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## Professional Summary

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My journey in spice research began during my postgraduate studies, with the investigation of biomass production and the partitioning of photosynthates in ginger (*Zingiber officinale* R.) under varying shade levels. Photosynthetic efficiency was assessed using a CO<sub>2</sub> analyzer, while radiotracer techniques involving <sup>14</sup>C were employed to study photosynthate partitioning. During my PhD, I examined the effects of organic manures and microbial inoculants on the growth, yield, and quality of ginger. The outcomes of this research were incorporated into the **Package of Practices Recommendations of Kerala Agricultural University (KAU)**. I joined as Agricultural officer in the Department of Agriculture and Farmers' welfare and served for 6 years.

Subsequently, I joined the Kerala Agricultural University on 2009 at Cardamom Research Station (CRS), Pampadumpara, under the All India Coordinated Research Project on Spices (AICRPS).

## Academic Achievements

- **Involved in the development and release of two small cardamom varieties, PV3 and PV5.**
- **Spearheaded the modernization of CRS farms and initiated rapid multiplication techniques for the production of planting materials.**
- **Agricultural exhibition** at Gandhi Mission, Cherukode, Mulayara, as part of Gandhi Jayanti celebrations, showcasing KAU's organic and sustainable agricultural techniques
- **National Webinar on Spice Improvement, Processing and Marketing**
- **Workshop on Virus Indexing in Horticultural Crops** (under RARS-SZ, Vellayani)
- **International Seminar on Spices** at the College of Agriculture, Vellayani. The seminar proceedings were published in *Plant Science Today*, which holds a **NAAS rating of 6.9 (as of 2025)**.
- **Industry Meet at College of Agriculture, Vellayani on 24 May, 2024.**
- In the academic realm, I have taught spice-related courses to **undergraduate, postgraduate, and doctoral students at the Department of Plantation, Spices, Medicinal and Aromatic Crops, College of Agriculture, Vellayani.**
- Established a **mother plant block of black pepper and nutmeg**
- **Established germplasm of black pepper, clove and ginger**
- **Started a Spice Museum at College of Agriculture, Vellayani**
- Established **Hi-tech polyhouse with hydroponic facilities.**
- Initiated a **revolving fund scheme** for the production of planting materials and value-added products from spice, plantation, medicinal, and aromatic crops.
- **Consultancy services** were provided to Merchinston Estate and Braemore estate and is now continuing to Ponmudi Estate for plantation management
- Identified **two high-yielding clove genotypes** from the Southern Western Ghats

- **Sequenced the 18S ribosomal RNA region** of four high-yielding *Syzygium aromaticum* genotypes and submitted Nucleotide to NCBI
- Isolated **microorganism** and **developed a protocol for white pepper production** using microbial technology and the *Bacillus pumilus* strain, 16S ribosomal RNA gene, partial sequence and deposited in NCBI.
- Standardised fermentation and centrifugation method for the production of virgin coconut oil.
- Validated smart farming practices in turmeric.
- Currently, my research focuses on **standardizing drip fertigation** and **developing smart farming technologies** to enhance productivity and sustainability in spice cultivation.

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To date, I have authored **about 50 research papers, 6 textbooks, and 5 book chapters.**

## Experience

Joined Kerala Agricultural University as Assistant Professor (Horticulture) in the year 2009 and has 15 years of experience in teaching and research.

## Education

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- Graduated in BSc (Agriculture) from Kerala Agricultural University (1996)
  - Post Graduation in MSc( Horticulture) from Kerala Agricultural University (1999)
  - Ph.D in MSc( Horticulture) from Kerala Agricultural University (1999)
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## Area of Specialization

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Crop Management and Breeding of Spices.

## Awards & Recognitions

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- ICAR- Junior Fellowship for doing MSc in Horticulture
  - Won the best presentation of research paper on the National Seminar on “Emerging Trends in Sensor Technology for the Environmental Studies” on 21-22 june, 2005 sponsored by UGC
  - Co authour of Oral presentation on International Seminar on Spices KAU ( ISSK 2024) on Spices which bagged second prize: Innovative and Green Technologies for Sustainability. Regional Agricultural Research Station (Southern Zone), College of Agriculture, Vellayani, June 5 -7 2024, Shibana, S.N., Deepa S. Nair, G.S.Sreekala, P. Shaini Pillai, Swapna Alex, K.N. Anith and Ancy Joseph. 2024. Growth, yield and secondary metabolite elicitation in response to chitosan application in turmeric ( *Curcuma longa* L).
  - Co- author of Oral presentation on International Seminar on Spices KAU ( ISSK 2024) on Spices: Innovative and Green Technologies for Sustainability which bagged third prize. Regional Agricultural Research Station (Southern Zone), College of Agriculture, Vellayani, June 5 -7 2024, S.G.Silpa, G.S.Sreekala, Deepa S. Nair, Roy Stephen, Swapna Alex, Suhara Beevy,S. and Beena Thomas 2024. In vivo induction of heteroploids in ginger.
  - Co - author of poster presentation on International Seminar on Spices KAU ( ISSK 2024) on Spices: Innovative and Green Technologies for Sustainability which bagged second prize. Regional Agricultural Research Station (Southern Zone), College of Agriculture, Vellayani, June 5 -7 2024,

Shanila, G.S.Sreekala., Deepa S. Nair., P. Reshma. 2024. Poster- Planting methods and substrate for leafy coriander in NFT hydroponics under protected environments.

