

SENTHIL-NATHAN, SENGOTTAYAN

Professor

Principal Investigator (CSIR, DST, DBT & UGC)

Sri Paramakalyani Centre for Excellence in Environmental Sciences,

Manonmaniam Sundaranar University,

Alwarkurichi 627 412, Tamil- Nadu, INDIA

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EDUCATION

Ph D

Animal Science-Biopesticides/Insect Toxicology,
(Bharathiar University, 2000, Coimbatore, TN, India)

M Phil

Animal science, 1995 (Insect Biodiversity)

M Sc

Zoology, 1994

B Sc

Zoology, 1992 (Ancillary Chemistry and Botany)

PROFESSIONAL RESEARCH POSITIONS

Professor

(2017 -present)

Associate Professor

(2014-16)

Assistant Professor

(2007-14)

Visiting Professor

(2011-2012)

Research Scientist

(2006-2007)

**Post-Doctoral Research
Scientist**

(2003-2006)

Assistant Professor

(2000-2003)

Ph D student

(1995-1999)

Sri Paramakalyani Centre for Excellence in
Environmental Sciences,
Manonmaniam Sundaranar University,
Tamil Nadu.

Louisiana State University Agricultural Center,
Baton rouge, USA (Host Supervisor-Dr. M.J. Stout)

Plant Environment Division, Honam Agricultural
Research Institute, Republic of Korea
(Adviser-Dr. M. Y. Choi)

Department of Environmental Engineering,
Chonbuk National University, Republic of Korea
(Adviser-Dr. P. G. Chung)

Post Graduate and Research Department of
Biotechnology, Vivekanandha College, Periyar
University Tamil Nadu, India

Bharathiar University, Coimbatore TN
(Adviser-Dr. K. Murugan)

HONORS, AWARDS AND FELLOWSHIPS

2011-2012	BOYSCAST Fellow -DST Govt. of India (Louisiana State University, Baton Rouge, USA).
2010	Young Scientist award under Fast Track-DST, Govt. of India
2009	Young Scientist award under RGYI-DBT, Govt. of India
2004	CBNU-International Post-Doctoral Fellowship, Korea
2002, 2003	Best faculty award, VICAS, Periyar University
1994	Best outgoing student at Post Graduate level, Bharathiar University

SYNERGISTIC ACTIVITIES AND PROFESSIONAL POSITIONS

a. Administrative

- Head- In-charge (2014), Sri Paramakalyani Centre for Excellence in Environmental Sciences, MSU, Alwarkurichi 627 412, Tamil- Nadu.
- Member Syndicate - Manonmaniam Sundaranar University, 2017-2018
- Disciplinary action panel (member), 2016- till date, MSU
- NAAC core committee (member), 2018 to till date, MSU
- Head- In-charge (2002-03), Post Graduate and Research Department of Biotechnology, Vivekandha College, (Periyar University) Trichengode, Tamil- Nadu.

b. Academic and Scientific Societal Service

- Subject Editor-[Nature- Scientific Reports](#) (Nature Publisher)
- Editor- [Biocatalysis and Agricultural Biotechnology](#) (Elsevier Publisher)
- Associate Editor – [Toxicology Reports](#) (Elsevier Publisher)
- Associate Editor-[Frontiers in Invertebrate Physiology](#) (Frontiers Publisher)
- Associate Editor-[International Journal of Pest Management](#) (Taylor & Francis)
- Associate Editor-[Archives of Phytopathology and Plant Protection](#) (Taylor & Francis)
- Associate Editor [Florida Entomologist](#) (www.ufl.edu/)
- Editorial Board Member-[Journal of Asia-Pacific Entomology](#) (Elsevier Pub)
- Editorial Board Member [Biologia](#) (Springer)
- Editorial Board Member- [Biopesticide International](#) (Biopesticide.org)
- Review Editor- [Frontiers in Plant Science](#) (Frontiers Publisher)
- Editorial Board Member-Austin Journal of Environmental Toxicology
- *Ad-hoc* and panel reviewer for DST-SERB, DBT, ICMR, NSF, CSF.

