**Biodata of the Scientist**

Division/Section: Extension and Social Sciences, ICAR – Central Tuber Crops Research Institute, Sreekariyam, Thiruvananthapuram – 695017, Kerala.

**A.Personal information**

1. Name (With Title): Dr. P. Sethuraman Sivakumar

1.a. Qualification: PhD (Agriculture) with specialisation in Agricultural Extension

2. Designation: Principal Scientist

3. Address (Personal): SRA 27A, Kumaraham, Prabhakar Lane, East Mukkola to Pallimukku Road, Kallayam PO, Thiruvananthapuram – 695017, Kerala

4. Phone Numbers:

(a) Residence: NA (b)Intercom: 338 (c)Mobile: 8129832633

5. Email: sivakumar.PS@icar.org.in; pssivakumar@ctcriabi.org.in

6. Countries visited: USA, Canada

**B. Professional information**

1. Area of specialization: Technology commercialisation; Business incubation and entrepreneurship development; Nutri-sensitive extension
2. Area of interest: Intellectual Property assessment, landscaping and costing; Behavioural scale construction; Models of scaling up of biofortified crops; Market research

3. Number of institute projects completed (Add list): Eight

As Principal Investigator

| SNo | Name of the project | Duration | Funding agency |
|---|---|---|---|
| 1 | Development of media support system for tuber crops extension and training | 2001-2006 | ICAR |
| 2 | Tuber Crops: Production system diagnosis for Eastern and Northeastern India | 2002-2006 | ICAR |
| 3 | Designing strategies for improving elephant foot yam and greater yam seed systems | 2009-2012 | |
| 4 | Investigations on consumers' food choice, consumption patterns and acceptance of tuber crops based foods | 2010-2013 | ICAR |
| 5 | Development of optimum market positioning models for tuber crops-based food products | 2012-2014 | ICAR |
| 6 | Strategic market analysis for commercializing tuber crops based food products | 2015-2020 | ICAR |
| 7 | Longitudinal study on effects of tuber crops technologies intervention on their production and consumption in their user's system | 2015-2018 | ICAR |
| 8 | Upscaling tuber crops technologies for promoting food and nutritional security | 2020-2025 | ICAR |

4. Number of Institute projects being handled (Add list): One

As Principal Investigator

| SNo | Name of the project | Duration | Funding agency |
|---|---|---|---|
| 1 | Developing a stakeholder driven approach for | 2025-2030 | ICAR |

| | | | |
|---|---|---|---|
| | prioritizing tuber crop research and interventions | | |

**5. Number of externally funded projects completed (Add list): Seven**

| SNo | Name of the project | Duration | Funding agency | Budget (Rs. Lakhs) |
|---|---|---|---|---|
| **A. As Principal Investigator** | | | | |
| 1 | Investigations on the consumers need, knowledge, attitude and purchase behavior of functional foods from starchy staples | 2011-2013 | ICSSR | 4.89 |
| 2 | Developing models for predicting commercialisation potential of functional foods from starchy staples | 2016-2017 | ICAR Extramural | 9.00 |
| 3 | Assessment of roles and performance of agricultural enterprises of Agri Clinic & Agri-business Centre Scheme in the emerging startup ecosystem | 2017-2018 | MANAGE, Hyderabad | 19.89 |
| **B. As Co-PI** | | | | |
| 1 | National Agricultural Technology Project on Collection, cataloguing and validation of Indigenous Technical Knowledge (ITK) - Studies on efficacy of cow dung slurry in inducing sprouting in yam | 2003-2005 | ICAR - NATP | 2.03 |
| 2 | Jai Vigyan National Science and Technology Mission on Household Food and Nutritional Security for Tribal, Backward and Hilly Areas | 2000-2004 | ICAR-NATP | 26.15 |
| 3 | Sustainable rural livelihood and food security to rainfed farmers of Orissa | 2008-2014 | ICAR-NAIP | 52.115 |
| 4. | Gene expression profiling of taro (Colocasia esculenta L. Schott) and role of transcriptional activators of epicuticular wax in host | 2018-2021 | DST, Govt of India | 27.48 |

| | | | | |
|---|---|---|---|---|
| | resistance against Phytophthora leaf blight disease | | | |