- Best Horticulturist award during the 5<sup>th</sup> International Conference (February 20-21, 2025) organised by Agri Meet Foundation, Bharat in collaboration with ICAR New Delhi, Southern Federal University Russia, ICARDA Lebanon, ICAR ATARI Jabalpur, Viswa Bharati Shantiniketan WB, ICAR DCR Puttur Karnataka, ICAR NDRI Karnal, MHU Karnal, SKLTSHU Telangana, MGUVV Durg Chhattisgarh, UBKV West Bengal & NABARD which will be conducted in a hybrid format at a venue of BGGI, Sangrur Punjab IKG Punjab Technical University, India.
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## Research Projects

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### Completed

1. All India Coordinated Research Project on Spices - projects at Cardamom Research Station, Pampadumpara , Kerala Agricultural University from 5/8/2009 to 5/3/2011.
2. All India Coordinated Vegetable Improvement Programme projects from 6/3/2011 to 31/1/2012 at Department of Vegetable Science, College of Horticulture, Vellanikkara , Kerala Agricultural University
3. Product standardization of jack sharkaravaratty - KAU Non Plan
4. Initial Evaluation Trial of ginger genotypes for yield and quality - KAU Non Plan
5. Comparative Field trials of ginger genotypes for yield and quality - KAU Non Plan
6. Protocol development for white pepper production - KSCSTE
7. Germplasm collection, evaluation and evolving management practices for regular bearing in clove (*Syzgium aromaticum* ( L) Merr & Perry) accessions. Annual State Plan 2018-19, Government of Kerala
8. Establishment of mother plant blocks of spice plants- Annual State Plan 2020-21, Government of Kerala for Rs 2.5 lakhs
9. Development and evaluation of polyploids and superior genotypes in ginger (*Zingiber officinale* Rosc) for yield and resistance to rhizome rot. Annual State Plan 2020-21, Government of Kerala for Rs 2 lakhs
10. Production and quality evaluation of freeze dried coconut. Annual State Plan 2021-22 for 1.5 lakhs
11. Establishment of Hi-Tech spice nursery of State Horticulture Mission, Kerala, 2021-22 for Rs 18 lakhs.
12. Validation of precision farming techniques in turmeric (*Curcuma longa* L.)- Annual State Plan 2023-24 Station wise project, Government of Kerala for 0.5 lakhs.
13. International Seminar on Spices –KAU-2024 – 19 lakhs
14. Revolving fund scheme - Planting material production and value addition of spice, plantation, medicinal and aromatic crops 2025.Rs 2 lakhs
15. Standardization of Optimum Dose of Fertilisers and Mulch in Ginger and turmeric- Annual State Plan Project- 24-25. Government of Kerala. Rs 3 lakhs.
16. Fabrication of Cashew nut and apple plucker and separator. Annual State Plan Project- 24-25. Government of Kerala. Rs1 lakh.

### Co- Investigator

1. Annual Plan Project 2022-23- Multidisciplinary and multi-institutional network project on identification of drought tolerant landraces of black pepper (*Piper nigrum* L.) and microbial screening for drought tolerance ( Project Coordinator – Dr. Roy Stephen, Co PI- Dr Sreekala G.S.)2022-23 to 24-25) till now 8 lakhs

2. Annual Plan Project 2020-21- Chitosan mediated elicitation of plant growth and alleviation of biotic stress in Black pepper (*Piper nigrum* L.) PI- Dr.Deepa S. Nair Co PI Dr. Sreekala G.S.
3. Biodiversity Board Project titled “Ecological restoration and agrobiodiversity conservation at CoA,Vellayani for a total estimated cost of Rs. 125 lakhs, subproject on ‘Germplasm collection and maintenance of spice crops’ .pi- Dr. Beena R. Co PI- Dr. Sreekala G.S.
4. Annual State Plan Project – 2023-24- Agri-Innovation cum Incubation Centre at CoA Vellayani 10 lakhs PI- Dr. Roy Stephen, Co PI- Dr.Sreekala G.S.
5. Annual State Plan Project – 2024-25. Centre for Digital Agriculture at the College of Agriculture, Vellayani.” A total amount of Rs. 10 lakhs PI- Dr. Roy Stephen, Co PI- Dr.Sreekala G.S
6. Annual State Plan Project – 2024-25. Centre for Interdisciplinary Research at College of Agriculture, Vellayani - Rs. 8 lakhs PI- Dr. Roy Stephen, Co PI- Dr.Sreekala G.S

## Publications

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### Journal Articles

1. Photosynthates rate and related parameters of ginger under different shade levels, *Journal of Plantation Crops*.29930: 50-52, 2002.
2. Influence of shade regimes on the physiological parameters of ginger, *Journal of Spices and Aromatic Crops*. 11(1): 30-34, 2002.
3. Effect of organic manures and microbial inoculants on nutrient uptake, yield and nutrient status of soil in ginger intercropped coconut garden. *Journal of Plantation Crops and Spices*. 2006.34(1): 25-31
4. Marketing Scenario of fruits and Vegetables in Kerala. *Journal of Agricultural Extension Management*.Vol.X11.Jan- June 2011. No.1 pp.69-76.
5. Sreekala,G.S. and Sulekha,G.R.2013. Value added products from coconut. Launching of Keramrutham.6-11-2013.Souvenir.College of Agriculture, Vellayani, Kerala Agricultural University.28-32.
6. Sreekala,G.S. 2015. Effect of organic manures and biofertilisers on nutrient status of soil in ginger intercropped in coconut garden. *International Journal of Current Research*. 7(3): 13694-13698.
7. Sreekala,G.S. and Sonia, V. 2015. Effect of pretreatments and curing methods on the flavor profile of essential oil of processed small cardamom ( *Elettaria cardamomum*( L.) Maton. *International Journal of Applied and Pure Science and Agriculture* 1(2): 97-110.
8. Jayasheela, D.S. Sreekala, G.S., Meenakumari, K.S. and Subba,A, 2015.Effect of different sanitizing agents on reducing the post harvest loss in papaya ( *Carica papaya* L.) variety Coorg Honeydew for local market. *Int. J. Trop. Agri*. 33 (2); 405-407.
9. Jayasheela, D.S. Sreekala, G.S., Mini, C. and Subba,A, 2015.Post harvest management of papaya variety Coorg Honeydew for distant market. *Int. J. Trop. Agri*. 33( 2); 409-414
10. Jayasheela,D.S., Sreekala, G.S. and Prasanth, K.2015. Value addition of Banana: key roles to minimize post harvest losses. *International Journal of Advanced Research* 3(5): 833-835.
11. Jayasheela, D.S. Sreekala, G.S., Mini,C., Jayachandran Nair , C.S. and Meenakumari, K.S.2016.Post harvest management of papaya. *Res. Environ. Life Sci*. 9(1): 120-123.
12. Thanuja,T.T. Sreekala,G.S.2015.Effect of drying temperature on quality of virgin coconut oil produced by fermentation method.*Trends in Biosciences* 8(19) : 5279-5285.
13. Thanuja,T.T. Sreekala,G.S.2016.Production technologies of virgin coconut oil: a review. *Advances in Life Sciences* 5(10) :3932- 3936.