c. Academic Programming

- MANO Environmental club organizing committee (member), 2015 - till date
- Stakeholder - Thamiraparani river conservation, Southern Western Ghats, 2009 - till date.
- Co-Convener, National Conference Global Climatic Change and Mitigation, SPKCEES, 2017.
- Co-Convener, National Conference Environmental Science and Technology, SPKCEES, 2017.
- Organizing Secretary, National seminar - '**Impact of Climate Change on Environment and Biodiversity (NCCEB - 2015)**', SPKCEES, 2015.
- Member, National advisory committee for the international conference (Member)- '**Ecofriendly Plant Protection and production for Food Security, Food Safety and the role of Biopesticides in Global Economy**, 4th Biopesticide International Conference, Crop Protection Research Centre, St. Xavier's College Palayamkottai, 2013.
- Member, National advisory committee for the international conference (Member)- '**Third International Congress on Global Warming on Biodiversity of Insects: Management and Conservation Strategies**' (GW-BIMC, '13)', Bharathiar University, 2013.
- Organizing committee member, National conference - '**Environ Nano-2011**' (UGC sponsored) 2011.
- National advisory committee for the national conference (Member) - '**Impact of Climate Change on the Biodiversity of Insects and Environment**', Organized by the Department of Zoology, Bharathiar University, Coimbatore, 2010.
- Organizing committee, National conference sponsored by the UGC (member) - '**Environ Nano-2010**', 2010.
- Organizing committee, State level conference on River Ecosystems and Climatic Change, SPKCEES, Alwarkurichi, 2010.
- National advisory committee (member) - '**Biopesticide International Conference (BIOCICON-2009)**' 'Crop Protection Research Centre, St. Xavier's College Palayamkottai, 2009.
- National advisory committee (member) - '**International Congress of Global Warming on Biodiversity of Insects: Management and Conservation**' at Bharathiar University, Coimbatore, India, 2009.
- International advisory committee International Conference (member) - '**Biodiversity of insects: Challenging Issue in management and conservation**' at Bharathiar University, Coimbatore, India, 2006.
- National advisory committee for National Conference (Member) - "**Recent Trends Insect Control**", Bharathiar University, 2003.

- Organizing committee member - '**National Seminar on Biotechnology in the new Millennium**' at Vivekanandha College, Elaympalayam, TN, 2002.

d. Recruitment

- Qualification approval committee (member), 2010 - till date
- Assistant Professor Recruitment panel (member) - 2015 and 2016
- Department of Animal Science, Manonmaniam Sundaranar University
- Department of Biotechnology, Manonmaniam Sundaranar University
- Department of Environmental Science, Manonmaniam Sundaranar University

e. Infrastructure

- Chairperson, SPKCEES Plant Science Growth Chamber Committee, 2009 - present.
- Chairperson, SPKCEES Insect culture facility, 2009-present.
- SPKCEES Greenhouse Committee (Member), 2012-present.
- SPKCEES Animal house Committee (Member), 2012-present.
- Strategic Planning Committee (Member) for climate change studies, 2009 -present.
- Co-ordinator, SPKCEES sophisticated instrument facility, 2018 - present.
- Campus infrastructure development committee, RUSA (member), 2017 - present

f. Academic

- Member, Board of studies, Department of Zoology, Sri Parsakthi College for Women, Courtallam
- Question paper setter - M.Phil. and M.Sc., - Zoology, Environmental Science, Insecticide Toxicology, Biotechnology; Sri Sankara Arts & Science college, Periyar University, Bharathiar University, Bharathidasan University, University of Calicut.
- Doctoral Committee (member) - Research Scholars of Periyar University, Bharathidasan University, Madurai Kamaraj University, Karpagam University.
- External examiner, Ph.D viva-voce - Scholars of Periyar University, Bharathidasan University, University of Calicut.
- External Member, Graduate Research dissertation, Anna University, Chennai
- Member, Board of studies, Department of Zoology, St. Xavier's College, Palayamkottai
- Member board of studies, SPKCEES, MS University, Alwarkucih

g. Funding Agency Advisory

- Czech Science Foundation, Czech Republic.
- Department of Biotechnology, Government of India.
- Department of Science and Technology, Government of India
- Council of Scientific and Industrial Research, Government of India
- Indian Council of Agricultural Research, Government of India
- Ministry of Environment and Forests, Government of India

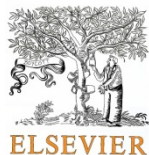
h. Development

- Honorary observer, NAAC peer team visit - Nanjil Catholoc College of Arts and Science, Kanyakumari, 2017.
- Inspection Committee (member) - Constitution colleges of Manonmaniam Sundaranar University, 2017-2018
- Mentor, College development council - M.S. University Constituent college, Sathankulam, 2017
- Convener & Subject expert, Inspection Commission - Department of Zoology, Muslim Arts College, Thiruvithancode, 2017.
- Convener, Inspection Committee - Diploma in Human Care Services, Zion trust, Madurai, 2018
- Chair Person, Inspection Commission - Thiruvalluvar college, Papanasam, 2017
- Convener, Inspection Commission - ELP Centre, Diploma in Siddha Human Care, Sigaram Foundation, Kallidaikurichi, 2018.

i. International Association

- Non-funded cooperative agreement - United States Department of Agriculture, Agriculture Research Service, Fort Pierce Florida, 2018.
- Member, International Society for Pest Information (ISPI), Darmstadt, Germany.
- Member, International Commission for Plant – Bee relationship, France.
- Member, The Science Advisory Board, USA.
- Member, Indian Entomological Society
- Member, Entomological Society of Korea
- Member, Weed Science Society
- Member, Orthopterists' Society
- Member, Indian Association of Invertebrate Reproduction
- Member, Society of Biopesticide Sciences
- Member PGPR, USA

