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Academic background:

- Ph.D. Horticulture- Indian Agricultural Research Institute, New Delhi, 1996
- M.Sc Horticulture- Indian Agricultural Research Institute, New Delhi, 1992
- PG Diploma (Bioinformatics) –Bharathiar University, Coimbatore, 2004
- B.Sc.(Horticulture)- Tamil Nadu Agricultural University, Coimbatore, 1990
- Online course in Bioinformatics- S*consortium of eight universities around the world-2004
- Certificate course in Intellectual property rights – WIPO-2005

Research interests and current focus

Marker express 1.0 software developed to locate RAPD/ISSR primers & design iSCAR primers. It was validated using expressed sequences and published polymorphic RAPD primers on oil palm. DG-MAP software was developed for locating RAPD and SSR priming sites and to work out the distance between the priming sites. It was validated using genome sequence of cucumber. The software successfully mapped the known and predicted markers closely linked to F locus.). (Horticulture Fifty three germplasm accessions of tubers, vegetables and ornamental crops were collected from Goa. Six accessions of Noni were collected from of Goa. One out of 12 amaranthus accessions showed no infestation of root knot nematodes. Blue, yellow and red crossandra accessions conserved for utilisation. Konkan lemon a seedless variety was established well in coconut as mixed crop. Aksaya an ornamental sweet potato variety was developed, 5000 cuttings of the variety was distributed. Experiment of high density dwarf arecanut established.

Outreach and extension

- Planting material of Konkan lemon, Barbodos cherry, marigold and vegetables were distributed
- Seeds of improved varieties of vegetables were distributed to farmers of tribal villages in Canacona.
- Areca leaf plate making machine was popularized and six units were handed over to tribal self help groups

Membership in professional societies

1. International Society of Noni Science
2. Horticultural Society of India
3. Indian Society of Plantation Crops
4. Indian Society of Plant Physiology
5. Association for Coastal Agricultural Research, Goa

Awards and honours

1. Recipient of award as one of top 45 innovations of India Innovation Growth Program 2014 of DST-Lockheed Martin-Stanford Graduate Business School-IC2 Institute University of Texas at Austin-IndoUS Science and Technology Forum-TIE-FICCI.
2. Recipient of NAIP Fellowship for undergoing the International Training on Allele mining at Molecular Cytogenetics Lab of Prof JS (Pat) Heslop-Harrison, University of Leicester, UK) WRKY transcription factors and NBS-LRR resistance genes in Banana during 1 Oct to 23 Dec 2013.
3. Associate Editor-Agriculture –Open access books Program (Versita Publishing, Poland) 2012-13.
4. Vice President (Bioinformatics Club for experimental scientists) Bioclues www.bioclues.org (2011-12)
5. Member Editorial Board, International Journal for Computational Biology
6. Research supervisor at Kannur and Calicut and Mangalore Universities India
7. Associate Editor-Agriculture –Open access books Program (Versita Publishing, Poland) 2012-13
8. Recipient of IISc(Indian Institute of Science)-(DBT (Department of Biotechnology) India postdoctoral fellowship to work at ICRISAT (International Crops Research Institute for Semi-Arid Tropics) Patancheru with Dr Kiran K Sharma on tissue specific gene promoters (2006-2008).
9. Recipient of Outstanding team award of ICAR New Delhi (V. A. Parthasarathy; P.M. Kumaran; M. J. Ratnambal; A Karun; V. Niral; V. Arunachalam; A Upadhyay) for the biennium 1999-2000 for the work on coconut germplasm.
10. Member Editorial Board Journal of Food, Agriculture and Environment (WFL Publishers) Finland (Oct 2017 onwards).