14. Thanuja,T.T. Sreekala,G.S. and Meenakumari, K.S.2016. Isolation of microorganism from the fermented coconut milk and comparison of quality parameters of virgin coconut oil recovered by induced fermentation. *International Journal of Advanced Research* 4 (6): 1927-1934.
15. Sonia,N.S., Jessykutty, P.C. and Sreekala,G.S.2017. Effect of pretreatments and drying methods on nutrient composition and sensory quality of milk yam( *Ipomoea digitata* L. ) tuber powder. *International Journal of Processing and Post Harvest Technology*. 8(2): 75-82.
16. Sonia, N.S., Jessykutty, P.C. and Sreekala,G.S.2017. Effect of pretreatments and drying methods on milk yam ( *Ipomoea digitata* L. ) tuber powder preparation tuber powder. *International Journal of Medicine and Pharmaceutical Science* 7(4): 7-14.
17. Sandra, M.M. and Sreekala, G.S. 2018. Effect of mulch and nutrients on growth and yield in transplanted ginger. *Agricultural Research Communication Centre* 53(6) : 693-697
18. Sandra, M.M. and Sreekala, G.S. 2018. Effect of plastic mulch on suppression of weeds in transplanted ginger. *Journal of Pharmacognosy and Phytochemistry* 7(6) : 1244-
19. Aparna, K. and Sreekala G.S.2018.Chlorophyll status in leaves of coconut palms (*Cocos nucifera* L.) showing general yellowing. *International Journal of Pure and Applied Bioscience* 696 : 1254-1257 .
20. G.S. Sreekala, K.S. Meenakumari and S. Vigi.2019. Microbial isolate for the production of quality white pepper (*Piper nigrum* L.)". - *Journal of Tropical Agriculture* , 57 (2): 114-121.
21. Genetic variability, correlation and path analysis in ginger (*Zingiber officinale* Rosc.) genotypes Anargha,T., Sreekala, G.S., Nair, D.S. and Abraham, M. *Journal of Tropical Agriculture* , 58 (2): 168-178, 2020
22. Growth and Yield responses of Ginger (*Zingiber officinale* Rosc.) varieties to elevated CO<sub>2</sub> R. Manasa,R. V. Manju , Roy Stephen , M. M. Viji , R. Beena and G. S. Sreekala. *Chem. Sci .Rev. Lett.* 2020, 9 (33): 34-39
23. Effect of physical seed pretreatments on morphology and yield of *Ocimum basilicum* L. Akhilraj B.C., Deepa S Nair, Sreekala G.S., Anith K.N and Sajitharani, T., *Journal of Pharmacognosy and Phytochemistry* 2020, 9(5): 1254-1257
24. Sandra Merin Mathew and Sreekala, G. S. 2021. Effect of Mulch and Nutrients on Yield and Physiological Parameters in Transplanted Ginger . *International Journal of Current Microbiology and Applied Sciences* ISSN: 2319-7706 Volume 10 Number 10 (2021) Journal homepage: <http://www.ijcmas.com>
25. Pooja S., Sreekala G. S. and Vijaykumar B. 2021.Pollen Germination and Morphology of Black Pepper (*Piper nigrum* L.) *Biological Forum – An International Journal* 13(4): 1134-1140
26. Ajil, M.S., Deepa S. Nair, Sreekala.G.S. and Swapna Alex.2022. Propagule selection and pretreatment for nursery plant establishment of *Symplocos cochinchinensis* (Lour.) S. Moore.*Medicinal Plants - International Journal of Phytomedicines and Related Industries* 14(3):429-440
27. Reshma P, Sreekala GS, Nainu Joseph, Deepa S Nair, Roy Stephen and Thomas George. 2022. Principal component analysis for yield and yield attributes in black pepper (*Piper nigrum* L.). *The Pharma Innovation Journal*. 11(11): 1055-1062.
28. Reshma P, Sreekala GS, Nainu Joseph and Neethu RS. 2022. Characterization and Grouping of Black Pepper (*Piper nigrum* L.) Cultivars of Kerala based on Morphological Traits. *J. Agric. Technol.* 9(1 & 2): 5-11.
29. Reshma P, Neethu RS and Sreekala GS. 2022. Genetic diversity of black pepper (*Piper nigrum* L.) in India: A review. *Pharma Innov. J.* 11(10): 832-839.