Ad-Hoc Referee for Peer-Review Journals



Acta Tropica
Asian Pacific Journal of Tropical Medicine
Arabian Journal of Chemistry
Bioresource Technology
Chemical and Biological Technologies in Agriculture,
Chemosphere
Colloids and Surfaces B: Biointerfaces
Crop Protection
Ecotoxicology and Environmental Safety
Experimental Parasitology
Journal of Hazardous Materials
Microbial Pathogenesis
Pesticide Biochemistry and Physiology
Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy,
Materials Research Bulletin
Toxicology
Toxicon
3Biotech



Archives of Insect Biochemistry and Physiology
Agriculture and Forest Entomology
Entomologia Experimentalis et Applicata
Entomological Research
Journal of Applied Entomology
Journal of Applied Microbiology
Journal of Microscopy
Letters in Applied Microbiology
Journal of Vector Ecology
Pest Management Science

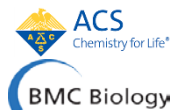


Natural Product Research, Toxin Reviews



Applied Biochemistry and Biotechnology
Biologia
Ecotoxicology
Environmental Science and Pollution Research
European Journal of Plant Pathology
International Journal of Peptide Research and Therapeutics
Integrated Pest Management Reviews
Journal of Parasitic Diseases
Parasitology Research

Journal of Pest Science
Journal of Plant Growth Regulator
Probiotics and Antimicrobial Proteins
Proteome Science



Brazilian Archives of Biology and Technology
Cellular and Molecular Biology
Indian Journal of Experimental Biology
International Journal of Green Pharmacy
Invertebrate Survival Journal
Journal of Agricultural and Food Chemistry
Journal of Economic Entomology
Journal of Insect Science
Journal of Plant Protection Research
Nano-Bio Science
Plos One
Physiological Entomology
Rice Science

PEER REVIEWED PUBLICATIONS

List of Publications: Total Citations: **3317**; Total Impact Factors of published papers: **283.37** **Average impact of published paper: 2.93; H index: 33.**

1. **Senthil-Nathan, S.**, 2019. Effect of methyl jasmonate (MeJA)-induced defenses in rice against the rice leaffolder *Cnaphalocrocis medinalis* (Guenée) (Lepidoptera: Pyralidae). **Pest Management Science**, 75: 460–465. (IF- 3.249)
2. Chellappandian, M., **Senthil-Nathan, S***, Vasantha-Srinivasan, P., Karthi, S., Thanigaivel, A., Kalaivani, K. et al. 2019. Target and non-target botanical pesticides effect of *Trichodesma indicum* (Linn) R. Br. and their chemical derivatives against the dengue vector, *Aedes aegypti* L. **Environmental Science and Pollution Research**, 1-13. doi: 10.1007/s11356-019-04870-3 (IF- 2.7)
3. Chanthini, K.M.P., **Senthil-Nathan, S***, Soranam, R., Thanigaivel, A., Sreenath Kumar, C and Kingsley, S.J., 2019. Bacterial compounds, as biocontrol agent against early blight (*Alternaria solani*) and tobacco cut worm (*Spodoptera litura* Fab.) of tomato (*Lycopersicon esculentum* Mill.) **Archives of Phytopathology and Plant Protection**, <https://doi.org/10.1080/03235408.2018.1496525> (IF - 0.65)
4. Vasantha-Srinivasan, P., Chellappandian, M., **Senthil-Nathan, S***, Ponsankar, A., Thanigaivel, A., Karthi, S., Edwin, E.S., Selin-Rani, S., Kalaivani, K., Maggi, F. and Benelli, G., 2019. A novel herbal product based on *Piper betle* and *Sphaeranthus indicus* essential oils: Toxicity, repellent activity and impact on detoxifying enzymes GST and CYP450 of *Aedes aegypti* Liston (Diptera: Culicidae). **Journal of Asia-Pacific Entomology**, 21(4), pp.1466-1472. (IF- 0.875)
5. Benelli, G., Pavela, R., Petrelli, R., Cappellacci, L., Canale, A., **Senthil-Nathan, S** and Maggi, F., 2018. Not just popular spices! Essential oils from *Cuminum cyminum* and *Pimpinella anisum* are toxic to insect pests and vectors without affecting non-target invertebrates. **Industrial Crops and Products**, 124, pp.236-243. (IF- 3.849)
6. Rajkumar, R., Shivakumar, M.S., **Senthil-Nathan, S** and Selvam, K., 2018. Pharmacological and Larvicidal Potential of Green Synthesized Silver Nanoparticles Using *Carmona retusa* (Vahl) Masam Leaf Extract. **Journal of Cluster Science**, 29(6), pp.1243-1253. (IF- 1.302)
7. Kumar, K.K., Sridhar, J., Murali-Baskaran, R.K., **Senthil-Nathan, S***, Kaushal, P., Dara, S.K. and Arthurs, S., 2018. Microbial biopesticides for insect pest management in India: Current status and future prospects. **Journal of Invertebrate Pathology**, <https://doi.org/10.1016/j.jip.2018.10.008> (IF- 2.198)
8. Kamaraj, C., Deepak, P., Balasubramani, G., Karthi, S., Arul, D., Aiswarya, D., Amutha, V., Vimalkumar, E., Mathivanan, D., Suseem, S.R., Chanthini, K.M.P and **Senthil-Nathan*, S***, 2018. Target and non-target toxicity of fern extracts against mosquito vectors and beneficial aquatic organisms. **Ecotoxicology and Environmental Safety**, 161, pp.221-230. (IF- 3.974)
9. Karthi, S., Vaideki, K., Shivakumar, M.S., Ponsankar, A., Thanigaivel, A., Chellappandian, M., Vasantha-Srinivasan, P., Chanthini, K.M.P., Hunter, W.B. and **Senthil-Nathan, S***, 2018. Effect of *Aspergillus flavus* on the mortality and activity of antioxidant enzymes of

