NAGALAKSHMI RAMANATHAN

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Current Position

Assistant Professor,

Sethu Baskara Agricultural College and Research Foundation,

TamilNadu Agricultural University,

TamilNadu, India.

Education

Ph.D, Plant Breeding and Genetics

Centre for Plant Breeding and Genetics,

TamilNadu Agricultural University,

Dissertation : Introgression of *crtRB* 1 gene to an elite Maize (Zea mays L.) inbreds through marker assisted backcross breeding.

M.Sc, Plant Breeding and Genetics

Agricultural College and Research Institute, Madurai.

Dissertation : Studies on genetic diversity in cowpea using biometrical traits and molecular markers.

B.Sc, Agriculture

Agricultural College and Research Institute, Killikulam.

Grants and Awards

- Research assistantship for Doctoral research - "Enrichment of nutritional quality in maize through molecular breeding" by the Department of Biotechnology, Government of India, 2015-2019
- Best Young scientist Award – TamilNadu Scientific Research Organisation, India, 2019-20
- Dr APJ Abdul Kalam Young Scientist Award – MS Swaminathan Research Foundation, India, 2021-2022

Work experience

MS Swaminathan Research Foundation – SRF (01/2011 - 03/2012)

Worked as team leader for the project entitled "Strengthening of rural families through empowerment by introducing food security through production, processing and value addition of regional staple food grains" at Kolli hills, TamilNadu, India

International Centre for Research in Semiarid Tropics SRF (09/2012 - 04/2013)

Involved in interspecific and intergeneric hybridization of sorghum. Attempts were made to transfer the *iap* allele of wild sorghum which makes wide crosses easier to cultivated sorghum varieties.

Mother Teresa College of Agriculture (08/2019 – 10/2021)

Handled undergraduate courses Introduction to Agricultural Botany, Fundamentals of Genetics, Fundamentals of Plant Breeding and Fundamentals of Crop Physiology.

Publications

Research Papers

P. Bharathi, M. Dhasarathan, A. Karthikeyan , M. Sandesh, **RM Nagalakshmi** , C. Sarankumar, S. Vellaikumar, R. Ravikesavan, A. Kavithapushpam, S. Kalaiselvi, M. Vignesh, H. Firoz and N. Senthil. 2020. Marker aided introgression of opaque 2 (o2) allele improving lysine and tryptophan in maize (Zea mays L.). Physiology and Molecular Biology of Plants. 9(26):1925–1930.

C. Neelima, **RM Nagalakshmi**, P. Bharathi, C. Sarankumar, M. Dhasarathan, A. Karthikeyan , N. Ganesan, M. Sudha, R. Ravikesavan, S. Vellaikumar, M. Vignesh, H. Firoz and H S Gupta and N Senthil. 2022. Development of β-carotene, lysine, and tryptophan-rich maize (Zea mays) inbreds through marker-assisted gene pyramiding. Scientific Reports. 12:8551

RM Nagalakshmi , K. Bharathi, M. Sandesh, P. Bharathi, C. Sarankumar, R. Ravikesavan, V. Paranidharan, N. Manivannan and N. Senthil. Marker assisted introgression of crtRB1 gene to improve β-carotene content of maize inbreds. Journal of Plant Biochemistry and Biotechnology – **Processing.**

RM Nagalakshmi, R. Usha Kumari and MB Boranayaka. 2010. Assessment of genetic diversity in cowpea (*Vigna unguiculata*). Electronic Journal of Plant Breeding, 1(4): 453-461.

RM. Nagalakshmi, Ravikesavan, V. Paranidharan, N. Manivannan, H. Firoz , M. Vignesh and N. Senthil. 2018. Genetic variability, heritability and genetic advance studies in backcross populations of maize (*Zea mays* L.) Electronic Journal of Plant Breeding, 9 (3) : 1137 – 1145.

RM Nagalakshmi, R. Usha Kumari and C R Anandakumar. 2020. Correlation and path analysis in cowpea (*Vigna unguiculata*). The Bioscan. 15(3): 397 – 401.

Nagalakshmi RM, Kavitha Mary J, Ananda Kumar CR and Usha Kumari R. Genetic Diversity in Cowpea (Vigna unguiculata L.), Using RAPD Markers. 2017. Journal of Pharmacognosy and Phytochemistry. 6(6): 1632-1635.

RM. Nagalakshmi, R. Ravikesavan, V. Paranidharan, N. Manivannan, H. Firoz , M. Vignesh and N. Senthil. 2018. Frequency Distribution Analysis in Maize (*Zea may*s L.) Back Cross Populations. Research Journal of Agricultural Sciences. 9(6): 1270-1274.

