# **CURRICULUM VITAE - IN BRIEF**

### Dr. LEELAJA B.C.

Ph.D (CSIR-CFTRI-Sub:Bio-chem)., M.Sc (App.Zool & Biochem)., M.Sc.(Biotech).,

<u>Res</u>: #191, Hamsa Kuteera,Kandayanagar Srirampura 2<sup>nd</sup> stage, MYSORE-5770023, Karnataka, Inida

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1. Academic Qualifications : **Ph.D**-Biochem (CFTRI-CSIR)., **M.Sc** (App.Zoology)., **M.Sc**., (Biochem), **M.Sc**.(Biotech.).,

SL.	Degree with	Institution/University	Awarded/
No.	Specialization		Class
1.	<b>Ph.D</b> – Biochemistry	CFTRI, (Mysore-20),	Awarded
	(Specl:Toxicology & Pesticide Biochemistry)	India	(2014)
		-CSIR Organization-	
		(under University of Mysore)	
2.	M.Sc - Applied Zoology	Kuvempu University,	SECOND RANK
	(Core Theme: Animal Physiology &	Karnataka, India	
	Genetics Mol. Biology & Env. Health)		
3.	M.Sc –Biochemistry	VM University, Salem,	High First Class
	(Core Theme: Physiology & Nutritional	Tamilnadu	
	Biochem; Clinical/Plant Biochem,		
	Enzyme Tech & Immunology)		
4.	M.Sc –Biotechnology	Kuvempu University,	First Class
	(Core Themes: Microbiology &	Karnataka, India	
	Biomolecules; Biostatistics & Ind.		
	Biotech.)		
5.	B.Sc.Ed., -Chemistry Major with	Regional Institute of	First Class
	Education	Education, University of	
		Mysore, Mysore	

- 2. Professional Experience:Teaching Experience: 10 Years,Research Experience: 05 YearsDb D Bergerich Experience: 05 Years
  - PhD Research Experience : 05 Years

3. Current position:	Guest Faculty DOS in Molecular Biology University of Mysore, Mysore.
4. Research Experience	: A Decade of Experience on Biological Chemistry, Applied Biology, Pesticide Toxicology, Biotechnology, Immunology, Clinical Biochemistry, Biolmolecules, Environmental Toxicology, Animal Experiments etc.
5. Research Specialization	: Food Protectants & Pesticide
	Toxicology, Pesticide Biochemistry,
	Insect Physiology, Applied Food
	Biotech., Fumigation Technology,
	Environmental Management and
	Sustainable Technologies.
6. Subjects Taught	: Human Physiology,
	Nutrition
	Microbiology
7. Designations Acquired	: Senior Research – Scholar (CSIR-SRF),
	Project Assistant (CFTRI, Mysore,
	Consultant for Food -grains Managemnt (HIRA Research Organization).
7. Awards	:02
8. Recognitions:	: CSIR- Research Fellowship,
11. Research Publications	:24
12. Research Presentations	:12
14. Technology Developed	: Developed Staining Technique for
	detection of Insect Eggs in the flour samples.
15.Techniques Expertency	: Culturing techniques for Model organisms,
	C.elagans, Drosophila, Insects etc. Instrumentation,
	Handling of Animals (Rats) for Clinical studies

### **EXPERTENCY & KEY SKILLS:**

Development of Protocols for various experiments, preparing laboratory manuals, effective demonstration of practical classess, Biotechnological applications, Molecular Biology techniques, Immunological techniques, Biochemical tests Microbiological Techniques, Semio-chemicals Colorimeter Centrifuge, Binocular Compound Microscope Electrophoretic Unit.

Expertency in research study and evaluation & moniotroing of toxicity of Phosphine and other Xenobiotics using Insects (stored product) and C.elegans Models. Monitoring and detection of Fumigants, GC Electro Antenna gram GC, Stored Entomological Techniques, Rearing Insects culture + Plant Biotech Techniques Animal Biotech Techniques

Dr. LEELAJA B.C

# CURRICULUM VITAE - IN DETAIL

### Dr. LEELAJA B.C.

Asst. Professor (DOS in Biochem, UOM, Mysore) **Ph.D** (CSIR-CFTRI-**Sub :Bio-chem).**, M.Sc (App.Zool)., M.Sc.Biochem)., M.Sc.(Biotech).,

**Res**: #191, Hamsa Kuteera,Kandayanagar Srirampura 2<sup>nd</sup> stage, MYSORE-5770023, Karnataka, Inida

Mobile: +91 9482739946 Email: leelajamurthy2005@gmail.com

### **OBJECTIVE:**

To obtain a position that will enable me to use my strong organizational skills, educational background, and ability to work well with people. Besides, I can utilize ICT for teaching, innovative writing, research and leadership skills to maximize my management skills, quality assurance, program development and training experience.