- Spodoptera litura* Fab. (Lepidoptera: Noctuidae) larvae. **Pesticide Biochemistry and Physiology**, 149, pp.54-60. (IF- 3.440)
10. Dinesh-Kumar, A., Srimaan, E., Chellappandian, M., Vasantha-Srinivasan, P., Karthi, S., Thanigaivel, A., Ponsankar, A., Chanthini, K.M.P., Shyam-Sundar, N., Annamalai, M., Kalaivani, K. and **Senthil-Nathan, S***.2018. Target and non-target response of *Swietenia Mahagoni* Jacq. chemical constituents against tobacco cutworm *Spodoptera litura* Fab. and earthworm, *Eudrilus eugeniae* Kinb. **Chemosphere**, 199, pp.35-43. (IF- 4.208)
 11. Chellappandian, M., Vasantha-Srinivasan, P., Senthil-Nathan, S., Karthi, S., Thanigaivel, A., Ponsankar, A., Kalaivani, K. and Hunter, W.B., 2018. Botanical essential oils and uses as mosquitocides and repellents against dengue. **Environment International**, 113, pp.214-230. (IF- 7.088)
 12. Vivekanandhan, P., Kavitha, T., Karthi, S., **Senthil-Nathan, S** and Shivakumar, M.S., 2018. Toxicity of *Beauveria bassiana*-28 Mycelial Extracts on Larvae of *Culex quinquefasciatus* Mosquito (Diptera: Culicidae). **International Journal of Environmental Research and Public Health**, 15(3), p.440. (IF- 2.101)
 13. Vivekanandhan, P., Venkatesan, R., Ramkumar, G., Karthi, S., **Senthil-Nathan, S*** and Shivakumar, M.S., 2018. Comparative Analysis of Major Mosquito Vectors Response to Seed-Derived Essential Oil and Seed Pod-Derived Extract from *Acacia nilotica*. **International Journal of Environmental Research and Public Health**, 15(2), p.388. (IF- 2.101)
 14. Senthil-Nathan, S., 2018. Natural pesticide research (Editorial) **Physiological and Molecular Plant Pathology**, (IF- 1.7)
 15. Murugan, K., Jaganathan, A., Rajaganesh, R., Suresh, U., Madhavan, J., **Senthil-Nathan, S**, Rajasekar, A., Higuchi, A., Kumar, S.S., Alarfaj, A.A. and Nicoletti, M., 2018. Poly (Styrene Sulfonate)/Poly (Allylamine Hydrochloride) Encapsulation of TiO₂ Nanoparticles Boosts Their Toxic and Repellent Activity Against Zika Virus Mosquito Vectors. **Journal of Cluster Science**, 29(1), pp.27-39. (IF- 1.471)
 16. Annamalai, M., Annamalai, V.S., Chellappandian, T., Sengodan, M., Mayabini, K., Pirasanna, J.G.G., Totan, P and **Senthil-Nathan, S***. (2017). Effect of thiamethoxam on growth, biomass of rice varieties and its specialized herbivore, *Scirpophaga incertulas* Walker. **Physiological and Molecular Plant Pathology**, 101, pp. 146-155. (IF-1.7)
 17. Murali-Baskaran, R.K., **Senthil-Nathan, S***, Mankin, R.W. and Suresh, K., 2017. Kairomone activity of okra, *Abelmoschus esculentus* (L.) Moench genotypes on lepidopteran pests and their entomophages. **Physiological and Molecular Plant Pathology**, 101, pp.29-37 (IF-1.54).
 18. Annamalai, M., Vasantha-Srinivasan, P., Thanigaivel, A., Muthiah, C., Karthi, S., Jena, M., Pandi, G.G.P., Adak, T. and **Senthil-Nathan, S***,2017. Effect of thiamethoxam on growth, biomass of rice varieties and its specialized herbivore, *Scirpophaga incertulas* Walker. **Physiological and Molecular Plant Pathology**, 101, pp.146-155. (IF-1.54)
 19. Chandrasekaran, R., Revathi, K., **Senthil-Nathan, S***, Kalaivani, K., Hunter, W.B., Duraipandiyam, V., Al-Dhabi, N.A. and Esmail, G.A., 2017. Eco-friendly formulation of wild *Bacillus thuringiensis* secondary metabolites through molecular characterization against the lepidopteran pest. **Physiological and Molecular Plant Pathology**, 101, pp.93-104. (IF-1.54)