6. Number of externally funded projects being handled (Add list):

| SNo | Name of the project | Duration | Funding agency | Budget (Rs. Lakhs) |
|---|---|---|---|---|
| **A. As Principal Investigator** | | | | |
| 1. | Rainbow Diet Campaign for Odisha: Development and Scaling of Customized Rainbow Diet Food Matrices for Combating Malnutrition among Children in Keonjhar District, Odisha | 2025-2029 | District Mineral Foundation, Govt of Odisha, Keonjhar, Odisha | 683.29 |

7. Number of students guided for a) Ph. D. b) M. Phil. c) M. Sc. NA

8. Number of students being guided for a) Ph. D. 1 b) M. Phil. c) M. Sc. NA

8.a. information about the students under your guidance - NA

9. Information on guide ship: Nil

10. Number of Research papers (Add list): 35 (Please see Annexure-1)

11. Number of Books/Book chapters (Add list): 23 (Please see Annexure-1)

12. Number of Technical Bulletins (Add list): 13(Please see Annexure-1)

13. Consultancies offered (Add list and give a brief description):

1. Consultancy project on Integration of sweet potato production and processing in Belgaum (2015-2018)

- Business facilitation and capacity building of identified farmers in Belgaum on commercial production of biofortified sweet potato varieties

2. Monitoring and evaluation expert for CAPART, Bhubaneswar

- Evaluated a CAPART, Bhubaneswar funded mushroom project of ISERD ,Brahmagiri , Odisha Feb 6, 2011

14. Technologies developed (Add list and give a brief description):Nil

15. Patents/Copyrights obtained (Add list and give a brief description):Nil

16. Any other information:

**Awards and recognition**

**International**

- Expert Member - Working Group on Agri-biotechnology of Asia-Pacific Association of Agricultural Research Institutions (APAARI), Thailand (May 2022) – Provided strategic guidance for institutional capacity development and national decision making related to agri-biotech innovations.
- Acted as JUDGE for the Student Poster Award programme of "The Society for Judgment and Decision Making", United Kingdom (Feb 2022).
- Invited Panelist United Nations Convention to Combat Desertification (UNCCD*)* - fourteenth session of the Conference of the Parties (COP 14), the eighteenth session of

the Committee for the Review of the Implementation of the Convention (CRIC 18) and the fourteenth session of the Committee on Science and Technology (CST 14) to the *United Nations Convention to Combat Desertification (UNCCD)* held at the held at the India Expo Centre and Mart, New Delhi, India from 02 to 13 September 2019.

- Fulbright – Nehru PostDoctoralFellowship (2013-2014) for conducting research work on ""An experimental investigation on the influence of sensory quality on food intake by restrained eaters under stress"at the EatingBehaviorResearchClinic,DepartmentofPsychology,FloridaState University, Tallahassee, USA.
- AwardedOutreachLecturingFundfromInstituteofInternationalEducation(IIE),Washington DC, USA to interact with faculty and deliver a lecture on "Functional foods inIndia" attheUniversityofHawaii, Hilo, USAduring January 2015.
- Recognized and awarded a certificate for contribution to the Global Ambassadors Program (Fall 2013) by the Florida State University, Tallahassee, USA.
- ListedintheMarquisWho'sWhointheWorld-29thEdition,2011publishedby the NewsCommunications,Inc.,USA.

National

1. Member – MANAGE Committee Meeting for Curriculum Revision in Extension Education 2018. As a member of MANAGE Core Committee, I designed SIX COURSES for MSc (Ag) and PhD in Agricultural Extension which was later adapted by ICAR. These courses are currently taught in over 50 Agricultural Universities in India.
2. Recognized as the Commercial Expert –in the Techno-Commercial Assessment and Expert Committee of AGRINNOVATE INDIA Pvt Ltd (A DARE – ICAR Company
3. As a Nodal officer for the Young Innovator Programme of the Kerala Development and Innovation Strategy Council, (K-DISC), facilitated FIVE innovative technology development projects developed from students ideas (2022-23).
4. Expertmember of the StatelevelAwardCommitteefor theselectionofState FarmerAwards 2015, Govt of Kerala.
5. External subject expert at the Departmental Assessment Committee (DAC) for promotion ofScientistunderFCSintheIndianPlywoodIndustriesResearchandTrainingInstitute,Bengaluruon24January2017.
6. Recognized as *Business Expert for Kerala Startup Mission*
7. External examiner for thesis evaluation of EIGHTEEN M.Sc. (Ag.) (AgriculturalExtension)and TWO PhD students,KeralaAgricultural University.
8. Secured TWO best paper awards in the national conferences