### ACADEMIC QUALIFICATIONS

2014	Doctor of Philosophy in Bio-Chemistry -(AWARDED)			
	<b>CENTRAL FOOD TECHNOLOGICAL RESEARCH INSTITUTE</b> - CSIR Organization,			
	Mysore- 570 020, Karnataka, India. <u>Specialization</u> – <i>Toxicology and Pesticide Biochemistry</i> .			
Thesis entitled: Investigations on selected enzymes systems in Caenorhabditis elegans in response to representative insecticides of different classes.				
2003	Master of Science (Applied Zoology): II RANK			
	Kuvempu University, Shankar Ghatta, Shivamogga, Karnataka, India.			
2012	<u>Master of Science</u> (Biochemistry): <u>HIGH FIRST CLASS</u>			
	V M University, (Salem) Tamilnadu, India.			
2008	<u>Master of Science</u> (Biotechnology): <b><u>FIRST CLASS</u></b>			
	Kuvempu University, Shankar Ghatta, Shivamogga, Karnataka, India.			
2000	Bachelor of Science in Education (B.Sc.Ed) (CBZ): FIRST CLASS			
	Regional Institute of Education, Mysore University, Mysore, Karnataka, India.			
2019	SLET-University of Mysore-			

### **PROFESSIONAL EXPERIENCE**

### **TOTAL PROFESSIONAL EXPERIENCE**: <u>21 Years</u> (Including PhD Research Period)

**Guest Faculty in Biochemistry**, DOS in Biochemistry, University of Mysore, Mysore.

- 2014 onwards......

Guesty Faculty in Molecular Biology, DOS in Molecular Biology, University of Mysore, Mysore.

- 2018 onwards..... <u>-06 Years</u>

<u>-04 Years</u>

- > Technical Research Officer, HIRA (Research Unit), Tumkur (2012-14) -02 Years
- Research Scholar, Department of Food Protectants and Infestation Control, CFTRI, Mysore' - (2008 to 2013). - <u>05 Years</u>

Project Assistant, CFTRI, Mysore- (2004 to 2008)
- 04 Years

### SUMMARY OF RESEARCH FINDINGS

Investigations were made to appraise the toxicity of Insecticides namely; Monocrotophos (MCP-OPI), Deltamethrin (DEL-SP) and Phosphine (PH<sub>3</sub>-Fumigant) on Enzyme systems by employing *C.elegans* as a Model system. The study revealed these Insecticides were found to be highly toxic to the *C.elegans*. All the three insecticides elicited adverse biochemical and physiological responses in the worms used for the study at sub-lethal concentrations.

The three insecticides affected the detoxification enzymes in *C.elegans* distinctly. While GST (Glutathione S-transferase) activity was significantly up-regulated in worms exposed to PH<sub>3</sub> and CaE (Carboxylesterase) was up-regulated in worms exposed to PH<sub>3</sub>. Interestingly, MCP inhibited all the three detoxification enzymes. In conclusion, the *C.elegans* appears to be an ideal model organism to evaluate the insecticide toxicity and resistance mechanisms in the insects. Besides, *C.elegans* seems to be a excellent model to assess the mechanisitic strategies to ameliorate insecticide toxicity in mammals.

### **EXPERTENCY & KEY SKILLS:**

<u>Fuimigation Techniques</u>- Expertency in evaluation & moniotroing of toxicity of Phosphine and other Xenobiotics using Insects (stored product) and C.elegans Models. Monitoring and detection of Fumigants, Molecular Biology techniques, Immunological techniques, Biochemical tests Microbiological Techniques, Semio-chemicals Colorimeter Centrifuge, Binocular Compound Microscope Electrophoretic Unit GC Electro Antenna gram GC, Stored Entomological Techniques, Rearing Insects culture + Plant Biotech Techniques Animal Biotech Techniques.