20. Dhivya, K., Vengateswari, G., Arunthirumeni, M., Karthi, S., **Senthil-Nathan, S***, and Shivakumar, M.S., 2017. Bioprospecting of *Prosopis juliflora* (Sw.) DC seed pod extract effect on antioxidant and immune system of *Spodoptera litura* (Lepidoptera: Noctuidae). **Physiological and Molecular Plant Pathology**, 101 (2018): 45-53. (IF-1.54)
21. Vasantha-Srinivasan, P., Thanigaivel, A., Edwin, E.S., Ponsankar, A., **Senthil-Nathan, S***, Selin-Rani, S., Kalaivani, K., Hunter, W.B., Durairamchandran, V. and Al-Dhabi, N.A., 2017. Toxicological effects of chemical constituents from Piper against the environmental burden *Aedes aegypti* Liston and their impact on non-target toxicity evaluation against biomonitoring aquatic insects. **Environmental Science and Pollution Research**, pp.1-13. (IF-2.7)
22. Murali-Baskaran, R.K., Sharma, K.C., Kaushal, P., Kumar, J., Parthiban, P., **Senthil-Nathan, S*** and Mankin, R.W., 2017. Role of kairomone in biological control of crop pests- A review. **Physiological and Molecular Plant Pathology**, 101 (2018): 3-15. (IF- 1.54)
23. Kalaivani, K., Kalaiselvi, M.M. and **Senthil-Nathan, S***, 2017. Effect of Methyl Salicylate (MeSA) induced changes in rice plant (*Oryza sativa*) that affect growth and development of the rice leafhopper, *Cnaphalocrocis medinalis*. **Physiological and Molecular Plant Pathology**, 101, pp.116-126. (IF- 1.54)
24. Kirubakaran, S.A., Abdel-Megeed, A. and **Senthil-Nathan, S***, 2017. Virulence of selected indigenous *Metarhizium pingshaense* (Ascomycota: Hypocreales) isolates against the rice leafhopper, *Cnaphalocrocis medinalis* (Guenée) (Lepidoptera: Pyralidae). **Physiological and Molecular Plant Pathology**, 101, pp.105-115. (IF- 1.54)
25. Shahriari M, Sahbzadeh N, Zibae A, Khani A., **Senthil-Nathan, S.**, 2017 Metabolic response of *Ephesia kuehniella* Zeller (Lepidoptera: Pyralidae) to essential oil of ajwain and thymol, **Toxin Reviews**, 36(3), pp.204-209. (IF-1.1).
26. Thanigaivel, A., **Senthil-Nathan, S***, Vasantha-Srinivasan, P., Edwin, E.S., Ponsankar, A., Selin-Rani, S., Pradeepa, V., Chellappandian, M., Kalaivani, K., Abdel-Megeed, A. and Narayanan, R., 2017. Chemicals isolated from *Justicia adhatoda* Linn reduce fitness of the mosquito, *Aedes aegypti* L. **Archives of Insect Biochemistry and Physiology**, 94(4), p.e21384. (IF-1.6)
27. Thanigaivel, A., Vasantha-Srinivasan, P., Edwin, E.S., Ponsankar, A., Selin-Rani, S., Chellappandian, M., Kalaivani, K., **Senthil-Nathan, S*** and Benelli, G., 2017. Development of an eco-friendly mosquitocidal agent from *Alangium salvifolium* against the dengue vector *Aedes aegypti* and its biosafety on the aquatic predator. **Environmental Science and Pollution Research**, pp.1-13. (IF- 2.7)
28. Vasantha-Srinivasan, P., **Senthil-Nathan, S***, Ponsankar, A., Thanigaivel, A., Edwin, E.S., Selin-Rani, S., Chellappandian, M., Pradeepa, V., Lija-Escaline, J., Kalaivani, K. and Hunter, W.B., 2017. Comparative analysis of mosquito (Diptera: Culicidae: *Aedes aegypti* Liston) responses to the insecticide Temephos and plant derived essential oil derived from *Piper betle* L. **Ecotoxicology and Environmental Safety**, 139, pp.439-446. (IF-3.974)
29. Vivekanandhan, P., **Senthil-Nathan, S.** and Shivakumar, M.S., 2017. Larvicidal, pupicidal and adult smoke toxic effects of *Acanthospermum hispidum* (DC) leaf crude extracts against mosquito vectors. **Physiological and Molecular Plant Pathology**, 101 (2018): 156-162. (IF-1.54)
30. Radhika, S., Sahayaraj, K., **Senthil-Nathan, S.** and Hunter, W.B., 2017. Individual and synergist activities of monocrotophos with neem based pesticide, Vijayneem against

