

Dr. S. Murugesan

Dr. S. Murugesan is a senior scientist in IFGTB with core specialization of Phytopesticide, Chemical ecology, Phytoceuticals and Instrumentation methods and chemical analysis.



Current activities and research interests

Natural products – Phytoceuticals and phytopesticides.

Secondary metabolites from *Aegle marmelos* for biopesticides
Pharmacological evaluation of *Aegle marmelos* for phytomedicine
Tree borne oil seeds for biopesticide formulation
Essential oil of *Lantana camara* for biopesticide.
Biotransformation of secondary metabolites from Frankia into casuarinas for nodulation.

Formal education

B.Sc (Zoology), Madurai Kamaraj University (1981)
M.Sc (Zoology), Madurai Kamaraj University (1984)
M.Phil (Zoology) Madras University (1986)
Ph.D, (Entomology) Madras University (1990)

Experience

Dr. S. Murugesan has been working on insect-plant interaction especially role of plant secondary metabolites of host plants and their defence properties against insect pests since 1990. He was involved in the biological control of Forest Insect pests of arid and semi arid tree species, and Insecticidal performance of natural products against seed insect pests of forestry tree species.

He has experience in the areas of plant defence chemicals especially on methods for extraction, purification and characterization of numerous defensive chemicals belonging to various categories (terpenoids, alkaloids, glycosides, phenols, tannins, etc.) which could cause behavioural and physiological impacts on pests.

He was in Bioactive Natural Product Laboratory, Michigan State University, USA as Post Doctoral Fellow during 1998 to 1999.

Three Ph.D were awarded from FRI University with his supervision and two students are pursuing their Ph.D. He supervised more than twenty students for M.Sc. dissertation work and evaluated number of Ph.D, M.Phil and M.Sc., thesis.