Development of Protocols for various experiments, preparing laboratory manuals, effective demonstration of practical classess.

### **IMLEMENTATION OF RESEARCH PROJECTS**

# <u>Project Title:</u> "Alternate Gas-proof covers and chemical for effective fumigation of grain stacks" (Food Corporation of India sponsored). -2004-2006

- ⇒ To screen different gas proof covers for effective fumigation of grain stacks.
- ⇒ To develop alternate chemicals to methyl bromide and phosphine for fumigation

# <u>Project Title:</u> "Substitutes for Methyl bromide for pre-shipment treatment of Food commodities".

(Dept. of Food & Agriculture, Ministry of Agriculture, Govt. of India sponsored)

### Worked on:

- Insect Behavior
- Insect chemical Ecology
- ➢ Pheromones
- Fumigants and monitoring

### As Senior Research Scholar

- ⇒ Mode of action on *C. elegans* and non-targetted sps.
- ⇒ Insect toxicity through gustatory sites
- ⇒ Mammalian toxicity
- ➡ Responsible for handling carrying out research and data collection; conducting analysis to determine client's technical and strategic needs.
- Analyze, summarize and present results for all research projects. Regularly review ongoing research for trends. Provides insight on these findings and ensures key findings are shared with appropriate internal audiences.
- ➡ Identifying issues and forming hypotheses, formulating and implementing recommendations/solutions.
- ⇒ Ensuring the client receives the assistance needed to implement the recommendations/solutions.

### DISTINCTIONS/SCHOLARSHIPS AND AWARDS

Awarded <u>SENIOR RESEARCH FELLOWSHIP-2008</u> by Council of Scientific and Industrial Research (CSIR), New Delhi, India for Ph.D. in the Department of Food Protectants and Infestation Control, Central Food Technological Research Institute (CFTRI), CSIR, Mysore, Karnataka, India.

DR. KAMESHWAR RAO AWARD-2005 for 'Best poster paper' presented at 7<sup>th</sup> Applied Zoological Reasearch Association conference, 14<sup>th</sup>- 16<sup>th</sup> Feb 2005, Orissa Agriculture University, Bhubaneshwar, India.

### **EXAMINATION ACTIVITIES**

- 1. BOE Member
- 2. Question Paper Setting-, PG
- 3. Examinations Paper Evaluation-PG
- 4. University Practical Examiner-UG/PG
- 5. Research Guide: PG students projects

### **RESEARCH PUBLICATIONS**

### **Research Articles Published**-23

- Rajeshekar, Y. Vanitha Reddy, P. Khamrunnisa, Begum, Leelaja, B. C. and Rajendran, S. (2006) Studies on Aluminium phosphide tabled formulation. *Pestology*, 30 (4). pp. 41-45. ISSN 0870-3012.
- Leelaja, B. C., Rajashekar, Y. and Rajendran, S. (2007) Detection of eggs of stored-product insects in flour with staining techniques. *Journal of Stored Products Research*, 43 (3). pp. 206-210. (Imp. Factor -1. 41) ISSN: 0022-474X
- Leelaja, B. C., Rajashekar, Y., Vanitha Reddy, P., Khamrunissa, Begum and Rajendran, S. (2007) Enhanced fumigant toxicity of allyl acetate to stored-product beetles in the presence of carbon dioxide. *Journal of Stored Products Research*, 43 (1). pp. 45-48. (Imp. Factor -1.41) 0022-474X
- Khamrunissa, Begum., Vanitha Reddy, P., Leelaja, B. C., Rajashekar, Y. and Rajendran, S. (2007) Studies on insect infestation in chocolates. *Journal of Stored Products Research*, 43 (2). pp. 118-122. (Imp. Factor -1.41) 0022-474X
- Vanitha Reddy, P., Rajashekar, Y., Khamrunissa Begum, Leelaja, B. C. and Rajendran, S. (2007) The relation between phosphine sorption and terminal gas concentrations in successful fumigation of food commodities. *Pest Management Science*, 63 (1). pp. 96-103. (Imp. Factor-2.51) ISSN 1526-498X