- Spodoptera litura* Fab. **Physiological and Molecular Plant Pathology**, 101, pp.54-68. (IF-1.54)
31. Jinu, U., Rajakumaran, S., **Senthil-Nathan, S.** Geetha, N. and Venkatachalam, P., 2017. Potential larvicidal activity of silver nanohybrids synthesized using leaf extracts of *Cleistanthus collinus* (Roxb.) Benth. ex Hook. f. and *Strychnos nux-vomica* L. nux-vomica against dengue, Chikungunya and Zika vectors. **Physiological and Molecular Plant Pathology**, 101, pp.163-171. (IF-1.54)
 32. Benelli, G, Pavela, R., Canale, A., Cianfaglione, K., Ciaschetti, G., Conti, F., Nicoletti, M., **Senthil-Nathan, S.**, Mehlhorn, H., Maggi, F., 2017. Acute larvicidal toxicity of five essential oils (*Pinus nigra*, *Hyssopus officinalis*, *Satureja montana*, *Aloysia citrodora* and *Pelargonium graveolens*) against the filariasis vector *Culex quinquefasciatus*: synergistic and antagonistic effects. **Parasitology International** 66(2), pp.166-171. (IF-1.8).
 33. Thanigaivel, A., Senthil-Nathan, S., Vasantha-Srinivasan, P., Edwin, E.S., Ponsankar, A., Selin-Rani, S., Pradeepa, V., Chellappandian, M., Kalaivani, K., Abdel-Megeed, A. and Narayanan, R., 2017. Chemicals isolated from *Justicia adhatoda* Linn reduce fitness of the mosquito, *Aedes aegypti* L. **Archives of Insect Biochemistry and Physiology**, 94(4). (IF- 1.6)
 34. Thanigaivel, A., Vasantha-Srinivasan, P., Senthil-Nathan, S., Edwin, E.S., Ponsankar, A., Chellappandian, M., Selin-Rani, S., Lija-Escaline, J. and Kalaivani, K., 2017. Impact of *Terminalia chebula* Retz. against *Aedes aegypti* L. and non-target aquatic predatory insects. **Ecotoxicology and environmental safety**, 137, pp.210-217. (IF-3.974)
 35. Lanka, S.K., **Senthil-Nathan, S.**, Blouin, D.J. and Stout, M.J., 2017. Impact of Thiamethoxam Seed Treatment on Growth and Yield of Rice, *Oryza sativa*. **Journal of Economic Entomology**, 110(2), pp.479-486. (IF-1.8)
 36. Murugan, K., Roni, M., Panneerselvam, C., Suresh, U., Rajaganesh, R., Aruliah, R., Mahyoub, J.A., Trivedi, S., **Senthil-Nathan, S.**, Rehman, H., Al-Aoh, H.A.N. and Kumar, S., 2017. *Sargassum wightii*-synthesized ZnO nanoparticles reduce the fitness and reproduction of the malaria vector *Anopheles stephensi* and cotton bollworm *Helicoverpa armigera*. **Physiological and Molecular Plant Pathology**. (IF-1.54)
 37. Vasantha-Srinivasan, P., **Senthil-Nathan, S***, Ponsankar, A., Thanigaivel, A., Chellappandian, M., Edwin, E.S., Selin-Rani, S., Kalaivani, K., Hunter, W.B., Duraipandiyam, V. and Al-Dhabi, N.A., 2017. Acute toxicity of chemical pesticides and plant-derived essential oil on the behavior and development of earthworms, *Eudrilus eugeniae* (Kinberg) and *Eisenia fetida* (Savigny). **Environmental Science and Pollution Research**, pp.1-12. (IF-2.7)
 38. Chellappandian, M., Thanigaivel, A., Vasantha-Srinivasan, P., Edwin, E.S., Ponsankar, A., Selin-Rani, S., Kalaivani, K., **Senthil-Nathan, S*** and Benelli, G., 2017. Toxicological effects of *Sphaeranthus indicus* Linn. (Asteraceae) leaf essential oil against human disease vectors, *Culex quinquefasciatus* Say and *Aedes aegypti* Linn., and impacts on a beneficial mosquito predator. **Environmental Science and Pollution Research**, pp.1-13. (IF-2.7)
 39. Edwin, E. S., Vasantha-Srinivasan, P., Ponsankar, A., Thanigaivel, A., Selin-Rani, S., Mankin, R. W., **Senthil-Nathan, S***, et al. 2016. Effects of temperature and nonionizing ultraviolet radiation treatments of eggs of five host insects on production of *Trichogramma chilonis* Ishii (Hymenoptera: Trichogrammatidae) for biological control applications. **Journal of Asia-Pacific Entomology**, 19(4), 1139-1144. (IF-1.0).

