CURRICULUM VITAE

Dr.RAVINDRA
Scientist-B,
Soil Science & Chemistry

Central Sericultural Research & Training Institute, Central Silk Board, Ministry of Textile Govt. of India, Manandwadi road Srirampura, Mysuru-570008 Karnataka

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Personal details

Name	: Dr.Ravindra
Designation	: Scientist-B
Date of Joining to CSB	:12.11.2015
Qualification	: MSc, Ph.D Biochemistry
Sex	: Male
Date of birth	: 01-10-1976
Father name	: Mahadappa
Nationality	: Indian
Languages known	: Kannada, English, Hindi, Marathi, Telgu
Marital status	: Married
Permanent address	: R/o Balath (B), Post Balath K, Taluk Aurad, Dist. Bidar- 585436, Karnataka.
Office address	: Soil Science & Chemistry section, Central Sericultural Research & Training Institute, Central Silk Board, Manandvadi road Srirampura, Mysuru-570008, Karnataka

ACADEMIC QUALIFICATIONS

Degree	Subject	University	Year of passing	Grade
BSc	Chemistry Botany, Zoology	Gulbarga University, Gulbarga, Karnataka	2003	First class
MSc	Biochemistry	Gulbarga University, Gulbarga, Karnataka	2005	First class
Ph.D	Biochemistry	Gulbarga University, Gulbarga, Karnataka	2011	Awarded

Ph. D., Thesis entitled, ñBiochemical studies on P-glycoprotein ATPase and catalase of insecticide resistant pest *Helicoverpa armigera* (Lepidoptera: Noctüidae)ò.

AWARDS/DISTINCTION

1) **IV** th Rank in M. Sc Biochemistry

2) **JRF**: Junior Research fellow in University Grant Commission (UGC) Govt. of India, research project (2005-2008)

3) **SRF**: Awarded as Senior Research Fellow of Council of Scientific and Industrial Research (CSIR-SRF) New Delhi, Govt of India (April 2008-2010).

4) **CSIR-SRF (Ext)**: (CSIR, New Delhi, India (2010-21011)

5) **ARP award** for the year 2010-11: Award for Best Research Publication by Vision Group on Science and Technology, Government of Karnataka.
6) **Postdoctoral fellow:** Worked as project fellow at Microbilogy and Cell biology IISc, Bengaluru Karnataka (2011)

7) **Postdoctoral Fellow**: Worked as Research Associate at IIHR, Bengaluru under National Fellow Project ICAR New Delhi (2012-2015)

PATENT: Three patent field during 2013-14

1. Silkworm, *Bombix mori* (Increasing of egg laying capacity)
2. *B.dorsalis* (Female attractant)
3. *B.cucurbitae* (Female attractant)

EXPERIENCE AND SKILLS

Research experience:

1. **JRF- Three years:** Worked as JRF under UGC project**: (**2005-2008) on Purification of esterase isozyme responsible for the hydrolysis of organophosphorous compounds from the resistant pest *Helicoverpa armigera.* Dept of Biochemistry, Gulbarga University, Gulbarga, Karnataka, India

2. **Ph. D, Five years:** 2006-2011, worked on Thesis entitled, ñBiochemical studies on P-glycoprotein ATPase and catalase of insecticide resistant pest *Helicoverpa armigera* (Lepidoptera: Noctüidae). Dept of Biochemistry, Gulbarga University, Gulbarga, Karnataka, India.

3. **Post doctoral fellow**: **JRF- Four months:** Worked on DNA gyrase, and KpnI of Mycobacterium tuberculosis1, 1-11-2011 to 15-2-2011, Molecular and Cell Biology, IISc, Bengaluru Karnataka

4. **Post doctoral fellow: (Research Associate) Four years:** Worked as Research Associate in National Fellow Project ñStudies on phyto-semiochemicals involved in insect plant interactionò from Feb, 2012 to 5th Nov 2015, Division of Entomology and Nematology, Indian Institute of Horticultural Research, Hesaraghtta, Bengaluru Karnataka.

5. **Scientist-B**: Worked as Scientist-B from 12th November, 2015 to 18th June 2018 at CSR&TI, CSB, Pampore J&K
6. **Scientist**-B: Working as Scientist-B from 20th June, 2018 to till date at CSR&TI, CSB, Mysuru, Karnataka

TECHNIQUES KNOWN

- Fluorescence spectrophotometer,
- Spectrophotometer,
- Electrophoresis,
- Western blotting,
- Chromatographic techniques,
- GC-MS, LSMS, HPLC, PCR
- MALDI-TOF
- Atomic Absorption spectrophotometer
- Flame photometer

- **Bioinformatics:** Proteomics, Genomics, blasta, clustal w,

►**Protein Purification Techniques***:* Familiar with most of the protein purification techniques, such as, Ion exchange chromatography, Affinity chromatography, Hydrophobic-interaction, HPLC and Gel filtration chromatography.