## Annexure 1

**Research papers**

**International**

1. **Sivakumar, P.S.,** Parasar, B., Das, R.N. and Anantharaman, M. (2014) Determinants of computer utilization by extension personnel: A structural equations approach, *The Journal of Agricultural Education and Extension*, **20**:2, 191-212. DOI: https://doi.org/10.1080/1389224X.2013.803986 [JCR Impact factor: 2.654].
2. **Sivakumar, P.S.,** Nedunchezhiyan, M., Paramaguru, S., and Ray, R.C. (2009). Production system-specific differences in farmers' demand for greater yam (*Dioscorea alata*) varietal attributes in Orissa State, India. *Experimental Agriculture*, **45,** 1–14. DOI: https://doi.org/10.1017/S0014479709990433 [JCR Impact factor: 2.118].
3. **Sivakumar, P.S.,** Panda, S.H., Ray, R.C., Naskar, S.K., and Bharathi, LK. (2010). Consumer acceptance of lactic acid fermented sweet potato pickle. *Journal of Sensory Studies* **25,** 706- 719. DOI: https://doi.org/10.1111/j.1745-459X.2010.00299.x [JCR Impact factor: 2.991].
4. **Sivakumar, P. S.,** Panda, S.H., Ray, R.C., Pradhan, D.C., and Sivaramane, N. (2008). Modeling consumer acceptability of β-carotene rich sweet potato curd. *Journal of Sensory Studies*. **23,** 791-803 DOI: https://doi.org/10.1111/j.1745-459X.2008.00186.x [JCR Impact factor: 2.991].
5. Natarajan, L., Hemachandran, H., Bhuyan, R. Bordoloi, H., **Sivakumar, P.S.,** and Borpuzari, P. (2025). Cocooning with Cassava: Exploring the commercial rearing and seed production potential of *Samia ricini* Donovan on different Cassava varieties. *Int J Trop Insect Sci* (2025). https://doi.org/10.1007/s42690-025-01465-z [NAAS score - 7.10]
6. Venkatesan P, Sivaramane N, Sontakki BS, Rao CS, Chahal VP, Singh AK, **Sivakumar PS,** Seetharaman P, Kalyani B. (2023). Aligning Agricultural Research and Extension for Sustainable Development Goals in India: A Case of Farmer FIRST Programme. *Sustainability*. 15(3):2463 (JCR Impact factor: 3.889).
7. Venkatesan P, Sivaramane N, Srinivasa Rao C, Venkattakumar R**, Sivakumar, P. S,**Mooventhan P, Burman RR, Kalyani B and Challa LN (2025) Confronting food insecurity through agricultural interventions: the Farmer FIRST program in India. Front. Nutr. 11:1423599. doi: 10.3389/fnut.2024.1423599 [JCR Impact factor: 4.00 ].
8. Mahanta, S. K, Pratikshya Nayak, P., Muduli, K., Elangovan, S., **Paramasivan, S. S., Kumar** Mallick, P., Kumar Mohapatra, S., & Kumar Panda, S. (2024). Optimisation of *Levilactobacillus brevis*-fermented finger millet (Eleusine coracana) and evaluation of its effects on cancer cells (HCT116 and MDA-MB-231). Methods (San Diego, Calif.), 229, 30–40. https://doi.org/10.1016/j.ymeth.2024.06.002 [JCR Impact factor: 4.2].
9. Mahanta, S., Prusty, M., **Sivakumar, P.S.,** Mishra, D., Sahu, R.P., Goswami, C., Chawla, S., Goswami, L., Elangovan, S., Sandeep Kumar Panda (2022). Novel *Levilactobacillus brevis*-based formulation for controlling cell proliferation, cell migration and gut dysbiosis, LWT – Food Science & Technology, 154: 112818. DOI: https://doi.org/10.1016/j.lwt.2021.112818 [JCR Impact factor: 4.952].
10. Mahanta, S., **Sivakumar, P. S**., Parhi, P., Mohapatra, R. K., Dey, G., Panda, S. H., Sireswar, S., & Panda, S. K. (2022). Sour beer production in India using a coculture of Saccharomyces pastorianus and Lactobacillus plantarum: optimization, microbiological, and biochemical profiling. *Braz J Microbiol* ***53,*** *947–958* DOI.

https://doi.org/10.1007/s42770-022-00691-8[JCR Impact factor: 3.496].