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Book(s) chapter published: (3)

1. **Senthil-Nathan S.** 2015. A review of biopesticides and their mode of action against insect pest's .In: Environmental Sustainability- Role of Green Technologies, Springer-Verlag, pp.49- 63.
2. **Senthil-Nathan, S.** 2011. Biology, Behavioral and Population Dynamics of the Rice Leafhopper Complex In: Ananthakrishnan, T. N., Sivaramakrishnan, K.G. (Eds.) Dynamics of Insect Behavior, Scientific Publishers, Jodhpur, pp.156-167.
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RESEARCH SUPPORT AND FUNDING

Research Grants Secured (223.59 lakhs as Principal Investigator)

1. To evaluate the cyto-toxicological effects of bio active derivatives in the midgut and nervous tissues of the tobacco cutworm *Spodoptera litura* using Fluorescent microscopy techniques. **PI**, DBT foldscope, Govt. of India, **Rs. 8** lakhs.
2. Induced defenses in rice (*Oryza sativa*) by exogenous chemical elicitor against specialized pest and disease of the rice. **PI**, DST, Govt. of India, **Rs. 74.55** lakhs.
3. Molecular characterization of the entomopathogenic bacteria and detection of toxic gene in strain using RAPD-PCR technique: Development of microbial pesticides against the polyphagus insect *Spodoptera litura* (Fabricius) (Lepidoptera: Noctuidae). **PI**, DST, Govt. of India, **Rs. 25** lakhs.
4. Development of environmental-friendly biocontrol technology for the rice leaffolder by the induced defense of biotic and abiotic means in vivo with reference to high production of jasmonic acid. **PI**, DBT, **Rs. 25.90** lakhs.
5. Effect of enriched CO₂ and O₃ on insect-plant interactions. A field experiment and green house analysis of CO₂ and O₃ mediated changes on plant chemistry in specialist herbivore performance. **PI**, CSIR, **Rs.27.09** lakhs
6. Molecular characterization through RAPD-PCR technique of wide range of entomopathogenic fungi against the rice leaffolder complex with rice defense enzyme assay: Implication for integrated management of leaffolder population through novel biotechnology technique. **PI**, DBT, **Rs. 23.67** lakhs.
7. Effect of elevated CO₂ on biology and nutritional ecology of the rice leaffolder *Cnaphalocrocis medinalis* Guenée (Lepidoptera: Pyralidae) and its natural enemies. **PI**, UGC-Major Research Project Scheme, University Grant Scheme, **Rs. 10.76** lakhs.

CURRENT MEMBERS OF THE BIOPESTICIDE AND ENVIRONMENTAL TOXICOLOGY (BET) LAB

RESEARCH GUIDANCE:

Post-Doctoral Scientists

Dr. Chellappandian Muthiah, (N-PDF-DST)

Dr. S. Karthi, (N-PDF-DST) and Dr. Kothari UGC-Post-Doctoral Fellow

Dr. A. Thanigai vel (N-PDF-DST) (Co-supervisor)

Dr. A. Ponsankar (N-PDF-DST) (Co-supervisor)

Ph.D. Research Scholars (Current)

Pavana K Nair Ph.D Student (2016-Present)

P. Kirupananda Rajan (2016-Present)

K. Chanthini Ph.D Student (2017-Present)

N. Shyam Sundar, Ph.D Student (2017- Present)

V. Stanly Raja, Ph.D Student, DST-SERB, SRF (2017- Present)

H. Sivanesh, Ph.D Student (2017- Present)

R. Ramasubramaian Ph.D Student (2019- Present)

PREVIOUS MEMBERS OF THE BET LAB

[Dr. P. Indira-Gandhi](#), (DBT-RGYI-National Post-Doc)_currently working as Assistant Professor, Tamil Nadu Agricultural University, Coimbatore (2009-2010). Molecular Entomology.

[Dr. S. Nisha](#), Integrated biological control of bacterial blight disease through induced systemic resistance by the mixture of PGPR strains and *Vitex negundo* L. extract. Junior Research Fellow (DBT). (2009-12). Currently working as **Assistant Professor and Head** at Sri Ram Nallamani Yadava College, Tenkasi.

[Dr. S. Sathish-Narayanan](#), Effect of entomopathogenic fungi *Metarhizium anisopliae* against teak pest in Western Ghats, Southern India: Implication for integrated management of teak pest. Junior Research Fellow (UGC). Currently working as a **Research Scientist** at KMTR, Tamil Nadu Forest Department.

[Dr. S.A. Kirubakaran](#), Molecular characterization through RAPD –PCR techniques of wide range of entomopathogenic fungi against the rice leaf folder complex with rice defense enzyme assay: Implication for integrated management of leaf folder population through novel biotechnology technique. SRF (DBT-RGYI). Currently working as **Assistant Professor** at Srimath Andavan College of Arts and Sciences, Trichy.

[Dr. R. Dr. Chandrasekaran](#), Biological activity of chitinase identified from *Bacillus subtilis* against *Spodoptera litura* Fab. Through biochemical and molecular aspects. Senior Research Fellow (CSIR). Currently working as National Post-Doctoral Scientist (N-PDF-DST).

Dr. K. Revathi, Identification and characterization of secondary metabolites from *Bacillus thuringiensis* against Polyphagus insect, *Helicoverpa armigera* and their acute toxicity on earthworm. Currently working as **Assistant Professor** Sri Sakthi Kilash College for women, Salem.