►**Enzyme assays:** Expertise in **a**ll types enzymes assay for example, multidrug resistance protein **(**Pgp ATPase**,** MRP ATPase), NaK ATPase, FoF1ATPase, Ca ATPase, phosphatase, esterase, Proteases, amylase, and antioxidant enzymes, (Catalase, superoxide dismutase, polyphenoloxidase) Also familiar in Electro-elution, native staining of enzymes and standardization of Kinetic parameters of enzymes.

►Extraction of bioactive compounds from Plants

►**Nucleic acid Techniques:** Isolation of plasmid and genomic DNA from bacteria, Restriction digestion, Transformation.

►**Microbiological Techniques:** Familiar with most of the microbiological skills. Expertise in isolation and characterization of bacterial and fungal strains.

3 **Phytosemiochemicals:** Extraction and identification of phytosemiochemicals from plants. Expertise in Insect bioassay, Y-tube assays, four arm olfactometer, wind tunnel, etc

►**Sericulture:** Silkworm rearing, biochemical analysis of soil, water and leaf. Extraction and identification of kairamone/pheromone compounds

RESEARCH PUBLICATIONS

List of Selected Research Articles: 49

S.NO	Author name, Article title and Journal name	Impact factor	NAAS Rating
1	**Ravindra Aurade**, Senigala K. Jayalakshmi, and Kuruba Sreeramulu (2006). Stimulatory effect of insecticides on partially purified P-glycoprotein ATPase from the resistant pest *Helicoverpa armigera. Biochem. Cell Biol*. 84: 1045ï 1050. doi:10.1139/O06-194.	2.8	8
2	**Ravindra M. Aurade**, Senigala K. Jayalakshmi, Kuruba Sreeramulu (2010). P-glycoprotein ATPase from the resistant pest, *Helicoverpa armigera*: Purification, characterization and effect of various insecticides on its transport function. *Biochimica et Biophysica Acta* (Biomembrane) 1798:1135ï 1143.	4	8.5
3	**Ravindra M. Aurade**, Senigala K. Jayalakshmi, Kuruba Sreeramulu (2010). Modulatory Effects of Natural Curcuminoids on P-Glycoprotein ATPase of Insecticide-Resistant Pest *Helicoverpa armigera* (Lepidopetera: Noctuidae). *J Membrane Biol* 236:271ï 278,	2	8.5
4	**Ravindra M. Aurade**, S.MD. Akbar, Hanumanth Goud, Senigala K. Jayalakshmi, Kuruba Sreeramulu (2011). Inhibition of P-glycoprotein	1.8	7.5

	ATPase and its transport function of *Helicoverpa armigera* by morin, quercetin and phloroglucinol. *Pesticide Biochemistry and Physiology* 101:212ï 219.		
5	**Ravindra M. Aurade**, Senigala K. Jayalakshmi, Shashikant S. Udikeri, Kuruba Sreeramulu (2012). Modulation of P-glycoprotein ATPase of *Helicoverpa armigera* by Cholesterol: effects on ATPase activity and Interaction of insecticides. *Archives Of Insect Biochemistry And Physiology*, 79: 47ï 60.	1.8	7.6
6	Kamala Jayanthi P D, Vivek K, **Ravindra M Aurade**, Ravindra K V, Bakthavatsalam N, Abraham V, Toby B (2014) Oviposition Site-Selection by Bactrocera dorsalis is mediated through an innate Recognition template tuned to -Octalactone. *PLoS ONE* 9(1): e85764. doi:10.1371/journal.pone.0085764.	3.5	8.9
7	Kamala Jayanthi P D, Vivek K, **Ravindra M Aurade** (2014) Computational reverse chemical ecology: virtual screening and predicting behavioral active semiochemicals for *Bactrocera dorsalis*. BMC Genomics 2014, 15:209.	4	8.9
8	Kamala Jayanthi P.D, Vivek Kempraj, **Ravindra M Aurade**, Ravindra K.V, Bakthavatsalam. **N**, Abraham verghese, and Toby. J. A. Bruce (2014). Specific volatile compounds from mango elicit oviposition in gravid *Bactrocera Dorsalis* females. Journal of Chemical Ecology 40:259-266	2.6	8.9
9	Akbar S MD, **Ravindra M Aurade**, Hari Chand Sharma, Sreeramulu kuruba (2014) Mitochondrial P-glycoprotein ATPase contributes to insecticide resistance in the cotton bollworm, *Helicoverpa armigera* (Noctuidae: Lepidoptera). *Cell Biochemistry and Biophysics* 10.1007/s12013-014-9969-5.	4	8.9
10	Kamala Jayanthi P.D, Arthikirubha A,Vivek K, **Ravindra M A**, Selvakumar G, Vergheese A (2015) Aspergillus flavus impairs antioxidative enzymes of sternochetus mangiferae during mycosis. Journal of Invertibrate Pathology, 124: 73-77.	2.6	8.5
11	Kamala Jayanthi P D, Vivek K, **Ravindra M A**, Sowmya BR, Ravindra K V, Bakthavatsalam N & Verghese A (2014) Centuries of domestication has not impaired oviposition site-selection function in the silkmoth, *Bombyx mori*. SCIENTIFIC REPORTS SREP-14-05897.3d 3/12/14 09:43:32 DOI: 10.1038/srep07472.	5	10