- Leelaja B.C. and Rajini P.S (2012). Impact of phosphine exposure on development in *Caenorhabditis elegans:* Involvement of oxidative stress and the role of glutathione. *Pesticide Biochemistry and Physiology*.104; 38-43.( Imp. Factor - 2.1) ISSN: 0048-3575.
- Leelaja B.C. and Rajini P.S (2013). Biochemical and Physiological Responses in *Caenorhabditis* elegans Exposed to Sublethal Concentrations of the Organophosphorus Insecticide, Monocrotophos. Ecotoxicology and Environmental safety. *Ecotoxicology and Environmental Safety.* 94; 8–13. (Imp. Factor - 2.2).
- Murthy,GP., Leelaja, B.C and Shankar P. Hosmani (2011). Biomedical wastes disposal and management in some major hospitals of Mysore City, India. *International NGO Journal* Vol: 6(3): 071-078.
- Shivappa, M.C., Shivalingaiah., Leelaja, B.C and Murthy,GP (2008). Diversity Components in Ranganathittu bird Sanctuary, Karnataka, India. BIOCAM – 2008: International Conference on Biodiversity Conservation & Management Feb. 3 to 6: Cochin University, Cochin, Kerala, Pp-161 – 164 (Full Paper publication).
- Murthy,GP., Leelaja, B.C., Shivalingaiah and Shankar P. Hosmani (2008). Tropic State Index in conservation of Lake Ecosystems. Full paper Proceedings of TAAL -2007: The 12<sup>th</sup> World Lake Conference Jaipur, India, Page No: 840-843.
- Murthy,GP., Leelaja, B.C., Shivalingaiah (2007). Antifungal activity of aqueous extract of Safed musli against seed mycoflora of some vegetable crop plants during germination. *Proceedings of ICOC&OB and Env. Science* (Full paper) Pp-52-58, Erode, Tamilnadu, India.
- Murthy,GP., Leelaja, B.C and G.Mahadeva Prasad (2006). Effects of Gaucho and Apron On germination, seedling morphology, chlorophyll pigment, phytotoxicity and dry matter of Maize cv NAC-6002 at different exposure periods. *Journal of Ecology Environment & Conservation*, 12(3): 517-520.
- Murthy,GP., Puttaramaiah,G., Ravishankar,H.G., Mokshith,M.C., Leelaja, B.C and B. Shivalingaiah (2014). Study of Physico-Chemical Characteristics of Ground Water Samples of Chikkadalavata Grampanchayat, Tumkur District, Karnataka, India. *International Journal of Clinical Biochemistry & Research* 1(1): 30-40.
- Kiran,K., Murthy,GP., Leelaja,B.C., Rayankula Naidu & Swamy SGS (2014). Production of Green gas (Biogas) from Food wastes through sustainable Technologies ; *Midas touch international journal of Commerce, Management and Technology;* Vol-2, No. 1, Pp:424-432.

- 15. Murthy,GP., Puttaramaiah, G., Shankar P. Hosmani, Mokshith, M.C., Leelaja, B.C., Shivalingaiah, B and C.Kalachari (2014). The Innovative Water Quality Index (Iwqi) for Lakes of Mysore, Karnataka, India-*International Journal of Clinical Biochemistry & Research* 1(1): 25-29.
- Murthy,GP., Chandrasekhar K.B., Leelaja, B.C and Lokesh S (2015). Antimicrobial and Antioxidant activities of Tribal Medicine formulation (TMF) accomplished for Wound related remedies in Biligirirangana Hill area Chamarajanagara district, Krnataka (India); International Journal of Pharmaceutical Chemistry;05(08):260-276.
- Murthy,GP., Harsha,R., Leelaja,B.C., Chandrasekhar K.B and Lokesh (2016). Snake venom neutralizing effect of validated Herbal Medicine Formula Practiced in Tribal Medicine System (TMS) at B. R. Hills region of Karnataka, India. *Int. J. Res. Pharm. Sci*.7(3)2; 225-244.
- Murthy,GP, K. B. Chandrasekhar, D.K. Ravishankar,B.C. Leelaja, S. Lokesh, B. Manju (2017). Evaluation of Validated Herbal Medicine Formulation for Anti-Proliferative and Apoptotic Activities Used In the Tribal Medicine System, *IOSR Journal of Applied Chemistry* (IOSR-JAC); V-10(1) Pp: 05-24.
- 19. Thouseef Ahamad MY, Murthy,GP, Rajesh Kumar, Manjunatha R, Leelaja BC (2018). Bio-Ethanol Derived from Less Edible Fruit Cultivars of Coorg District (Karnataka) and Parametric Analysis Using IC Engine Fuelled with Bio-Ethanol-Diesel Blends. *Saudi Journal of Engineering and Technology;* Vol-3, Iss-1: 81-98.
- 20. Manjunatha R, Murthy,GP, Byregowda HV, Rajesh Kumar, **Leelaja BC** (2018). Bio- Diesel Production and Performance Analysis of I.C Engine Running On Diesel Fuel Blended with Different Fractions of Esterified Gingili Oil. *Saudi Journal of Engineering and Technology;* Vol-3, Iss-1: 24-39.
- 21. Panduranga Murthy G, **Leelaja BC**, Ravishankar HG, Dharshan Raj CG, and Rajesh Kumar (2018). Evaluation of Neuroprotection and Antioxidant Activities via Drosophila Model System in the Active Principle Derived from *Sida glutinosa* Comm. Ex Cav. - An Aboriginal Ethno-Medicinal Plant Drug Practiced in the Folklore Medicinal System. *Biomedical Journal*

