

CURRICULUM VITAE



Name : **Dr. R. THANGARAJ**
Father's Name : Mr.C. Ramasundaram
Date of Birth : 05-12-1975
Sex : Male
Marital Status : Married
Nationality : Indian
Community : Most Backward Class **(MBC)**
Address for Communication : Old No.4/296A, Meyyanur By-Pass Road,
 Alagapuram (PO), (Near New Bus Stand),
 Salem- 636 004.
 Mobile : 9444137648

E-mail : thangaraj75@gmail.com

Languages Known : English and Tamil – Read, Write, Speak
 Hindi – Read, Write
Present Status : **Assistant Professor, Department of Zoology,**
Periyar University, Salem – 636 011.

ACADEMIC QUALIFICATION:

DEGREE	INSTITUTION	UNIVERSITY	YEAR OF PASSING	PERCENTAGE OF MARKS	CLASS OBTAINED
Ph.D. (Zoology)	The New College	University of Madras	2006	Highly Commended	
M.Sc. (Zoology)	The New College	University of Madras	1999	63.57%	First Class
B.Sc. (Zoology)	Presidency College	University of Madras	1996	62.61%	First Class

PROFESSIONAL QUALIFICATION:

ELIGIBILITY TEST FOR LECTURESHIP	SUBJECT	MONTH & YEAR OF QUALIFYING	ACCREDITATION
State level Educational Testing for Lectureship (SLET)	ZOOLOGY	November 1999	University Grants Commission (UGC)

TEACHING EXPERIENCE:

DESIGNATION	INSTITUTION	DEPARTMENT	PERIOD		SERVICE IN YEARS/MONTHS
			FROM	TO	
Honorary Lecturer	The New College, Royapettah, Chennai – 600 014.	Biotechnology- (Environmental Sciences)	2004	2006	2 YEARS
Guest Lecturer	S.I.V.E.T. College, Gowrivakkam, Chennai – 600 073.	Zoology	14-07- 2008	31-01- 2009	6 MONTHS
Guest Lecturer	Periyar University College of Arts & Science, Harur, Dharmapuri – 636 903.	Zoology	02-09- 2011	17-05- 2012	9 MONTHS
			18-06- 2012	11-09- 2012	3 MONTHS
Guest Lecturer	Periyar University, Salem – 636 011.	Zoology	12-09- 2012	22-05- 2013	8 MONTHS
			01-07- 2013	31-07- 2013	1 MONTH

Title of Ph.D. Thesis : Studies on the influence of ‘fauna-based’ biofertilizers (Vermiwash, Effective Microorganisms, Panchagavya) on *Allium cepa* L, *Trigonella foenum-graecum* L and *Anacardium occidentale* L.

ABSTRACT OF Ph.D. THESIS:

I had shown that organic liquid fertilizers (Biofertilizers) like Vermiwash (Washings of Earthworms), Effective Microorganisms (A combination of beneficial microorganisms) and Panchagavya (Obtained from cow’s product) can synergistically influence plant growth by increasing the rate of cell division, rate of germination and vascular differentiation in plants. *Allium cepa* root meristem cells exposed to liquid fertilizers showed an increased rate of mitotic cell division due to higher proportion of cells involved in division that also resulted in faster growth of roots. Number of cells involved in division increased with increased duration of treatment with liquid fertilizers. The rate of cell division depends on the expression of a class of proteins called D-type cyclins and the expression of D-type cyclins depends on the presence of macronutrients like N, P, K and micronutrient like Fe and also plant growth promoting hormones like cytokinins, gibberellins and auxins. The presence of these macro and micronutrients and plant growth promoting hormones in liquid fertilizers could have resulted in an increased rate of cell division in *Allium cepa* root meristem cells. Chromosomal and mitotic aberration studies using *Allium cepa* assay revealed that these organic liquid fertilizers unlike synthetic fertilizers or plant growth regulators are not toxic/genotoxic to plants. Anatomical studies using different regions of *Trigonella foenum-graecum* like root, hypocotyl, petiole and leaf revealed that these liquid fertilizers also influence Vascular Differentiation in plants. Foliar application of liquid fertilizers resulted in numerous and larger xylem vessels (vascular tissue) which is vital for proper absorption and transportation of water, nutrients and signal molecules in plants. Enhanced vascular differentiation could possibly be due to the presence of plant growth promoting hormones in organic liquid fertilizers.