Academic/ Student advising

Research Publications

Journals

- Paramesh, V., Kumar, P., Parajuli, R., Francaviglia, R., Manohara, K. K., Arunachalam, V., Mayekar, T., & Toraskar, S. (2023). A Life Cycle Assessment of Rice–Rice and Rice–Cowpea Cropping Systems in the West Coast of India. *Land*, 12(2), 502. <https://doi.org/10.3390/land12020502>
- Arunachalam, V., Salgaonkar, D. C., Kevat, N. V., Walawalkar, B. V., & Das, B. (2022). Quantification of betacyanin content variation of amaranth varieties by an Android App, colorimeter, and infrared spectroscopy. *Chinese Journal of Analytical Chemistry*, 50(10), 100145. <https://doi.org/10.1016/j.cjac.2022.100145>
- Arunachalam, V. (2022) Quick identification of banana varieties by minimal qualitative descriptor traits. *Natl. Acad. Sci. Lett.*45: 111–113 <https://doi.org/10.1007/s40009-021-01085-4>
- Reddy, K. V., Paramesh, V., Arunachalam, V., Das, B., Ramasundaram, P., Pramanik, M., Sridhara, S., Reddy, D.D., Alataway, A., Dewidar, A.Z. & Mattar, M. A. (2022). Farmers' Perception and Efficacy of Adaptation Decisions to Climate Change. *Agronomy*, 12(5), 1023. <https://doi.org/10.3390/agronomy12051023>
- Paramesh, V., Kumar, P., Shamim, M., Ravisankar, N., Arunachalam, V., Nath, A. J., Mayekar, T., Singh, R., Prusty, A.K., Rajkumar, R.S. & Kashyap, P. (2022). Integrated farming systems as an adaptation strategy to climate change: Case studies from diverse agro-climatic zones of India. *Sustainability*, 14(18), 11629. <https://doi.org/10.3390/su141811629>
- Gopal, M., Gupta, A., Arunachalam, V., Maheswarappa, H. P., Thomas, G. V., & Jacob, P. M. (2022). Autochthonous nutrient recycling driven by soil microbiota could be sustaining high coconut productivity in Lakshadweep Islands sans external fertilizer application. *World Journal of Microbiology and Biotechnology*, 38(11), 1-14. <https://doi.org/10.1007/s11274-022-03373-7>
- Paramesh, V., Kumar, P., Nath, A. J., Francaviglia, R., Mishra, G., Arunachalam, V., & Toraskar, S. (2022). Simulating soil organic carbon stock under different climate change scenarios: A RothC model application to typical land-use systems of Goa, India. *Catena*, 213, 106129. <https://doi.org/10.1016/j.catena.2022.106129>
- Paramesh, V., Ravisankar, N., Behera, U., Arunachalam, V., Kumar, P., Solomon Rajkumar, R., Dhar Misra, S., Mohan Kumar, R., Prusty, A.K., Jacob, D. & Rajkumar, S. (2022). Integrated farming system approaches to achieve food and nutritional security for enhancing profitability, employment, and climate resilience in India. *Food and Energy Security*, e321. <https://doi.org/10.1002/fes3.321>
- Singh, S. K., Mohekar, D. S. R., Arunachalam, V., Kumar, N., Chattaraj, S., Jenna, R. K., Das, B., & Kumar, P. (2022). Land resource inventorying (LRI) on 1: 10K–National soil priority of India. *Geoderma Regional*, 29, e00524. <https://doi.org/10.1016/j.geodrs.2022.e00524>
- Gupta, M. J., Paramesha, V., Thangam, M., & **Arunachalam, V.** (2021). Energy analysis of different cucumber varieties in protected cultivation under humid tropic condition of West

Coast, India. *Progressive Horticulture*, 53(1), 90-94. <http://dx.doi.org/10.5958/2249-5258.2021.00016.6>