Dr. J. Lija Escaline, Molecular characterization of entomopathogenic fungi against different mosquito species through novel biotechnology techniques. Currently working as National Post-Doctoral Scientist (N-PDF-DST).

Dr. A. Thanigaivel, DST-National Post-Doctoral Scientist Bioactivity and molecular characterization of field isolates of *Bacillus* spp., currently working as National Post-Doctoral Scientist (N-PDF-DST).

Dr. A.Ponsankar, DST-National Post-Doctoral Scientist. Genetic characterization of the entomopathogenic fungi from rice cultivated region in Tirunelveli for effective management of *Spodoptera litura*. Currently working as National Post-Doctoral Scientist (N-PDF-DST).

Dr. S.Selin Rani, DST-Inspire fellow. Effects of plant extracts and its active compound against the polyphagus insects.

Dr. V.Pradeepa, Research Fellow. Isolation and Characterization of antimalarial compounds from *Aristolochia indica* Linn and *Plumbago zeylanica* Linn with prospective activity against the malarial vector *Anopheles stephensi* Liston (Diptera: Culicidae).

Dr. P. Vasantha-Srinivasan, Research Fellow. Effect of medicinal plant and entomopathogenic fungi on the immune response of Lepidoptera larvae (*Spodoptera litura*). Currently working as Assistant Professor in Biotechnology St Peters University.

Dr. E. Edwin, Research Fellow. Effects of plant extracts and its active compound against stored grain pest. Currently working as Product Development Manager, Abu Dhabi, UAE. University.

M. Phil.

1. **Mrs. P.S. Sangeetha**, Identification of certain medicinally important plant in relation to sericulture
2. **Mrs. S. Sangeeth**, Data mining of Protease-Introduction to Bioinformatics.

Visiting Scholar-Scientist

Mr. Annamalai Mahendiran – Scientist, Crop Protection Division, NRRI (ICAR), Cuttack, Odisha.[Under Professional Attachment Training (2016-17)

Invited Speaker

1. 2019, Feb. 25th and 26th Key note speaker in 'Workshop on Molecular biological Technique' PG and Research Department of Zoology, Sara Tucker College, Tirunelveli
2. 2018, 'Impact of global warming on flora and fauna', Sri Narayana College, Punalur.
3. 2018, 'Tackling the plastic pollution - the nanotechnical way', P.G. Department of Zoology, Sri Parasakthi College for women, Courtallam, Tirunelveli.
4. 2017, 'Application of biotechnology in pest management'- Department of Zoology, Sri Paramakalyani college, Alwarkurichi.
5. 2017, 'Current trends in mosquito control through biopesticides - An ecofriendly approach', ICMR sponsored National conference, Department of Biological Sciences, KSR college of Arts and Science, Tiruchengode.
6. 2017, Biopesticides, Development and formulation by biotechnological approach', Department of Zoology, St. Xavier's College.
7. 2017, Valedictory address, Zoology association, Department of Zoology, St. Xavier's College
8. 2015, Plenary lecture, 'Biodiversity products & Industrial Applications', Centre for biodiversity and forest studies, Periyar University, Salem.
9. 2014, '**Role of biopesticides in integrated agriculture system**', Department of Zoology, Sri Paramakalyani College, Alwarkurichi.
10. 2014, Keynote address, '**Biopesticide and sustainable agriculture**' in National Symposium on Biotechnology for Sustainable livelihood, at Annai Velankanni College, Kanyakumari.
11. 2013, Chief guest address **Ecofriendly Plant Protection and production for Food Security, Food Safety and the role of Biopesticides in Global Economy Fourth Biopesticide International Conference**, Crop Protection Research Centre, St. Xavier's College.
12. 2013, Plenary lecture on '**Effect of elevated CO₂ on rice plant and feeding performance of specialized rice herbivore and chairperson in Third International Congress On Global Warming On Biodiversity Of Insects: Management And Conservation Strategies (GW-BIMC, '13)**' Bharathiar University, Coimbatore.
13. 2012, 34th **Meeting of the Rice Technical Working Group**, Hot Springs Convention Center Hot Springs, Arkansas, USA.
14. **2010, Tamil Nadu State Science forum 10th Conference**, Manonmaniam Sundaranar University, Tirunelveli, TN, India.
15. 2009, '**Academic interaction programme**', invited paper and proposal conducted by BRNS (Department of Atomic Energy), Courtallam, Tirunelveli.
16. 2008, '**Biofertilizer development and usage in this Millennium**' in Sri Kumara Gurupara Swamigal Arts College, Srivaikuntam, Thoothukudi, Tamil-Nadu.
17. 2008, State level seminar on '**A modern Approach in Agricultural Economics and Ecosystem**' under the topic 'Recent development in Agricultural economics with respect to environment' at Sri Parasakthi College for Women, Courtallam, TN.
18. 2006, Invited paper presentation **Korean Entomological Science meeting** at Muju, South Korea.
19. 2006, Invited paper presentation in **Korean Entomological Science meeting** held at Seoul, South Korea.