30. Sonia N.S., Sreekala G.S. 2023. Developmental morphology of tuberisation in milk yam (*Ipomoea digitata* L.). *Medicinal Plants - International Journal of Phytomedicines and Related Industries* 15(3): 562- 570 . DOI : [10.5958/0975-6892.2023.00056.4](https://doi.org/10.5958/0975-6892.2023.00056.4)
31. Pooja S. , Sreekala G.S., Vijaykumar B. Narayanapur , Sreekala A.K. , Deepa S. Nair and Sujatha V.S. 2022. Floral Morphology and Floral Phenology of *Piper nigrum* L. *Biological Forum – An International Journal* 14(1): 1779 - 1787
32. Manisha Elza Jacob, Deepa S Nair, Sreekala GS, Swapna Alex, Sajitha Rani T, Viji MM. 2023. Effect of chitosan foliar spray on plant growth parameters in Ashwagandha. *Pharma Innovation*. 12(9):1393-1398.
33. Silpa SG, Sreekala GS, Deepa S Nair. Variability studies in ginger. *Pharma Innovation* 2023;12(11):1207-1210.
34. Silpa SG, Sreekala GS, Deepa S Nair and Beena Thomas. *In vitro* induction and identification of heteroploids in ginger. *The Pharma Innovation Journal*. 2023; 12(9S): 1258-1268.
35. Shibana S. N., Nair, D. S., Sreekala G. S., Shalini Pillai P., Alex, S., & Joseph , A. 2023. Application of Chitin Improves Growth, Yield and Secondary Metabolite Production in Turmeric (*Curcuma longa* L.). *International Journal of Environment and Climate Change*, 13(12), 1108–1117. <https://doi.org/10.9734/ijeccl/2023/v13i123775>
36. Sreekala, G.S., Avinash, M., Reddappa, J.B., Reshma, P., Nainu, J., and Anargha, T. 2025. South Western Ghats of India: A niche of clove (*Syzygium aromaticum* (L.) Merr. & Perry) diversity. *Plant Sci. Today* 12(1): 1-10. DOI: <https://doi.org/10.14719/pst.3405>
37. Sreekala. G.S., Avinash, M. Reshma, P., Reddappa J.B., Anargha T., Nainu Joseph and Deepa S. Nair .2024. Genomic variation in self pollinated clove( *Syzygium aromaticum* ( L) Merr . & Perry ) accessions from the western ghats). *Plant Science Today* 11(sp3) : 301-309
38. Reshma, P., Sreekala, G.S., Deepa, S.N., and Roy, S. 2024. Genetic diversity assessment of black pepper (*Piper nigrum* L.) cultivars of Western Ghats. *Plant Sci. Today* 11(sp3): 216-229. DOI: <https://doi.org/10.14719/pst.4816>
39. Reddappa, J.B., Sreekala, G.S., Reshma, P., and Deepa, S.N. 2024. Floral phenology and standardization of hand pollination of clove (*Syzygium aromaticum* (L.) Merr. & Perry). *Plant Sci. Today* 11(sp3): 289-300. DOI: <https://doi.org/10.14719/pst.4872>
40. Sreekala, G.S., Avinash, M., Reshma, P., Reddappa, J.B., Anargha, T., Nainu, J., and Deepa, S.N. 2024. Genomic variation in self-pollinated clove (*Syzygium aromaticum* (L.) Merr. & Perry) accessions from the Western Ghats. *Plant Sci. Today* 11(sp3): 301-309. DOI: <https://doi.org/10.14719/pst.4453>
41. Reshma P and Sreekala GS. 2023. Robotics in Agriculture. *Trends in Agriculture Science*. 2(11): 1146-1149. <https://doi.org/10.5281/zenodo.10841849>
42. Reddappa, J.B., Sreekala, G.S. and Reshma, P. 2022. Agro-morphological diversity of clove in India. *J. Agric. Technol*. 9(1&2): 37-40.
43. Smija, P.K., Neetha Rose, C.D., Stephen, R., Sreekala, G.S., Gopinath, P.P., Chadar, Y. 2025. Smallholder farmer's preferences for sustained participation in high-value markets for black pepper in Kerala, India. *Plant Sci. Today* 11(sp3): 349-361. DOI: <https://doi.org/10.14719/pst.4894>
44. Krishnan, Lekshmi R. Johnson, Joy Michal, Radhika N.S., Sreekala G.S. Thara, Sussha S. , Alex, Swapna. 2022. *Piriformospora indica* suppresses Piper yellow mottle virus infection in black pepper rooted cuttings. *Journal of Tropical Agriculture* 60(2): 264 – 273.
45. Bommana Divya , Heera G. , Joy Michal Johnson , Radhika N.S. and Sreekala G.S. 2022. Efficacy of New Generation and Combination Fungicides under in vitro for the Management of Anthracnose of Nutmeg (*Myristica fragrans* Houtt.) *Biological Forum – An International Journal* 14(2): 1206-1210.

46. Shanila, Sreekala G.S., Deepa S. Nair, Roy Stephen and Pratheesh P. Gopinath 2024. Hydroponic cultivation of Spices and Aromatics : Techniques , benefits and challenges. *International Journal of Environment and Climate change* .14(11) :234-254.
47. Thanuja T.T. and G.S.Sreekala. 2024. Standardisation of centrifugation method for virgin coconut oil production and comparison of quality parameters of the recovered oil. *Journal of Advances in Biology and Biotechnology* 27(5) : 650-658.
48. Lellapalli Rithesh, Radhakrishnan, N. V., Susha S.Thara, Sreekala G.S, Anuradha, T., Aswathi, M.S. and Sucharita Mohapatra. 2024. A centenary review on leaf rot disease of coconut. *Journal of Advances in Biology and Biotechnology* 27(11) :993- 1005.
49. Shibana, S.N., Deepa S.Nair, Sreekala G.S., Shalini Pillai, P., Swapna Alex., Anith, K.N. and Ancy Joseph. 2024. Growth, yield and secondary metabolite elicitation in response to chitosan application in turmeric( *Curcuma longa* L.) *Plant Science Today* 11(sp3) : 83- 95.
50. Silpa.S. G., Sreekala G.S., Deepa S. Nair., Roy Stephen, Swapna Alex, Suhara Beevy,S. and Beena Thomas. 2024. In vivo induction and identification of heteroploids in ginger. *Plant Science Today* 11(sp3) : 230-243.
51. Aswani J.S., Sreekala G.S. and Deepa S. Nair. 2025. Growth and Yield Response of Ginger Plants (*Zingiber officinale* Rosc.) to Drip Fertigation Levels and Schedules. [Journal of Advances in Biology & Biotechnology](#) 28(6):1348-1364