11. Ray, R.C.., Panda, S.H., Swain, M.R., and **Sivakumar. P.S.,** (2012). Proximate composition and sensory evaluation of anthocyanin-rich purple sweet potato (*Ipomoea batatas* L.) wine. *International Journal of Food Science and Technology*, **47,** 452-458 DOI: https://doi.org/10.1111/j.1365-2621.2011.02861.x [JCR Impact factor: 3.713].
12. Ray, R.C. and **Sivakumar, P.S.** (2009). Traditional and novel fermented foods and beverages from tropical root and tuber crops: review. *International Journal of Food Science and Technology*, **44,** 1073–1087. DOI: https://doi.org/10.1111/j.1365-2621.2009.01933.x [JCR Impact factor: 3.713].
13. Panda, S.H., Naskar, S.K., **Sivakumar, P.S.,** and Ray, R.C. (2009). Lactic acid fermentation of anthocyanin- rich sweet potato (*Ipomea batatas* L.) into lacto-juice. *International Journal of Food Science and Technology*.**44,** 288-296. DOI: https://doi.org/10.1111/j.1365-2621.2007.01692.x [JCR Impact factor: 3.713].
14. Panda, S.H., Panda, S., **Sivakumar, P. S.** and Ray, R.C. (2009). Anthocyanin-rich sweet potato lacto-pickle: Production, nutritional and proximate composition. *International Journal of Food Science and Technology* **44**, 445-455. DOI: https://doi.org/10.1111/j.1365-2621.2008.01730.x [JCR Impact factor: 3.713].
15. Mohapatra, S. Panda, S.H., Sahoo, S.K., **Sivakumar, P.S.** and Ray, R.C. (2007). β-Carotene- rich sweet potato curd: production, nutritional and proximate composition. *International Journal of Food Science and Technology*, **42,** 1305-1314. DOI: https://doi.org/10.1111/j.1365-2621.2006.01326.x [JCR Impact factor: 3.713].

**National**

1. **Sivakumar, P.S.,** Nedunchezhiyan, M., Adhiguru, T and Jata, S.K. (2022). Estimation of Farmers' Willingness-to-Pay for Quality Planting Material of Greater Yam (*Dioscorea alata* L.). Indian Journal of Extension Education. 58(2): 135-139
2. **Sivakumar, P.S.,**Thirugnanavel, A., and Manoj E. Prabhakar. (2022). Eating Attitudes and Body Image Dissatisfaction among Naga Girl Students. *The International Journal of Indian Psychology*. 10(1): 711-723.DOI: https://ijip.in/articles/eating-attitudes-and-body-image-dissatisfaction-among-naga-girl-students/ [ICDS IF – 3.6].
3. **Sivakumar, P.S.,** Thirugnanvel, A. and Chakurano, M. (2014). Understanding the mechanisms of achieving food and nutritional security through traditional tuber crops foods: A case study among Konyak tribes of Nagaland, India. *J. Root Crops*, **40**(2): 49-57.
4. **Sivakumar, P.**S., Pradhan, D.C., Das, S.N., and Sivaramane, N. (2008).Analysis of structural change in area and productivity of sweet potato in Orissa. *Journal of Root Crops*, 34(2): 181-
5. **Sivakumar, P.S.** and Ray, R. C., Panda, S.H. and Naskar, S.K. (2006). Application of principal components analysis for sensory characterization of sweet potato curd. *Journal of Root Crops* 33**,** 62-66.
6. **Sivakumar, P.S.** and Ray, R.C. (2006). Gender difference in learning styles of trainees. *Manage Extension Research Review,* **7**, 77-84.
7. **Sivakumar, P.S.,** Nedunchezhiyan, M. and Naskar, S.K. 2005. Swamp taro production system in the North Bengal region of India. *Journal of Root Crops*, 31 (2): 149-152.
8. **Sivakumar, P.S.** and Trikha, R.N**.** (2002).Message design for community wall newspaper: Participatory approach. *MANAGE Extension Research Review.***13**(1), 114-116.