- **Arunachalam, V.** (2021) Quick identification of banana varieties by minimal qualitative descriptor traits. *Natl. Acad. Sci. Lett.* on line published 15.10.2021 <https://doi.org/10.1007/s40009-021-01085-4>
- Paramesh, V., Singh, S. K., Mohekar, D. S., **Arunachalam, V.**, Misra, S. D., Jat, S. L., Kumar, P., Nath, A.J., Kumar, N., Mahajan, G.R. and Bhagat, T. Impact of sustainable land-use management practices on soil carbon storage and soil quality in the Goa state of India. *Land Degradation & Development*. on line published 15.10.2021 <https://doi.org/10.1002/ldr.4124>
- Kumar, P., Desai, A.R., **Arunachalam, V.**, Gupta, M.J., Paramesha, V., Rajkumar, R.S., Maneesha, S.R., Srikanth, G.B., Mahajan, G.R., Desai, S., Shishira, D., Janjal, A.V. (2021) A conceptual framework for agro–ecotourism development for livelihood security. *Indian Journal of Agronomy*. 66 (5th IAC Special issue): S184-S190.
- **Arunachalam, V.**, Vaingankar, J. D., & Kevat, N. (2021). Foliar traits in papaya plants intercropped in coconut. *National Academy Science Letters*, 44(3):267-270. <https://link.springer.com/article/10.1007/s40009-020-00981-5>
- Krishna, V.R.; Paramesh, V.; **Arunachalam, V.**; Das, B.; Elansary, H.O.; Parab, A.; Reddy, D.D.; Shashidhar, K.S.; El-Ansary, D.O.; Mahmoud, E.A.; El-Sheikh, M.A. Assessment of sustainability and priorities for development of Indian west coast region: An application of sustainable livelihood security indicators. *Sustainability* 2020, 12, 8716. <https://www.mdpi.com/2071-1050/12/20/8716>
- **Arunachalam, V.**, Fernandes, C.M., and Salgaonkar, D. C. (2020). Quick method to quantify the potassium and sodium content variation in leaves of banana varieties. *Analytical Sciences*. 36(10): 255-1260. <https://doi.org/10.2116/analsci.20P096> online published 29 May 2020 https://www.jstage.jst.go.jp/article/analsci/36/10/36_20P096/_article/-char/en
- Das, B., Nair, B., **Arunachalam, V.**, Reddy, K. V., Venkatesh, P., Chakraborty, D., & Desai, S. (2020). Comparative evaluation of linear and nonlinear weather-based models for coconut yield prediction in the west coast of India. *International Journal of Biometeorology*, 1-13. <https://doi.org/10.1007/s00484-020-01884-2>
- Paramesh, V., **Arunachalam, V.**, & Nath, A. J. (2019). Enhancing ecosystem services and energy use efficiency under organic and conventional nutrient management system to a sustainable arecanut based cropping system. *Energy*, 187, 115902. <https://doi.org/10.1016/j.energy.2019.115902>
- **Arunachalam, V.**, Prabhu D.C. (2019) Occurrence of leaf tip mutation in black pepper (*Piper nigrum* L.). *Current Science*. 116: 1466-1467. <https://www.currentscience.ac.in/Volumes/116/09/1466.pdf>
- Paramesh, V., **Arunachalam, V.**, Nikkhah, A., Das, B., Ghnimi, S. 2018. Optimization of energy consumption and environmental impacts of arecanut production through coupled data envelopment analysis and life cycle assessment. *Journal of Cleaner Production*. 203, 674-684.
- John, K. J., Nair, R. A., Suma, A., Unnikrishnan, M., & **Arunachalam, V.** (2018) Agro-biodiversity and ethnobotany of Lakshadweep Islands of India. *Genetic Resources and Crop*

Evolution. 65: 2083-2094. DOI 10.1007/s10722-018-0676-8
<https://link.springer.com/article/10.1007/s10722-018-0676-8>

- **Arunachalam, V.** (2018). *Morinda citrifolia* L.(Rubiaceae): a multi-purpose tree for coastal ecosystems and its variability in Konkan region of India. *Genetic Resources and Crop Evolution*, 65(6), 1751-1765. <https://link.springer.com/article/10.1007/s10722-018-0642-5>
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- **Arunachalam, V.** Dhargalkar, S.D, Vaingankar, J.D. and Kevat, N. (2016) Pigment rich amaranth genotypes by tri-stimulus colorimetry and progeny test. *National Academy of Sci. Lett.* 39: 411-415 DOI: 10.1007/s40009-016-0491-8
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- Sunkara, S, **Arunachalam, V.** Bhatnagar-Mathur, P. and Sharma, K.K. (2014) Isolation, cloning and characterization of 5' upstream region of galactose binding seed lectin gene of chickpea (*Cicer arietinum* L.). *Journal of SAT Agricultural Research.* 04/2014:12.
- **Arunachalam, V** (2014) Computational genomics of plants. *CAB Reviews* 9: 036.
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- Jerard BA, Niral V, Dhanapal R, Damodaran V, Rizal SK, **Arunachalam V**, Sankaran M, Nair RV, Ratnambal MJ, Rao EVVB, Koshy PK, Thomas GV (2014) IND 099–NiuLeka Green Dwarf (EC0415218; INGR13065), a Coconut (*Cocosnucifera*) germplasm of short Statured palm but possessing the advantageous characters of tall. *Indian J Plant Genet. Resour.* 27(1): 78.
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- **Arunachalam,V**, Rajesh M.K, Jerard, B.A. Jayabose, C and Sairam, C.V (2014) Characterization of a spicata mutant of coconut palm in India. *Journal of Plantation Crops.* 42(1):417-424.

