL) content in cashew [06/2018-05/2025]
2. Deciphering the molecular basis of Cashew-TMB interactions to understand host response and TMB effectors
3. Profiling of important biochemicals in cashew cultivars and germplasm and exploration of biofuel production potential from cashew tree wastes (10/2025-09/2029)

External projects

1. Establishment of state-of-the-art facilities for Speed Breeding and Omics resources for accelerating cashew breeding (10/2024-09/2026)

Publications (Only numbers in various categories such as research papers, short communications, books, policy documents, radio talks, TV interviews, etc.)
Research papers: 55
Short communications: 1
Books: 2
Book chapters:11
Popular articles: 6
Others: 3
Representative Research Papers (only five recent ones)

Savadi, S., Manoj, K., Ashwitha, K., Muralidhara, B. M., Manjunatha, K., Eradasappa, E., and Adiga, J. D. (2025). Morpho-biochemical and molecular characterization of accessions with unique traits as potential genetic stocks for cashew improvement. *Genetic Resources and Crop Evolution*, 72(1), 1219-1238.

Savadi, S., Mohan, G., Manoj, K., Manuel, M., Muralidhara, B. M., Mog, B., & Adiga, J. D. (2025). Microsatellite markers development and molecular fingerprinting of cashew cultivars. *Molecular Biology Reports*, 52(1), 34.

Manjunatha, K., **Savadi, S.***, Naik, R., Balasubramanian, D., Adiga, J. D., Muralidhara, B. M., and Anilkumar, C. (2024). Investigation on torsional forces and angles at the nut and pedicel junction (NPJ) revealed varying cashew apple (hypocarp) and nut separation efficiency at different developmental stages in cashew. *Industrial Crops and Products*, 222, 119951.

Savadi, S., Adiga, J. D., Muralidhara, B. M., Prasad, P., Manjunatha, K., Ashwitha, K., and Manoj, K. (2023). Discovery of genome-wide genetic variations and development of first set of InDel markers for genetics research in cashew. *Scientia Horticulturae*, 320, 112233.

Savadi, S., Muralidhara, B. M., Venkataravanappa, V., & Adiga, J. D. (2023). Genome-wide survey and characterization of microsatellites in cashew and design of a web-based microsatellite database: CMDB. *Frontiers in Plant Science*, 14, 1242025.

Awards/recognitions, etc.

- Best paper award-2025 in the 7th International Conference on Bioenergy, Environmental and Sustainable Technologies held during 29-31 January 2025 at Arunai Engineering College, Thiruvannamalai, Tamil Nadu, India
- Young Scientist award-2024 in the International Conference on Advances and Applications of Biotechnology (ICAAB 2024) Organized by School of Life Sciences, B.S. Abdur Rahman Crescent Institute of Science and Technology, Chennai in association with University of East London, UK Tamil Nadu State Council for Science and Technology, National Council for Science & Technology Communication, Department of Science and Technology, Govt. of India held on July 30 & 31, 2024.
- Young Scientist Award (2019): Society for Biotic and Environmental Research (SBER), Salem, TN (2019)
- MJ Narasimhan Medal for Best research paper published in Indian Phytopathology 2017: Gangwar OP., Subodh K., Bhardwarj SC., Prasad P., Khan H., Savadi S. & Sharma, SK. (2017). Detection of new Yr1-virulences in Puccinia striiformis population and its sources of resistance in advance wheat lines and released cultivars. Indian Phytopathol, 70(3), 307-314.
- SADHNA Young Achiever-2017 award
- Jawaharlal Nehru Award for P.G. Outstanding Doctoral Thesis Research in Agricultural and Allied Sciences (2016)
- IARI Merit Medal for Outstanding Academic Performance during Ph.D. (2016)
- Gold medal for securing highest aggregate marks in Bachelors degree program (2005)

- Junior Research Fellowship, Department of Biotechnology, Govt. of India, (for pursuing Post graduation, 2005-2007)
- Senior Research Fellowship (First rank in ICAR-SRF exam), Indian Council of Agricultural Research, (for pursuing Ph.D., 2009-2012)
- Merit Scholarship, College of Agriculture, Bijapur, UAS Dharwad (for pursuing Graduation, 2001-2005)