*of Scientific & Technical Research*; Volume 11- Issue 5:Pp-1-8. (DOI: 10.26717/BJSTR.2018.11.002171).

22. Leelaja Bhadravathi Chandrappa, Panduranga Murthy G., Ravishankar Doddarasinakere Kempaiah, Jayaramu Neelakantanalli, Dharshan Raj Chenna Govindaraju, Rayankula Naidu (2019). Neuroprotective Efficacy of Maytenus emarginata (Wild.) Ding Hou Against Paraquat Induced Oxidative Stress and Neurotoxicity in Drosophila Model System. American Journal of Applied Chemistry;7(1): 25-34. (DOI: 10.11648/j.ajac.20190701.13).

- 23. Ravishankar, H.G., Madhuramozhi Govindharajalu., Leelaja B.C., and Panduranga Murthy, G. 2022. Characteristics of habitat structure and its impact on nest success, breeding bird density and reduction of mortality in Pelicans by the participation of rural community connected to biosphere of PSKB Area, India. The Biobrio: An international Journal of Life Sciences; 9(3&4):831-846.
- 24. Ravishankar, H.G., Madhuramozhi Govindharajalu., Leelaja B.C., and Panduranga Murthy, G. 2022. Nesting Pattern and Breeding behaviour Of Spot-Billed Pelican (Pelecanus philippensis) In Kokkare Bellur, Mandya District, Karnataka, India; Annals of Forest Research; 65(1): 1764-1791. (Scopus).

### PAPER PRESENTATIONS AT CONFERENCES/SEMINARS

- 1. Khamrunissa Begum, **Leelaja B.C**., Rajashekar Y, Vanitha Reddy P and Rajendran S. The development of insect pests in chocolates. Poster paper presented in the "16th Indian Convention of Food Scientists and Technologists-2004",9-10 December 2004, Mysore.
- Rajashekar Y, Vanitha Reddy P, Leelaja B.C., Khamrunissa Begum and Rajendran S. Influence of CO<sub>2</sub> on fumigant action of allyl acetate against stored product insects. Poster paper presented in the" 7th AZRA Conference on Recent trends in Applied Zoological Researches towards food and nutritional security and their impact on environment: Challenges Ahead". 14-16th February 2005, Bhuvanesh war.(Received Best Poster Award). "16th Indi an Convention of Food Scientists and Technologists-2004" ,9-10 December 2004, Mysore.
- 3. **Leelaja B.C.,** Rajashekar Y and Rajendran S. Detection of insect eggs contamination in wheat flour by staining. Poster paper presented in the "17th Indi an Convention of Food Scientists and Technologists-2005",9-10 December 2005, Bangalore.
- 4. Khamrunissa Begum, Vanitha Reddy P, Rajashekar Y, Leelaja B.C. and Rajendran S. The relation between phosphine sorption and terminal gas concentrations in successful fumigation of food commodities. Poster paper presented in the "17th Indian Convention of Food Scientists and Technologists-2005", 9-10 December 2005, Bangalore.