### Seminar proceedings

1. Rhizome characters of ginger as influenced by different shade levels. ***Proceedings of thirteenth Kerala Science Congress***, January 2001, Thrissur, pp.386-387.
2. Effect of shade on chlorophyll pigment of ginger cv. Rio-de-Janeiro. ***Proceedings of thirteenth Kerala Science Congress***, January 2001, Thrissur, pp.460-461.
3. Influence of shade regimes on starch fibre content of ginger:’ ***Proceedings of fourteenth Kerala Science Congress, 29-31***, January 2002, Kochi, pp.338-340.
4. Organic ginger cultivation enhances yield and soil nutrients. UGC sponsored National Seminar on “***Emerging Trends in Sensor Technology for Environmental studies***”. **June 21, 22 2005**, Palakkad, pp.51.
5. Tracing photosynthates using <sup>14</sup>C and its effect on yield in ginger under different shade regimes. ***20<sup>th</sup> Kerala Science Congress, Thiruvananthapuram***
6. Oushadasasya krishiyum sadhyathakalum. ***Souvenir- National seminar on “Promotion of cultivation and marketing of medicinal plants.” 2009*** Published by State Horticultural Mission.
7. Market Interventions for vegetable growers in Kerala. Swadesh Prem Jagriti Sangoshi 2011. **National Conference on Horti Business Linking Farmers with market**. May 28-31, 2011. Dehradun, organized by Lt. Amith Singh Memorial Foundation , New Delhi in collaboration with S.V.B.P. Univ. of Agriculture and Technology, Meerut and G.B.Pant Univ. of Agriculture and Technology, Pantnagar.pp.73
8. Organic ginger- a cost effective agrotechnique. ***Centenary National Seminar on” Convergence of technologies for organic horticulture”***. South Indian Horticulture Association, Coimbatore.
9. Organic ginger-a holistic approach. ***Natural Resource Management and livelihood support system. Compendium of selected Research paper and articles of State Level Seminar 2007.***
10. Effect of organic manures and biofertilisers on nutrient status of soil in ginger intercropped in coconut garden. National Biodiversity Congress 2012. 27- 30, December ,2012, Organised by Kerala State Biodiversity Board
11. Sreekala, G. S., Avinash, M., Nainu, Joseph, and Reshma, P. Morphological characterisation of clove (*Syzygium aromaticum* (L.) Merr. & Perry) genotypes in major clove growing areas of southern western ghats. 9<sup>th</sup> Indian Horticultural Congress ,held from 18 - 21, November, 2021.

12. Sandra, M.M., Sreekala, G.S. and Aparna, K. 2018. Effect of mulch and fertilisers on growth parameters in transplanted ginger . In : Das,S. ( ed.), Proceedings of the thirtyth Kerala Science Congress, 28-30 January, 2018, Thalassery, Kerala State Committee on Science, Technology and Environment, Government of Kerala, pp. 18-19.
13. Anargha T., Sreekala G. S. and Deepa S. Nair 2021. Rhizome characters of ginger (*Zingiber officinale* Rosc.) genotypes of Kerala. In : Roy Stephen and Sreekala G.S.(eds.), Proceedings of the National Webinar on Spice Improvement, Processing and Marketing, 7-8 October, 2020 Regional Agricultural Research Station (Southern Zone), Vellayani, Kerala Agricultural University,pp.111.
14. Pooja S., Sreekala G. S. and Prathapan K. D.2021. Insect visit of inflorescence of black pepper (In : Roy Stephen and Sreekala G.S.(eds.), Proceedings of the National Webinar on Spice Improvement, Processing and Marketing, 7-8 October, 2020 Regional Agricultural Research Station ( Southern Zone) Vellayani, Kerala Agricultural University,pp.113
15. Reddappa, J. B., Sreekala, G. S. and Roy Stephen. 2020. Pollen characteristics of clove (*Syzygium aromaticum* (L.) Merr. & Perry) In : Roy Stephen and Sreekala G.S.(eds.), Proceedings of the National Webinar on Spice Improvement, Processing and Marketing, 7-8 October, 2020 Regional Agricultural Research Station , Southern Zone, Vellayani, Kerala Agricultural University,pp.114.
16. Sandra Merin Mathew and Sreekala G. S . 2020.Effect of mulch and nutrients on rhizome characters in transplanted ginger In : Roy Stephen and Sreekala G.S.(eds.), Proceedings of the National Webinar on Spice Improvement, Processing and Marketing, 7-8 October, 2020 Regional Agricultural Research Station , Southern Zone, Vellayani, Kerala Agricultural University,pp. 123
17. Bommana Divya, Heera, G. , Radhika, N.S., Sreekala G.S. and Joy Michal Johnson . 2020. In vitro evaluation of new generation and combination fungicides for the management of anthracnose of nutmeg ( *Myristica fragrans* Houtt.) In : Roy Stephen and Sreekala G.S.(eds.), Proceedings of the National Webinar on Spice Improvement, Processing and Marketing, 7-8 October, 2020 Regional Agricultural Research Station , Southern Zone, Vellayani, Kerala Agricultural University,pp 130
18. Athira, K., Heera, G. , Radhika, N.S., Sreekala G.S. and Joy Michal Johnson. 2020. In vitro evaluation of fungicides against *Colletotrichum gloeosporioides* causing anthracnose of black pepper ( *Piper nigrum* L.) In : Roy Stephen and Sreekala G.S.(eds.), Proceedings of the National Webinar on Spice Improvement, Processing and Marketing, 7-8 October, 2020 Regional Agricultural Research Station , Southern Zone, Vellayani, Kerala Agricultural University, pp 131
19. Sreekala GS, Nainu Joseph and Reshma P. 2021. Morphological characterisation of Clove genotypes in major clove growing areas of Southern Western Ghats. Jai Prakash, R.K. Pal, R.M. Sharma, Anil Khar, G. Prakash, Vivek Tripathi, J.K. Ranjan and M.K. Verma. 2021. Poster Papers Abstract Book on the 9th Indian Horticulture Congress- Horticulture for Health, Livelihoods and Economy, held at Chandra Shekhar Azad University of Agriculture and Technology, Kanpur, Uttar Pradesh, India from 18-21, November, 2021, organized by the Indian Academy of Horticultural Sciences, pp. (191)
20. Reshma P, Sreekala GS, and Nainu Joseph. 2022. Quality evaluation and organoleptic analysis of local cultivars of black pepper (*Piper nigrum* L.). The national seminar on Horticulture for sustainable development, nutritional and livelihood security. 26-27<sup>th</sup> May 2022. Uttar banga krishi viswavidhyalaya, Pundibari, West Bengal.
21. Nainu Joseph, Sreekala GS and Reshma P.2022. Study on morphological variability and characterization of nutmeg (*Myristica fragrans*Houtt.) genotypes of southern Kerala. The national seminar on Horticulture for sustainable development, nutritional and livelihood security. 26-27<sup>th</sup> May 2022. Uttarbanga krishiviswavidhyalaya, Pundibari, West Bengal.
22. Reshma, P., Sreekala, G. S., Neethu, R.S. and Nainu, J. 2022. Evaluation of black pepper cultivars of Kerala for yield and quality traits. International Conference on Advances in Agriculture & Food System Towards Sustainable Development Goals. August 22 - 24 2022. University of Agricultural Sciences,