Organisational details

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Publications

1. **Murugesan, S.** (1988). Some Biochemical Correlates in Relation to the Quantitative Food Utilization and Reproduction in Two Species of Meloids (Insecta: Coleoptera: Meloidae), *Proc. Indian natn. Sci. Acad.*, **B54 (2 & 3)** : 155-160.
2. Ananthakrishnan, T.N., Senrayan, R., Annadurai, R.S. and S. **Murugesan** (1990). Antibiotic effects of resorcinol, gallic acid and phloroglucinol on *Heliothis armigera* Hubner (Insecta : Noctuidae). *Proc. Indian Acad. Sci.*, 99 (1): 39-52.
3. Annadurai, R.S., **Murugesan, S.** and R. Senrayan (1990). Age- correlated tissue preferences of *Heliothis armigera* (Hubner) and *Spodoptera litura* (F) with special reference to phenolic substances. *Proc. Indian Acad. Sci.*, 99 (4): 317-325.
4. Senrayan, R., **Murugesan, S.**, Annadurai, R.S. and T.N. Ananthakrishnan (1992). Host nutrition and fitness of *Trichogramma chilonis* Ishii (Trichogrammatidae: Hymenoptera).pp. 69-82. **In : Emerging Trends in Biological Control of Phytophagous Insects.** Etd. T.N. Ananthakrishnan. Published by Oxford & IBH Publishing Co. Pvt. Ltd. 1992.
5. Annadurai, R.S., **Murugesan, S.**, Senrayan, R., Gurusubramanian, G. and T.N. Ananthakrishnan (1992). Trophic interactions in *Heliothis armigera* Hubner and its natural enemy systems: A chemical ecological approach (Notuidae: Lepidoptera). pp. 83- 101. **In : Emerging Trends in Biological Control of Phytophagous Insects.** Etd. T.N. Ananthakrishnan. Published by Oxford & IBH Publishing Co. Pvt. Ltd. 1992.
6. **Murugesan, S.**, Gurusubramanian, G. and A. Babu (1994). Effect of cytozyme on various growth rates of sunflower in relation to resistance to insect pests. *Annals of Arid Zone*, **33 (1)**: 69-72.
7. Ahmed, S.I., Sundararaj, R. and **S. Murugesan** (1994). Recent trends and perspectives of neem- as a source of biopesticide. *Neem Newsletter of International Neem Network*, **1 (2)**: 17-20.
8. **Murugesan, S.**, Sundararaj, R., Ahmed, S.I. and S. Kumar (1995). New record of *Myllocerus laetivirens* Marshall (Curculionidae: Coleoptera) as a pest of neem (*Azadirachta indica*) and rohida (*Tecomella undulata*). *Neem Newsletter of International Neem Network*, **(2)**: 33.
9. **Murugesan, S.** and J. Prasanth Jacob (1995). Antifeedant and growth disruption activity of azadirachtin on *Heliothis armigera* (Hubner), *Spodoptera litura*(F)and *Atractomorpha crenulata* (F). *Neem Newsletter of International Neem Network*, **2 (2)**: 32-35.
10. **Murugesan, S.**, Mohan, V. and R. Sundararaj (1995). Insect- VAM interactions: Colonization of aphid, *Aphis nerii* Boy (Homoptera: Aphididae) distinction between host and non-host trees. *Phytophaga*, **7**: 121-126.
11. **Murugesan, S.** and R. Sundararaj (1995). The future prospects and task of biological control of forest insect pests. *AFRI Newsletter*, 3 (1): 19.
12. Sundararaj , R. and **Murugesan, S.** (1995). Phytochemicals in integrated pest management. *AFRI Newsletter*, 3 (1): 17-18.
13. Mohan, V., **Murugesan, S.** and R. Sundararaj (1995). Mycorrhizae in control of plant diseases and soil-borne nematodes. *AFRI Newsletter*, 3 (1): 14-15.
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15. Sundararaj , R., **Murugesan, S.** and Sangeetha Sharma (1995). Evaluation of neem (*Azadirachta indica* A. Juss) seed kernel extracts from different solvents on the babul defoliator *Taragama siva* Lefbvre (Lasiocampidae: Lepidoptera) and the rohida defoliator *Patialus tecomella* Pajni (Curculionidae: Coleoptera). *Annals of Forestry*, **3(2)**: 193-195.
16. Sundararaj , R., **Murugesan, S.** and S.I. Ahmed (1995). Different impact of NSKP extracts on nutrition and reproduction of *Taragama siva* Lefbvre (Lasiocampidae: Lepidoptera). *Entomon*, **20 (3)**: 257-261.
17. Ahmed, S.I. and S. Murugesan, (1995). *Achaea janata* Linn (Noctuidae: Lepidoptera), A new pest record on neem – its management through Nuclear Polyhedrosis Virus. *The Indian Forester*, **121 (1)**: 63.
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19. Sundararaj, R., **Murugesan, S.** and R.N. Mishra (1996). Field Evaluation of Neem Seed Oil Against the Babul Whitefly *Acaudaleyrodes rachipora* (Singh) (Aleyrodidae: Homoptera) on *Acacia senegal* Seedlings. *Annals of Arid Zone*, **35 (4)**: 369-372.

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21. **Murugesan, S.** Sundararaj, R. and S. Kumar (1996). Role of flower colour of arid and semi- arid tree species and its effect on insect colonization. *Indian Journal of Environment and Toxicology*. **6 (2)**: 89-91.
22. **Murugesan, S.** and S. Kumar (1996). New record and damage of flower thrips in the introduced tree species of arid and semi- arid regions. *The Indian Forester*, 122 (9): 854- 855.
23. **Murugesan, S.,** Kumar .S. and R. Sundararaj (1996). Sensillar dynamics in thrips – flower interactions of arid and semi- arid tree species. *Annals of Arid Zone*, **35 (4)**: 361-368.
24. Sundararaj , R. and **S. Murugesan.** (1996). Occurrence of *Acaudaleyrodes rachipora* (singh) (Aleyrodidae: Homoptera) as a pest of some importance forest trees in Jodhpur (India). *Indian Journal of Forestry*, **19 (3)**: 247-248.
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26. Sundararaj, R., **Murugesan, S.,** and R.N. Mishra (1996). An ideal tree for arid region. *The Hindu*, 7th November.
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35. Sundararaj, R., **Murugesan, S** and R.N. Mishra (1998). Biopesticidal potential of neem (*Azadirachta indica* A. Juss.) against forest insect pests of arid and semi-arid region. Published in: *NEEM A wonder tree*. B.N. Gupta and K.K. Sharma (eds.), Indian Council of Forestry Research and Education, Dehra Dun. pp. 154-159.
36. **Murugesan, S.,** Prasanth Jacob, J. and A. Balu (1999). Comparative toxicity of some insectifides against *caryedon serratus*, A seed pest of forestry tree species. Published in : *Recent trends in insect pest control to enhance forest productivity*. P.K. Shukla and K.C. Joshi (eds.), Tropical Forest Research Institute, Jabalpur. pp 17-20.
37. Kumar, S., **Murugesan, S.** and R. Sundararaj (1999). Evaluation of Forestry Thrips and their Damaging Profiles. Published in: *Management of Arid Ecosystem*. A.S. Paroda et al. (eds.), Arid Zone Research Association of India and Scientific Publishers, Jodhpur, pp. 401-404.
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39. **Murugesan,S.,** Balu, A., Prasanth Jacob, J., Pankajam, S. and B. Sunitha (1999). Insecticidal action of Neem and Vitex against forestry seed pest. *Sylva Plus*, **VII (2)**: 1-2.