9. **Sivakumar, P.S**., Sontaki, B.S. and JeyaraghavendraRao.V.K. (2001). Redefining the extension role of State Agricultural Universities to meet the emerging challenges. *Manage Extension Research Review*. 2(2): 147-159.
10. Tengli, M.B., Meena, B.S., Paul, P., Dixit, A.K. and **Sivakumar, P.S**. (2023). Dairy tourism model for enhancing farmers' income: a niche tourism product from the Trans-Gangetic Plains of India. *Current Science*. 125(4): 401-406 [NAAS rating: 7.00].
11. Thirugnanavel, A., Deka, B.C., **Sivakumar, P.S**., Rangnamei, L., and Walling, N (2022). Colocasia (Colocasia esculenta L.) in Northeast India. *Journal of Innovative Agriculture*. 9(1): 1-7.
12. Tengli, M. B., **Sivakumar, P.S.,** Paul, P., Kesava Kumar, H. (2021). Sweet potato biofortification priority index -a strategic tool for scaling up of biofortified varieties. *Current Science*, **121:** 950-957. DOI: https://www.currentscience.ac.in/Volumes/121/07/0950.pdf [JCR Impact factor: 1.102].
13. Anantharaman, M., **Sivakumar, PS.,** Srinivas, T., and M. Ramanathan (2020). Problem Diagnosis and Research Priority Setting for Cassava in India. *J. Root Crops*. 46(1): 63-69.
14. Venkatesan, P., Sontakki, B.S., Sandhya Shenoy, N., Sivaramane, N., and **Sivakumar, P.S.** (2020) Impact of farmer producer organizations in fostering community entrepreneurship. *Indian Journal of Extension Education*. 56(2): 111-117 [NAAS Impact factor: 5.95].
15. Vijayan, B. and **Sivakumar, P.S.** (2020). Pro-Agripreneurial Factors for the Formation of Agri-startups in India. *Asian Journal of Agricultural Extension, Economics & Sociology.* 1-8 [NAAS Impact factor: 4.86].
16. Prakash, P., Jaganathan, D., **Sivakumar, P.S.,** Sheela Immanuel, Kishore, P., Kumar, P. (2018). Does APMC market increase farmers income? Evidence from value chain analysis of sweet potato in Karnataka. *Indian Journal of Agricultural Economics*, **73(3):** 342-357 [NAAS Impact factor: 5.30].
17. Parida, S., Bhowmick, P.K., Bhadoria, PBS and **Sivakumar, PS.** (2015). Utilization and Preferences of Communication Sources for MGNREGA Information by Beneficiaries in Odisha, India. *Journal of Extension, Education*, 15(4): 194-197.
18. Nedunchezhiyan, M., Anantharaman, M. and **Sethuraman Sivakumar, P.** 2010. Effectiveness of a winter school on quality planting material production of tropical tuber crops. *Journal of Root Crops*, 36 (1): 95-99.
19. Sethi, K. **Sivakumar, P. S.** and Naskar, S. K. 2005. Impact of sweet potato technologies on food and nutritional security of tribals – A success story. Intensive Agriculture. Vol. 43 (11-12): 22-23.
20. Pandian, S., Radhakrishnan, T. and **Sivakumar, P.S.** (2002). Effect of video education on knowledge gain. *Agricultural Extension Review*. **14** (5), 3-4.

**Books**

1. **Sivakumar, P.S.,** Sontaki, B.S., Rasheed Sulaiman, V. and Saravanan R. (2017). *Manual on Good Practices in Extension Research and Evaluation*, Hyderabad, Agricultural Extension in South Asia.

2. Sasikumar, R., and **Sivakumar, P.S.** (2012). *Agri-Food crops: Processing, value addition, packaging and storage.* New Delhi: New India Publishing Agency (ISBN: 9789381450406).
3. Naskar, S.K., Nedunchezhiyan, M., Rajasekhara Rao, K., **Sivakumar, P.S**. Ray, R.C., Misra, R.S. and Mukherjee, A. 2006. Root and tuber crops: in nutrition, food security and sustainable environment. Regional Centre of CTCRI, ICAR, Bhubaneswar, p 372.
4. **Sivakumar, P. S.** and Rasheed Sulaiman, V. 2015. *Extension Research in India: Current Status and Future Strategies*. AESA Working Paper No. 2. Agricultural Extension in South Asia. Hyderabad.
5. **Sivakumar, P. S.,**Sontakki, BS., Rasheed Sulaiman V, Saravanan R and Nimisha Mittal (2017). *Manual on Good Practices In Extension Research & Evaluation*. Hyderabad; Agricultural Extension in South Asia.
6. Sreedaya, G.S. and **Sivakumar, P.S**. (2023). Sustainable Urban Agriculture Systems: Principles and Practices, Brillion Publishing, New Delhi, 161 p.