Ancillary Subjects in B.Sc. Zoology : Botany & Chemistry
 Optional Subject in B.Sc. & M.Sc. Zoology : Aquaculture & Fishery Biology
 Dissertation/Project Work in M.Sc. Zoology : Role of *Cybister tripunctatus* Sharp
 (Coleoptera: Dytiscidae) in the
 control of *Anopheles* larvae.

PAPER PUBLICATION IN INTERNATIONAL JOURNALS:

- 1) **Thangaraj, R.**, Ayyappan, S.R., Manikandan, P. and Baskaran, J. 2007. Antioxidant property of *Emblica officinalis* during experimentally induced restrain stress in rats. *Journal of Health Science*,53(4): 496-499.[ISSN No: 1347-5207]
- 2) Srikumar, R., Jeya Parthasarathy, N., Shankar, E.M., Manikandan, S., Vijayakumar, K., **Thangaraj, R.**, Vijayananth, K., Sheeladevi, R. and Usha Anand Rao, 2007. Evaluation of the growth inhibitory activities of Triphala against common bacterial isolates from HIV infected patients.*Phytotherapy Research*, 21(5): 476-480. [ISSN No: 1099-1573]
- 3) Dhanalakshmi, S., Sheeladevi, R., Srikumar, R., Manikandan, S. and **Thangaraj, R.** 2007. Protective effect of Triphala on cold stress-induced behavioural and biochemical abnormalities in rats. *Yakugaku Zasshi (The Pharmaceutical Society of Japan)*, 127(11): 1863-1867. [ISSN No: 1347-5231]
- 4) Murugaian, P., Srikumar, R. and **Thangaraj, R.** 2009. Phytochemical estimation and antibacterial activity of *Heliotropium indicum* (L) against the common bacteria isolated from human beings.*Biomedicine*,29(1): 48-51. [ISSN No: 0970-2067]
- 5) Manikandan, S., Sheela Devi, R., Srikumar, R., Ayyappan, R., **Thangaraj, R.**, Jegadeesh, R. and Hariprasanth, L. 2010. In-vitro Antifungal Activity of Aqueous and Ethanolic Extracts of *Acorus calamus* Linn. *International Journal of Pharmacology and Technology*, 2(1): 57-59. [ISSN No: 0975-766X]
- 6) Ayyappan, S.R., Srikumar, R. and **Thangaraj, R.** 2010. Phytochemical and Antibacterial Activity of *Bacopa monniera* Against the Common Bacterial Isolates from Human. *International Journal of Microbiological Research*,1(2): 67-71. [ISSN No: 2079-2093]
- 7) Srikumar, R., Sheela Devi, R., Ayyappan, S.R., **Thangaraj, R.** and Jegadeesh, R. 2010. Anti-Fungal Activity of Aqueous and Ethanolic Extract of Triphala and its individual Fruit Components. *International Journal of Pharmaceutical Research and Development*,2(8): Article No.10[ISSN No: 0974-9446]
- 8) Vijayakumar, R., Latha, S., Sasikala, C., Srikumar, R., **Thangaraj, R.**, Ayyappan, R., Jegadeesh, R. and Hariprasanth, L. 2010. Total Phenolic Content and Antibacterial Activity of various extracts of *Plumbago zeylanica*. *Journal of Pharmacy Research*, 3(10): 2442-2443. [ISSN No: 0974-6943]
- 9) Manikandan, S., Sheela Devi, R., Srikumar, R., **Thangaraj, R.**, Ayyappan, R., Jegadeesh, R. and Hariprasanth, L. 2010. In-vitro Antibacterial Activity of Aqueous and Ethanolic Extracats of *Acorus calamus*. *International Journal of Applied Biology and Pharmaceutical Technology*, 1(3): 1072-1075. [ISSN No: 0976-4550]
- 10) Jegadeesh, R., Raaman, N., Periyasamy, K., Hariprasanth, L., **Thangaraj, R.**, Srikumar, R. and Ayyappan, S.R. 2010. Proximate analysis and Antibacterial Activity of an edible mushroom *Volvariella bombycina*.*International Journal of Microbiological Research*, 1(3): 110-113. [ISSN No: 2079-2093]
- 11) Ayyappan, S.R., Srikumar, R., **Thangaraj, R.**, Jegadeesh, R. and Hariprasanth, L. 2011. Antifungal activity of *Bacopa monniera* against Dermatophytic Fungus. *Biomedicine*, 31(1): 74-77. [ISSN No: 0970-2067]