Bangalore.

### International seminar/symposium

1. Floristic diversity in cardamom plantation .2<sup>nd</sup> International Seminar and workshop on “ Sustainable utilization of Tropical Plant Biomass “ 14-15 Dec.2010. University of Kerala, Trivandrum
2. Sonia,V. and Sreekala,G.S. 2015. Effect of pretreatments and curing methods on the flavor profile of essential oil of processed small cardamom ( *Elettaria cardamomum* (L.)Maton. International Symposium on Phytochemistry and Prof. Dr.A.Hisham Endowment Award Ceremony 25 , April, 2015 Organised by Kerala Academy of Sciences, Thiruvananthapuram.p.25
3. Sreekala,G.S. and Meenakumari, K.S.2018. International Seminar on Emerging Trends in Organic Farming and Sustainable Agriculture held at CMS College, Kottayam from 22 to 24 April, 2018.
4. Anargha T., Sreekala G.S. and Deepa S. Nair .Abstracts/extended abstracts on Variability in ginger accessions for morphological and yield traits. Proceedings Provectus Plantae 2019. International Conference on Exploring the Scope of Plant Genetic Resources 22-24th May 2019. Dept. of Botany, University of Kerala, Kerala, India Abstract PGR 3 pp 348-350
5. Sonia N.S., Jessykutty,P.C.,Sreekala G.S. and Deepa S. Nair. Abstracts/extended abstracts published on " Amino acid profiling in Milk Yam (*Ipomoea digitata* L.). " Proceedings Provectus Plantae 2019. International Conference on Exploring the Scope of Plant Genetic Resources 22-24th May 2019. Dept. of Botany, University of Kerala, Kerala, India Abstract PFP 37 pp 260-262
6. Anargha,T. and Sreekala, G.S. 2021. Defense enzymes in ginger genotypes induced by rhizome rot (*Pythium aphanidermatum* (Edson) Fitzp.) International Symposium on Spices as Flavours, Fragrances & Functional Foods held on 09-12 February 2021, Indian Society for Spices, Kozhikode, Kerala, India pp.89.
7. Sandra Merin Mathew and Sreekala G.S.2022. Economics of mulch on ginger transplanted ( *Zingiber officinale* Rosc) intercropped in coconut gardens. International Seminar on Sustainable Urban Agricultural Systems and Community Resilient Cities on 22 March organised by Training Service Scheme, College of Agriculture, Vellayani
8. P. Reshma, G. S. Sreekala, R. S. Neethu and Nainu Joseph. 2022. Evaluation of black pepper cultivars of Kerala for yield and quality traits. International Conference on Advances in Agriculture & Food System Towards Sustainable Development Goals. August 22 - 24 2022. University of Agricultural Sciences, Bangalore.
9. J.B. Reddappa, G. S. Sreekala, Deepa S. Nair and P. Reshma. 2024. Floral phenology and standardization of hand pollination of (*Syzygium aromaticum* (L.) Merr. & Perry). In: International seminar on spices KAU 2024 (ISSK 2024) Spices: Innovative and Green Technologies for Sustainability. Regional Agricultural Research Station (Southern Zone), College of Agriculture, Vellayani, June 5 -7 2024, pp 11.
10. G. S. Sreekala, M. Avinash, P. Reshma, J. B. Reddappa, T. Anargha, Nainu Joseph and Deepa S. Nair. 2024. Genomic variation in self pollinated clove (*Syzygium aromaticum* (L.) Merr. & Perry) accessions from western ghats. In: International seminar on spices KAU 2024 (ISSK 2024) Spices: Innovative and Green Technologies for Sustainability. Regional Agricultural Research Station (Southern Zone), College of Agriculture, Vellayani, June 5 -7 2024, pp 44.
11. P. Reshma, G. S. Sreekala, Deepa S. Nair and Roy Stephen. 2024. Genetic diversity assessment of black pepper (*Piper nigrum* L.). cultivars of western ghats. In: International seminar on spices KAU 2024 (ISSK 2024) Spices: Innovative and Green Technologies for Sustainability. Regional Agricultural Research Station (Southern Zone), College of Agriculture, Vellayani, June 5 -7 2024, pp 06.