**Book chapters**

1. **Sivakumar, P.S.,** Sheela Immanuel, and Adhiguru, P. (2020). *Developing models for predicting commercialisation potential of functional foods from starchy staples*. In: Singh, AK., Singh, R., Adhiguru, P., Padaria, R.N., Roy Burman, R., Arora, A. (Eds.)). Agricultural Extension: Socio-economic imperatives. New Delhi: Agricultural Extension Division, Indian Council of Agricultural Research.
2. **Sivakumar, P. S.,** Jaganathan, D. and Sheela Immanuel. (2019). *The entrepreneurial process approach for developing agricultural entrepreneurship.* In: Tactics of being an agripreneur – Learning the rope. Sreedaya, G. S., Anilkumar, A. and Seema, B. (Eds.), Sathish serial publishing house, Delhi, 9-22 pp.
3. **Sivakumar, P.S.** , Sivaramane, N. , and Adhiguru, P. (2019). *Structural Equation Modeling.* In, Nikam, V., Jajhria, A., and Suresh Pal (Eds.). Quantitative methods for social sciences. New Delhi: ICAR-National Institute of Agricultural Economics and Policy Research
4. Sreekanth, A., Nedunchezhiyan, M., Laxminarayana, K. Misra, R.S., Rajasekhara Rao, K. and **Sivakumar, P.S**. 2010. Sustainable production of sweet potato and technology transfer for enhanced yields in Orissa. In: Proceedings of a workshop on Sustainable sweet potato production and utilization in Orissa, India (Eds) Attaluri, S., Janardhan, K.V. and Light, A. International Potato Centre, Bhubaneswar, India, pp. 11-18.
5. Nedunchezhiyan, M., **Sivakumar, P.S.,** Misra, R.S. and Naskar, S.K. 2007. Curcuma starch: a tribalway of extraction and utilization. Achievements and opportunities in post harvest management and value addition in root and tuber crops (Eds. Padmaja et al.). CTCRI, ICAR, Thiruvananthapuram. pp. 176-178.\
6. Nedunchezhiyan, M., **Sivakumar, P.S**., Naskar, S.K. and Misra, R.S. 2006. Sweet potato: A suitable crop for rice based cropping system. In: Root and tuber crops: in nutrition, food security and sustainable environment. (Eds: Naskar, S.K., Nedunchezhiyan, M., Rajasekhara Rao, K., Sivakumar, P.S. Ray, R.C., Misra, R.S. and Mukherjee, A.). Regional Centre of CTCRI, ICAR, Bhubaneswar, pp 135-138.