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42. **Murugesan, S.**, Ramsewak, R.S., Mattson, W.J., Nair, M.G., Mohan, V. and C. Narayanan (2002). Antifeedant and antifungal compounds from *Dirca palustris*. Published in the proceedings on "Vistas of Entomological Research for the New Millennium", eds. K.P. Sanjayan, V. Mahalingam, and M.C. Muralirangan, pp-65-71.
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45. **Murugesan, S.** (2001). Biochemical estimation of seeds. Published in :*Recent Techniques and Participatory Approaches in Quality Seed Production*. K. Vanangamudi et al. (eds.), Tamil Nadu Agricultural University, Coimbatore. pp. 509-512.
46. **Murugesan, S.**, Ramarethinam, S., Marimuthu, S., Prasanth Jacob, J. and A. Balu (2000). Insecticidal Action of Neem and Vitex in Comparison with Synthetic Pesticides on *Caryedon serratus*, A Seed Pest of *Acacia nilotica* and *Tamarindus indica*. *Pestology* Vol. XXIV No. **12** : 3-8.
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48. **Murugesan, S.** and A. Balu (2000). New Record of Blister Beetle on Neem- Chameli : Its Interaction with Flavonoid Pigments. *The Indian Forester*, **126**: 1243-1245.
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50. **Murugesan, S.**, Sunitha, B. and Balu, A. (2002). Pesticidal potency of *Acacia nilotica* leaf extracts. *My Forest*, **38 (3)**: 277-281.
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53. **Murugesan, S.**, Mohan, V., Sunitha, B. and A.Balu (2002). Antifungal activity of *Acacia nilotica* (Babul) plant extracts against some fungal isolates. *My Forest*, **38(4)**:351-355.
54. **Murugesan, S.**, Ramsewak, R.S., Mattson, W.J., Nair, M.G., Mohan, V. and Narayanan, C. (2003). Antifeedant and antifungal compounds from *Dirca palustris*. *The Indian Forester*, **129 (3)**: 364-370.
55. Zhang, Y., **Murugesan, S.** and M.G. Nair (2003). Triterpenoids and lignans from *Picrorhiza kurroa* Seeds. Published in the proceedings of 44th Annual meeting of the American Society of Pharmacognosy: *The Changing face of Natural Products Chemistry*: Chapel Hill, North Carolina, July 12-16, 2003.
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Books

1. **Murugesan, S** and N. Senthilkumar. 2009. Instrumentation methods and chemical analysis. ICFRE/IFGTB/TM-1 – English. pp. 104
2. N.Senthilkumar, **S. Murugesan** and N. Krishnakumar. 2009. An illustrated guide on insect pests of important tree species in South India. IFGTB Publications, Coimbatore. pp 132.
3. **Murugesan, S** and N. Senthilkumar. 2010. Metabolite profiling: Current Techniques IFGTB Publications, Coimbatore. pp 180.

Chapter in Editorial book

1. **Murugesan, S.** and N. Senthilkumar. 2010. Ecological Interactions and impact of biodiversity of Insects in Social Forests. In: Prof. T.N. Ananthkrishnan (ed.) Insect Biodiversity: Functional Dynamics and Ecological Perspectives. Scientific Publishers (India), Jodhpur.Pp.107-125