12. Anargha T, Sreekala G.S.and Deepa S.N .2024. Screening of ginger genotypes for resistance/ tolerance to soft rot under natural condition. AISCA 2024
13. Shanila and Sreekala G.S. 2024. Hydroponic cultivation of herbs and spices in urbanised environments. AISCA 2024.
14. Thanuja T.T. and Sreekala G.S.2024. Antioxidant properties of virgin coconut oil. AISCA 2024.
15. Lellapall i, R., Radhakrishnan, N.V., Joy, M.,Susha S.T., and Sreekala G.S.2024. Combatting coconut leaf rot: A comprehensive survey in Kerala AISCA 2024.
16. Shanila, G.S.Sreekala., Deepa S. Nair., P. Reshma. 2024. Poster- Planting methods and substrate for leafy coriander in NFT hydroponics under protected environments. In: International seminar on spices KAU 2024 (ISSK 2024) Spices: Innovative and Green Technologies for Sustainability. Regional Agricultural Research Station (Southern Zone), College of Agriculture, Vellayani, June 5 -7 2024.
17. Karthika Thankachan, Deepa S. Nair, G.S.Sreekala. 2024. Effect of Chitin and chitosan on root growth, nutrient uptake and beneficial soil microflora in root zone of *Curcuma longa* L. In: International seminar on spices KAU 2024 (ISSK 2024) Spices: Innovative and Green Technologies for Sustainability. Regional Agricultural Research Station (Southern Zone), College of Agriculture, Vellayani, June 5 -7 2024.
18. Deepa S. Nair,Anith K.N., G.S.Sreekala, Roy Stephen and T. Dhayana. 2024. Chitosan for counteracting disease of black pepper ( *Piper nigrum* L.) In: International seminar on spices KAU 2024 (ISSK 2024) Spices: Innovative and Green Technologies for Sustainability. Regional Agricultural Research Station (Southern Zone), College of Agriculture, Vellayani, June 5 -7 2024, pp
19. Shibana, S.N., Deepa S. Nair, G.S.Sreekala, P. Shaini Pillai, Swapna Alex, K.N. Anith and Ancy Joseph. 2024. Growth, yield and secondary metabolite elicitation in response to chitosan application in turmeric ( *Curcuma longa* L). In: International seminar on spices KAU 2024 (ISSK 2024) Spices: Innovative and Green Technologies for Sustainability. Regional Agricultural Research Station (Southern Zone), College of Agriculture, Vellayani, June 5 -7 2024.
20. S.G.Silpa, G.S.Sreekala, Deepa S. Nair, Roy Stephen, Swapna Alex, Suhara Beevy,S. and Beena Thomas 2024. In vivo induction of heteroploids in ginger. In: International seminar on spices KAU 2024 (ISSK 2024) Spices: Innovative and Green Technologies for Sustainability. Regional Agricultural Research Station (Southern Zone), College of Agriculture, Vellayani, June 5 -7 2024.

### Popular Articles

1. Sreekala.G.S. 1997.Karshika rangathu oru samoola parivarthanam atthyntapekshitham. **Souvenir 1997, Sevagiri Resident's Association pp.63-64.**
2. Sreekala.G.S. 1998. Health Benefits of Coconut. **Kerala Calling**. September 1998, Volume 18(11) pp 32-34.
3. Sreekala.G.S. 2000. Jaivakrishiethi Kurumulakil. **Kerala Karshakan** March 2000, 45(12) pp.9-10.
4. Sreekala.G.S. 2001.Nalikerathil ninnum Vilayeria Vibhavagal. **Kerala Karshakan** August 2001 Vol 46(22) pp.13-14.
5. Sreekala.G.S. 2001. Inchiyile Vilavardhanavinu prakasa niyanthranam. **Spice India** December 2001, Vol 14(12) pp.5.
6. Sreekala.G.S. 2006.Inchisathum inchithylavum. **Krishikaran**. December, 2006 pp.14.
7. Sreekala.G.S. 2007.Nanotechnology in Agriculture. **Kannimannu**. July 2007 pp.19-22.
8. Sreekala.G.S. 2010. Eelam krishi-Vila muthal kayattumathi vare. **Krishikaran**. December.2010, pp 26-29.
9. Sreekala.G.S. 2011.Pachakarithai uthpadanam . **Krishiyankanam** vol.14 (4) 2011.
10. Vasanthakumar,K. and Sreekala.G.S.2016. Profiling Spices 1 The flavour and wellness from black pepper . **Spice India** 29(8): 24-30

11. Vasanthakumar,K. and Sreekala.G.S.2016. Profiling Spices 2 Small cardamom ; The green capsule that greens life. Spice India 29(9): 12-24
12. Vasanthakumar,K. and Sreekala.G.S.2016. Arogyathinai Elam Seelamakham. Spice India Malayalam 29(9); 12-16
13. Vasanthakumar,K. and Sreekala.G.S. Profiling Spices 3 The flavour and wellness from ginger. Spice India 29(11) 18-24.
14. Reshma P, Nainu Joseph, Sreekala GS. 2021. Vriksha Sugandha Vyanjanangal. Kerala Karshakan. January 2022. 63-65.
15. Shanila, Sreekala G.S. and Anargha T.2024. Jathi, Kurumulaku Nadeel Vasthukaludae utpadanavum enangalum. Krishiyankanam. August- September 2024

## **Books**

1. Sreekala, G.S. ( ed.). 2013. *Naliker a Ulpennangal*. State Resource Centre, Kerala.
2. Sreekala, G.S.(ed) 2017.Objective Spices and Plantation Crops. Kalyani publishers , New Delhi.
3. Roy stephen and Sreekala G.S. (ed)2021 Proceedings of The National Webinar on Spice Improvement, Processing and Marketing, Director of Extension, Kerala Agricultural University
4. Sreekala G.S.2023. Plantation Crops: A Hand Book. Kalyani publishers , New Delhi p.
5. Ashok,P.and Sreekala G.S. 2024. Hand book of Fruit Crops.Kalyani Publishers, New Delhi.
6. Roy Stephen, Sreekala G.S., Malini Nilamudeen and Geetha Radhakrishnan. 2023. Research Compendium, Regional Agricultural Research Station ( Southern Zone) , College of Agriculture, Vellayani, Golden Jubilee Document.
7. Sreekala. G.S. Anith K.N. and Roy Stephen 2024. International Seminar on Spices KAU 2024( ISSK 2024). Spices : Innovative and green technologies for sustainability.Published by Kerala Agricultural University.ISBN 978-81-969121-9-2p.274

## **Chapters in Books**

1. Mangainchi in –Sugandhathaila Marunnuchedikalum Krishireethikalum published by Kerala Agriculture University, Thrissur, 2003,pp.64-66
2. Pathinonnam Panchavalsara Padhathi- Karshika Vikasanam Sameepanavum Nirdesangalum. 2008 All India Kisan Sabha.
3. Sreekala, G.S. Vazhaenangal. 2015. In : Usha C.Thomas, Sheela,K.R. and Allen Thomas (Eds). *Vazha Krishi Oru Vazhikatti*. pp.5-15
4. Sreekala. G.S. 2019. Coconut Tactics of Being an Agripreneur Learning the Rope ( Eds. Sreedaya G.S., Seema ,S. and Anilkumar, A
5. Aswani,J.S. Sreekala G.S and Akhil Krishnan. 2022. Precision Farming in Spice Crops ; An Indian Preceptive. GRISAAS- An edited book Vol 2 Chief editor Dr. S.P. Singh , Astha Foundation, Meerut, India pp. 9-`17.