7. **Sivakumar, P.S.,** Nedunchezhiyan, M., Naskar, S.K., Anantharaman, M. And Ramanathan, S. 2006. Improving the effectiveness of communication support system for tuber crops technology transfer: A framework. In: Root and tuber crops: in nutrition, food security and sustainable environment. (Eds: Naskar, S.K., Nedunchezhiyan, M., Rajasekhara Rao, K., Sivakumar, P.S. Ray, R.C., Misra, R.S. and Mukherjee, A.). Regional Centre of CTCRI, ICAR, Bhubaneswar, pp 363-372.
8. **Sivakumar, P.S**. Nedunchezhiyan, M. and Ray, R.C. 2006. Indigenous technology, eco-friendly environment and sustainable agriculture. In : Education, environment and sustainable development (Ed. Satapathy, M.K.) pp. 228-252.
9. **Sivakumar, P.S**. (1999). New Information Technologies for Agricultural Development in Post-GATT Era. In: Hansra. B.S., Chandrakandan, K. Veerabhadraiah, V. and Selvaraj, C. (Eds.). Globalising Indian Agriculture: Policies and Strategies. Classical Publishing Company, New Delhi.
10. Anantharaman, M. Ramanathan, S. and **Sivakumar, P.S.** (2002). Capacity development for KVK – Internal and external dimensions. In: Samata, R.K. and Chandra Gowda, M.J. (Eds.). Krishi Vigyan Kendra: The capacity building of farmers. B.K. Publishing Corporation, New Delhi.
11. **Sivakumar, P.S.,** Parida, S, and Ramasubramanian, (2015). Developing effective e-learning modules for extension training. In: Sontakki, B.S., Venkattakumar, R., and Anandaraja, (Eds.). Conducting an Effective and Successful Training Programme (Pp: 245-255), New Delhi: New India Publishing Agency.
12. Parida, S., Bhowmick, P.K., Bhadoria, PBS and **Sivakumar, PS.** (2015). Utilization and Preferences of Communication Sources for MGNREGA Information by Beneficiaries in Odisha, India. Journal of Extension, Education, 15(4): 194-197.
13. **Sivakumar, P. S.,** Jaganathan, D. and Sheela Immanuel. 2019. The entrepreneurial process approach for developing agricultural entrepreneurship. In: Tactics of being an agripreneur – Learning the rope. Sreedaya, G. S., Anilkumar, A. and Seema, B. (Eds.), Sathish serial publishing house, Delhi, 9-22 pp.
14. **Sivakumar, P.S.** , Sivaramane, N. , and Adhiguru, P. (2019). Structural Equation Modeling. In, Nikam, V., Jajhria, A., and Suresh Pal (Eds.). Quantitative methods for social sciences. New Delhi: ICAR-National Institute of Agricultural Economics and Policy Research
15. **Sivakumar, P.S**., Sheela Immanuel, and Adhiguru, P. (2020). Developing models for predicting commercialisation potential of functional foods from starchy staples. In: Singh, AK., Singh, R., Adhiguru, P., Padaria, R.N., Roy Burman, R., Arora, A. (Eds.)). Agricultural Extension: Socio-economic imperatives.New Delhi: Agricultural Extension Division, Indian Council of Agricultural Research
16. Multiple authors. (2020). Entrepreneurship through Market-Linked Extension: The Role of Institutional Innovations. (pp: 19-1 to 19-10). In: Entrepreneurship through Market-Linked Extension Innovations in Agricultural Extension, Michigan State University and MANAGE.
17. Parshad, R., **Sivakumar, PS**., and Kumar, GAK (2020). Agricultural Extension Education Research – Design and methods. In: Singh, AK., Adhiguru, P Padaria, R.N., and Roy Burman, R., (Eds.). Agricultural Extension: Socio-economic imperatives. New Delhi:

Agricultural Extension Division, Indian Council of Agricultural Research. pp. 354-384

**Technical Bulletins**


1. **Sivakumar, P.S.,** Sajeev, M.S., Kesava Kumar, H., and Bansode, V. (2020). *Commercializable Technologies from ICAR-CTCRI*, Thiruvananthapuram: ICAR-Central Tuber Crops Research Institute.
2. **Sivakumar PS.,** Jayaprakas, CA., Kesava Kumar, H, Bansode, V, Koundinya, AVV, Nedunchezhiyan, M., Kanwat, M., Santosh Kumar and Sasi Kumar, R. (2020). *Making a rainbow. Production and utilisation of anti-oxidant rich sweet potato varieties,*Thiruvananthapuram , ICAR – Central Tuber Crops Reserarch Institute.
3. **Sivakumar PS.,** Kesava Kumar, H., Sheela Immanue, Sheela, MN, Jayaprakas, CA., Murgesan, P., Mohan, C. and V. Ravi (2020). *Rainbow diet campaign: An extension strategy for scaling up biofortified tuber crops varieties*. Thiruvananthapuram , ICAR – Central Tuber Crops Reserarch Institute.
4. Namrata Ankush Giri, Sanket J. More, P. Murugesan, K. Laxminarayana, Visalakshi C., Suresh Kumar J., **P. S. Sivakumar**, Mandira Chakrabar. 2020. *Tuber Crops based Traditional Food Recipes of Tripura.* Technical Bullen No. 79. ICAR-Central Tuber Crops Research Institute, Thiruvananthapuram, Kerala, pp. 1 – 44.
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