Saran S, Sowmya M, Surya Kiruba M, Surya S Nair and **Nagalakshmi RM**. 2022. Studies of genetic diversity, correlation and path analysis in Black gram (*Vigna mumgo*). Journal of Pharmacognosy and Phytochemistry

Book chapters

RM. Nagalakshmi, K Shamini and R Sangeetha Vishnu Prabha. 2022. Role of ploidy in evolution of crop plants. Recent advances in Agricultural sciences. Shanlax Publishers. pp 77-88.

RM. Nagalakshmi, K Shamini and R Sangeetha Vishnu Prabha. 2022. Mutation Breding and its role in crop improvement. Recent advances in Agricultural sciences. Shanlax Publishers. pp 105-117

K Shamini, R Sangeetha Vishnu Prabha and **RM. Nagalakshmi.** 2022. Advanced crop improvement approaches in pulses. Recent advances in Agricultural sciences. Shanlax Publishers. pp 1-17

R Sangeetha Vishnu Prabha, K Shamini and **RM. Nagalakshmi** 2022. Site directed mutagenesis in crop improvement. Recent advances in Agricultural sciences. Shanlax Publishers. pp 29-46

RM. Nagalakshmi. 2023. Seed production techniques in gherkins. Seed production techniques at a glance. Jaya publication house. New Delhi.

Popular articles

RM. Nagalakshmi, R Sangeetha Vishnu Prabha and K Shamini. 2022. Bioethanol production from banana pseudostem. 2022. Readers shelf. 18(5): 17-18

RM. Nagalakshmi, R Sangeetha Vishnu Prabha and K Shamini. 2022. Biofortification of maize. 2022. Readers shelf. 18(5): 30-32

K Shamini, **RM Nagalakshhmi** and R Sangeetha Vishnu Prabha. 2022. Golden rice – An application of genetic engineering to eradicate malnutrition in human. Readers shelf. 18 (11): 12-15

Quality breeding in forage crops for livestock. 2023. R Sangeetha Vishnu Prabha, **RM. Nagalakshmi** and K Shamini. 19 (4): 7-9

Trainings and Conferences

- THIRD NATIONAL CONGRESS ON PLANT BREEDING AND GENOMICS .(7/7/2010– 7/7/2010) at TNAU, Coimbatore, organized by ISPB (Poster).
- INDIA BIO (2/6/2010-6/6/2010) at Bangalore, organized by Vision Group On Biotecchnology (Poster)
- ELEMENTAL ANALYSIS MADE SIMPLE FOR AGRICULTURE SCIENTISTS: X-RAY FLUORESCENCE SPECTROMETER (XRF) (27/10/2016) at Agricultural College And Research Institute, Madurai, organized by Centre Of Innovation, Department Of Biotechnology, Agricultural College and Research Institute, Madurai.
- APPLICATIONS AND INNOVATIONS IN NUCLEIC ACIDS AND PROTEIN RESEARCH (AINPR) (21/12/2016-22/12/2016) organized by Centre Of Innovation, Department Of Biotechnology, Agricultural College and Research Institute, Madurai.
- GC-MS ANALYSIS PLATFORMS FOR METABOLOMICS: A WAY TO UNDERSTAND COMPLEX BIOLOGICAL PATHWAYS (14/2/2017) organized by Centre of Innovation, Department of Biotechnology, Agricultural College and Research Institute, Madurai.
- EFFECT OF CEREAL GRAIN PRIMARY PROCESSING & QUALITY IN AGRICULTURE & FOOD INDUSTRY (28/3/2017) organized by Centre of Innovation, Department of Biotechnology, Agricultural College and Research Institute, Madurai
- INTERNATIONAL CONFERENCE ON SCIENCE AND TECHNOLOGY: RURAL DEVELOPMENT (3/1/19-7/1/19) Organised by Indian Science Congress Association (Poster)
- APPROACHES TOWARDS HUNGER FREE AND NUTRITION SECURE NATION (16/10/2019) organised by Community Science College and Research Institute, Madurai. (Poster)

- INTERNATIONAL CONFERENCE ON PROTEOMICS FOR SYSTEM INTEGRATED BIO-OMICS, ONE HEALTH AND FOOD SAFETY (28/11/2019-1/12/2019) organised by Proteomics Society, India
- NATIONAL YOUTH SCIENCE CONFERENCE FOR SUSTAINABLE DEVELOPMENT (28/02/2020) organised by BOSS Science Society (Oral presentation)
- NATIONAL CONFERENCE AND AWARD CEREMONY ON INNOVATION IN SCIENCE, AGRICULTURE AND ADAPTATION TO CLIMATE CHANGES (28/04/2021) Organised by MS Swaminathan Research Foundation and CABI – Plantwise (Poster)