- 5. Rajashekar Y, Vanitha Reddy P, Khamrunissa Begum, **Leelaja B.C**. and Rajendran S. Studies on aluminum phosphide tablet formulation. 1st Congress on insect science. 15-17th December 2005, Ludhiana.
- Leelaja B.C., Khamrunissa Begum, Joshi A.K.R., Shashikumar S., Jadhav K.B., and Rajini P.S\*. Phosphine-induced developmental toxicity: a study with Caenorhabditis elegans. Presented at 6th International Food Convention at CFTRI, Mysore 15–19 December 2008.
- Apurva Kumar R Joshi, Leelaja B.C., Raju n., Sowmya D and Rajini P.S. potential of acephate, an organophosphorus insecticide to induce endocrine and reproductive dysfunction in rats. Presented at 6th International Food Convention at CFTRI, Mysore 15–19 December 2008.
- 8. Leelaja B.C., Shashikumar S, and Rajini P.S.\* Developmental toxicity of Phosphine in Caenorhabditis elegans is associated with up regulation of key antioxidant enzymes. Presented in International Conference on Advances in Free Radical Research: Natural Products, Antioxidants and Radioprotectors & 8th Annual Meeting of the SFRR-India at Lucknow, March 19-21, 2009.
- Leelaja B.C., Apurva Kumar R. Joshi and Rajini P.S.\* Comparative response of carboxylesterase in Caenorhabditis elegans and rat tissues to organophosphorus insecticides in vitro. presented at SBC (India) & 78th Annual meeting, at National Centre for Cell Science, Pune from October 30 - November 1, 2009.
- Leelaja B.C., Apurva Kumar R. Joshi, and Rajini P.S. Phosphine-induced developmental toxicity in Caenorhabditis elegans: involvement of glutathione. Presented in Society of Biological Chemists at Bangalore, between 14<sup>th</sup> - 16<sup>th</sup> December, 2011.
- 11. Raju N., Apurva Kumar R Joshi, Kisan B.J. **Leelaja B.C.,** and Rajini P.S Caenorhabditis elegans model of OPI-induced paralysis: a feasible in vivo system for screening oxime reactivators of inhibited acetylcholinesterase?. Presented in Society of Biological Chemists at Bangalore, December 14<sup>th</sup> 16<sup>th</sup>, 2011.
- 12. **Leelaja B.C.,** Apurva Kumar R Joshi, and Rajini PS.Impact of monocrotophos, an organophosphorus insecticide on Caenorhabditis elegans: Effect on definitive markers of toxicity and oxidative balance. at *International Conference on Environmental Pollution, Water Conservation and Health* held at Bangalore, from July 29-31, 2010.

### **Book Chapter**

- Panduranga Murthy, G., Rajesh Kumar and Leelaja B C. 2018. Emerging Opportunities for algae Bio-Fuels To Supplement Fossil Fuels By Employing Bio-Engineering Technology:
- A Review; Full Proceedings of national seminar Sponsored by University Grants Commission jointly with KKM College of Pakur, SKM University, Dumka India.

### 1) Dr. Kemparaju

Professor & Chairman Department of Studies in Biochemistry UNIVERSITY OF MYSORE, Manasaganagotri, Mysore-560 006, Karnataka, India

### 2) Dr. P.S. Rajini, Ph.D.,

Senior Principal Scientist Department of Food protecetants & Pest infestation Control (FPIC), Central Food Technological Research Institute, Mysore-570020, Karnataka, India Tel: 0821-2513210 Mobile: +919731358642 Email: rajinicftri@gmail.com

### PERSONAL INFORMATION

Name	: Leelaja B.C.	
Sex	: Female	
Age & Date of Birth	: 44 Yrs, 17 May 1980	
Nationality	: Indian	
Marital Status	: Married	
Father	: Chandrappa	
Permanent Address		
	: # 191, HAMSA KUTEERA, 8 <sup>th</sup> Main Road,	
	Kandaya Nagara, Near NSSO Bhavan,	
	(Sriram pura II Stage), Mysuru, (Karnataka)	
Mobile	: +919482739946	
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Dr. LEELAJA B.C.