- **Arunachalam,V**, Jerard, B.A. Apshara, S.E. Jayabose, C Subaharan, K, Ravikumar, N and Palaniswami, C. (2013) Digital phenotyping of coconut and morphological traits associated with eriophyid mite infestation. *Journal of Plantation Crops*. 41(3):417-424.
- Premkrishnan, B.V. and **Arunachalam, V.** (2012) In Silico RAPD Priming Sites in Expressed Sequences and iSCAR Markers for Oil Palm. *Comparative and Functional Genomics* . Volume 2012 (2012), Article ID 913709, 5 pages <http://dx.doi.org/10.1155/2012/913709>
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- Singh T. R., Gupta A., Riju A., Mahalaxmi M., Seal A. and **Arunachalam V.** 2011 Computational identification and analysis of single nucleotide polymorphisms and insertions/deletions in expressed sequence tag data of *Eucalyptus*. *J. Genet.* **90**, e34–e38.
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- Niral, V. Jerard, BA, Samsudeen, K, **Arunachalam, V**, Kumaran, PM, Ratnambal, MJ, Rao, EVVB, Pillai, RV, Satyabalan, K, Nampoothiri, KUK, Nair, MK, Bavappa, KVA, Nair, RV, Thomas, GV, Bandopadyay, A, Ghosh, DK, Hore, JK, Sarangi, A, Mitra, SK, Chattopadyay, PK, Maity, SC & Arulraj, S. (2009) Release of coconut variety Kalpa Mitra. . *Indian J Genet. Pl. Breed.* 69(2):166-167.
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- Rajesh MK, Arunachalam V Nagarajan, P, Lebrun P. Samsudeen K. Thamban, C. (2008) Genetic survey of ten Indian coconut landraces by simple sequence repeats (SSRs). *Sci. Hort. (Elsevier)*118: 282-287.
- Gopal, M. Gupta A., **Arunachalam, V.** and Magu, S.P.(2007)Impact of azadirachtin, an insecticidal allelo-chemical from neem on soil micro flora, enzyme and respiratory activities. *Bioresource Technology (Elsevier)* 98(16): 3154-3158.
- Sit, A.K. Bhattacharya, M. Sarkar, B. and **Arunachalam, V** (2007) Weed floristic composition in **palm** gardens in Plains of Eastern Himalayan region of West Bengal. *Current Science.* 92(10): 1434-1439.

- **Arunachalam, V.** and Reddy, DVS. (2007) Foliar traits of Jasmine plants intercropped in Coconut. *Agroforestry Systems* (Springer) 71:19-23.
- **Arunachalam, V.** Jerard, B.A. Damodaran, V. Ratnambal, M.J. and Kumaran, P.M. (2005) Phenotypic diversity in foliar traits in Coconut germplasm. *Genetic Resources and Crop Evolution* (Springer) 52:1031-1037.
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- Sairam, C.V., Arulraj, S. Thamban, C. Samsudeen, K., Bosco, S.J.D., Rajagopal, V. and **Arunachalam, V.** (2006) Farmer's preference for coconut varieties – a participatory analysis. *CORD. (Asian Pacific Coconut Community) XXII (1)*: 59-65.
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Books, Book Chapters

- **Arunachalam, V.** (2021). Palms in an 'Omics' era. In: M. K. Rajesh, S. V. Ramesh, Lalith Perera & Chittaranjan Kole (Editors) The Coconut Genome (pp. 103-118). Springer, Cham.
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- **Arunachalam, V.**, Ramesh, S. V., Paulraj, S., Babu, B. K., Muralikrishna, K. S., & Rajesh, M. K. (2021). Endosperm oil biosynthesis: A case study for trait related gene evolution in coconut. In: M. K. Rajesh, S. V. Ramesh, Lalith Perera & Chittaranjan Kole (Editors) The Coconut Genome, (pp. 145-157). Springer, Cham <https://link.springer.com/book/10.1007/978-3-030-76649-8>
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- **Arunachalam V.** (2021) Date Palm Bioinformatics. In: Al-Khayri J.M., Jain S.M., Johnson D.V. (eds) The Date Palm Genome, Vol. 1. Compendium of Plant Genomes. Springer, Cham. https://doi.org/10.1007/978-3-030-73746-7_11
- Bourdeix, R., **Arunachalam, V.** & Hamelin, C. (2018). 2.4.1 Local genebank management systems - Chapter 2. Where we are today. In R. Bourdeix & A. Prades (Eds.), A Global Strategy for the Conservation and Use of Coconut Genetic Resources 2018-2028. (pp. 68-69). Montpellier, France. Bioversity International. <https://www.bioversityinternational.org/e-library/publications/detail/global-strategy-for-the-conservation-and-use-of-coconut-genetic-resources-2018-2028-summary-brochu/>
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