### Brochure/ Technical bulletin

1. Inchiyilum manjaliyum portray thai utpadanam – 2018. Dr. Sreekala G.S., Dr P.C. Jessykutty , Sandra Merin Mathew, Aparna K. , Narayanan Nampoothiri
2. Inchikrishi by Sreekala G.S., Sonia N.S. and Anisa , N.A. 2022.
3. Manjal Krishi by Sreekala G.S. and Deepa S. Nair.2022.

### Seminars Organised / Coordinated

1. National webinar on Spice Improvement, Processing and Marketing on Oct 7 th and 8 th Oct ,2020
2. Seminar on Smart Farming System on 23 rd March, 2021
3. Seminar on molecular techniques in crop improvement- plantation crops and spices on 29 th May, 2021
4. Seminar on Genome Engineering with CRISPR/CAS : the new era of crop improvement 2021
5. Two day workshop on “ Virus Indexing in Horticultural Crops” by Regional Agricultural Research Station( Southern Zone) Vellayani on 2<sup>nd</sup> and 3<sup>rd</sup> March, 2023.
6. International Seminar on Spices KAU 2024 (ISSK 2024) June 5-7, 2024 at College of Agriculture, Vellayani.

### Trainings attended

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1. Attended training on Human Resources Development.
2. Attended training on Instructional Technology and Subject matter.
3. Attended Workshop on farm feature held by Farm Information Bureau.
4. Orientation course- UGC sponsored orientation programme ( IT- oriented) conducted by Academic Staff College, University of Kerala, Kariavattom from 2/6/2010 to 29/6/2010
5. Training on “ **Intellectual Property Rights** ” held by Dept. of Plant Breeding and Genetics, Kerala Agricultural University, Thrissur..
6. Training on “**Natural Resource Management for Sustainable Development**”, Dept. of Agronomy, CAFTA, Tamil Nadu Agricultural University, Coimbatore from 9/2/2010 to 29/2/2012
7. Attended a short course on “**Recent Advances in Conservation of Genetic Resources of Plantation Crops**” held by CPCRI, Kasargode from 22 - 31 October 2013.
8. Advances in “**Production of quality planting materials in plantation crops**” 18-11-2014 to 27-11-2014 at CPCRI, Kayamkulam.
9. Attended a training on “ **Environmental Sciences**” held by Human Resource Development Centre, UGC- Academic Staff College, Karyavattom from 2/2/17 to 22/2/17
10. Attended a National level training on “**Advances in Cocoa production and Processing Technology**” from 25/5/2017 to 27/5/2017 held at CPCRI, Vittal.
11. Attended training on “ **Breeding for resistance to pest and diseases of Plantation crops**” from 21/11/2017 to 30/11/2017 held by ICAR-CPCRI , Kayamkulam
12. Short course on' Recent Advances in Conservation and Management of Genetic Resources of Spices, Plantation , Medicinal and Aromatic Crops " by UAHS, Shivamogga from 1-10 th October, 2019.
13. DST sponsored National Online Training Programme on Soil and Water Conservation Technologies for Climate Smart Agriculture in the Conext of Extreme Weather Events from Feb 22 to March 05 , 2021 at ICAR-IISWC , Research Centre, Udhagamndalam
14. National online NMPB sponsored training on „ Medicinal and Aromatic Plants Diversity Utilisation and their Conservation” Organised by Department of Forestry, Faculty of Horticulture, Uttar Banga Krishi Vishwavidyalaya, West Bengal. From 1st June, 2021 to 10 th June , 2021.

15. International Training on Agriculture in Future & Future in Agriculture organised by Rajmata Vijayaraje Scindia Krishi Vishwavidyalay, Gwalior in collaboration with Junagadh Agricultural University Gujarat, ICRISAT Hyderabad, ICAR- ATARI Jabalpur & AGRI MEET Foundation U.P. from 20 November 2023 to 10 Dec 2023 via Hybrid Mode.

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**Workshop attended**

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1. Participated in XXI workshop of AICRP (Spice) held at NRC on seed spices, Tabiji, Rajasthan, 5-6 July 2010.
2. National workshop on techniques for chromosome analysis from 21 to 23 Nov, 2018.
3. Workshop on Introductory Bioinformatics from 12<sup>th</sup> and 13<sup>th</sup> December 2023 organised by Department of Biotechnology and Molecular Biology, College of Agriculture, Vellayani.

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**Student Guidance (Major Advisor/ Advisory Committee member)**

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**M. Sc.**

Within KAU: Completed: 13

Ongoing - 2

**Ph. D**

Completed - 2

Ongoing : 4

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**Other Institutional Responsibilities**

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1. Associate Public Relations Officer, RARS(SZ) Vellayani.
2. Currently Technical Officer of RARS(SZ) Vellayani, Website content manager of RARS(SZ) Vellayani.
3. Member of ICAR Accreditation Committee of College of Agriculture, Vellayani.
4. Officer i/c of Vehicle of RARS(SZ) Vellayani.
5. Associate Patron, Students Union 2024 -25 of College of Agriculture, Vellayani.

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**Membership in Professional Associations**

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1. Life Member of Indian Society for Spices, Indian Institute of Spices Research, Calicut
2. Life Member of Horticultural Society of India
3. Life Member of South Indian Horticultural Association, Horticultural College and Research Institute, Coimbatore
4. Life Member of Indian Society for Plantation Crops