PAPER PUBLICATION IN NATIONAL JOURNALS:

- 1) **Thangaraj, R.**, Ismail, S.A. and Srikumar, R. 2009. Influence of Organic Liquid Fertilizers (Vermiwash, Effective Microorganisms & Panchagavya) on the Germination of Seeds of *Trigonella foenum-graecum* L. ***Life Sciences and Bioinformatics***, 1: 108-113. [ISSN No: 0974-9179]
- 2) **Thangaraj, R.**, Ismail, S.A., Srikumar, R. and Manikandakumar, K. 2010. The Potential of Organic Liquid Fertilizers as Foliar Spray and their Effect on Xylem Vessels in Anatomical Structures of *Trigonella foenum-graecum* L. ***Life Sciences and Bioinformatics***, 2: 196-203. [ISSN No: 0974-9179]
- 3) **Thangaraj, R.**, Ismail, S.A. and Srikumar, R. 2010. The Effect of Vermiwash, Effective Microorganisms and Panchagavya as foliar application on the Growth, Flowering and Pod Production of *Trigonella foenum-graecum* L. ***Life Sciences and Bioinformatics***, 2: 204-213. [ISSN No: 0974-9179]
- 4) Murugaian, P., Srikumar, R. and **Thangaraj, R.** 2009. Phytochemical estimation and antibacterial activity of *Heliotropium indicum* (L) against the common bacteria isolated from human beings. ***Biomedicine***, 29(1): 48-51. [ISSN No: 0970-2067]
- 5) Srikumar, R., Murugaian, P. and **Thangaraj, R.** 2009. Antibacterial potential of aqueous and ethanolic extracts of *Piper betel*. ***Life Sciences and Bioinformatics***, 1: 1-4. [ISSN No: 0974-9179]
- 6) Murugaian, P., Srikumar, R. and **Thangaraj, R.** 2009. Immunomodulatory activity of crude ethanolic extract of *Heliotropium indicum* (L). ***Life Sciences and Bioinformatics***, 1: 9-12. [ISSN No: 0974-9179]
- 7) Murugaian, P., Srikumar, R. and **Thangaraj, R.** 2009. Lipid profile on cigarette smokers. ***Life Sciences and Bioinformatics***, 1: 13-14. [ISSN No: 0974-9179]
- 8) Srikumar, R., Sheeladevi, R., Manikandan, S., Murugaian, P., and **Thangaraj, R.** 2009. Noise-stress induced oxidative stress and neuro-immunological changes in albino rats. ***Life Sciences and Bioinformatics***, 1: 18-23. [ISSN No: 0974-9179]
- 9) Murugaian, P., Srikumar, R. and **Thangaraj, R.** 2009. Isolation and estimation of phytochemical content in aqueous and ethanolic extracts of *Piper betel*. ***Life Sciences and Bioinformatics***, 1: 29-31. [ISSN No: 0974-9179]
- 10) Srikumar, R., Murugaian, P. and **Thangaraj, R.** 2009. Antifungal activity of *Heliotropium indicum* (L) against *Aspergillus flavus*. ***Life Sciences and Bioinformatics***, 1: 35-36. [ISSN No: 0974-9179]
- 11) Srikumar, R., Murugaian, P. and **Thangaraj, R.** 2009. Survey of arbuscular mycorrhizal fungi-associated with sugarcane cultivated in South India. ***Agricultural Science Digest***, 29(2): 97-100. [ISSN No: 0253-150X]

LABORATORY TECHNIQUES KNOWN:

Soil Analysis: pH, Electro-conductivity, Organic Carbon, Total Kjeldahl Nitrogen, Available Phosphorus, Potassium, Sodium, Calcium, Total Bacteria and Total Fungi.

Cytological Work: To evaluate the rate of cell division & levels and spectra of chromosomal and mitotic aberrations using *Allium cepa* L.

OTHER RELEVANT INFORMATION:

Special Training Undergone: Organic Solid Waste Management by Vermicomposting (using epigeic and anecic varieties of earthworms) and Biodung Composting (using cowdung slurry and green biomass).