12	Kantrao Saware, **Ravindra Mahadappa Aurade**, P. D. Kamala Jayanthi, Venkataraman Abbaraju (2014) Modulatory Effect of Citrate Reduced Gold and Biosynthesized Silver nanoparticles on amylase activity. Journal of Nanoparticles. 829718.	0.8	5
13	Kamala Jayanthi PD, **Ravindra Mahadappa Aurade**, Vivek Kempraj Roy T.K, Shivashankara K.S (2015) Salicylic acid induces changes in mango Fruit that affect oviposition behavior and development of the oriental fruit fly, *Bactrocera dorsalis*. PLOSE ONE, DOI:10.1371/journal.pone.0139124, September 30, 2015.	3.5	9
14	Kamala Jayanthi PD, **Ravindra Mahadappa Aurade**, Vivek Kempraj (2015) Aromatic fruits as baits for the management of fruit piercing moths in pomegranate: Exploiting olfaction. **CURRENT SCIENCE, VOL. 109, NO. 1476 8, 25 OCTOBER 2015.**	0.9	7.9
15	Kamala Jayanthi P D, **Ravindra M A**, Arthikirubha A, Vivek K (2016) Isolation and characterization of catalase isoforms from the mango stone weevil, *Sternochetus mangiferae*. Journal of Asia-Pacific Entomology 19 (2016) 239ï 245.	1.6	7.5
16	Kamala Jayanthi PD, Vivek Kempraj, **Ravindra M. Aurade** & Toby J. A. Bruce (2017) Evaluation of synthetic oviposition stimulants to enhance egg collection of the oriental fruit fly, *Bactrocera dorsalis* (Diptera: Tephritidae). Journal of Pest Science (2017) 90:781-786.	3	8.5
17	Kamala Jayanthi PD, Vivek K and **Ravindra A** (2016) Computational reverse chemical ecology: Prospecting semiochemicals for pest management using *in silico* approach in *Plutella xylostella* Linn. Pest Management in Horticultural Ecosystems,Vol. 22, No. 1 pp 20-27 (2016).	-	4
18	Kantrao Saware, **Ravindra Mahadappa Aurade**, Akbar SMD, Kamala Jayanthi PD, Venkataraman Abbaraju (2017) Modulatory effect of biosynthesized Silver nanoparticles against gut protease of insecticide resistant pest *Helicoverpa armigera* (Lepidoptera:Noctuidae). J of Asia Pacific Entomology 2016, 506.	1.6	7
19	P. D. Kamala jayanthi1,N. S. Murthy, T. Nagaraja, T. Raghava, **M. A. Ravindra**, Vivek K, Hemant B, Pallavi, Abraham V, Krishnamoorthy. (2015) Nectar robbing by Purple Sunbird, *Nectarinia asiatica* (L.) in Pomegranate reduces reproductive success. Pest Management in Horticultural Ecosystems, 21, No. 2 214-218 (2015).	0.2	4

20	P. D. Kamala Jayanthi, Vivek Kempraj, **Ravindra MA** andAabraham Verghese (2015) Oriental fruit fly, *Bactrocera dorsalis* (Hendel) infestation makes banana crop vulnerable to Indian blue peafowls attack. Pest Management in Horticultural Ecosystems,Vol. 21, No. 1 pp 88-89 (2015).	0.2	4
21	Gundappa, Kamala Jayanthi PD, **Ravindra M Aurade**, Vivek Kempraj, Ravindra K. V, Bhaktavatsalam N and Abraham Verghese (2016) Behavioral and electrophysiological responses of mango hopper, *Idioscopus nitidulus* (Walker) (Hemiptera: Cicadellidae) to host cues. Pest Management in Horticultural Ecosystems,Vol. 22, No. 2, 118-122 (2016).	0.2	4
22	Prasanna Kumar NR, Kamala Jayanthi PD, Vivek K, **Ravindra MA**, Roy TK, Verghese A (2017) Herbivore induced plant volatiles represents a favorable host to onion thrips (Thrips tabaci). Indian Journal of Agriculture Science 87, 3, 2017.	0.28	4.5
23	Hanumanth Goud G, **Ravindra M Aurade**, Jayalakshmi S.K, Sreeramulu K (2012). Inhibition of Catalase isozymes of *Helicoverpa Aarmigera* (Lepidoptera: Noctuidae) by Salicylic Aacid. *IOSR Journal of Pharmacy and Biological Sciences ISSN: 2278-3008, 3, (Sep-Oct 2012), PP 26-28www.iosrjournals.org*.	-	3
24	Kamala Jayanthi PD, **Ravindra Mahadappa Aurade**, Vivek Kempraj, A. K. Chakravarthy and Abraham Verghese (2015) Glimpses of Semiochemical Research Applications in Indian Horticulture: Present Status and Future Perspectives. **DOI 10.1007/978-81-322-2089-3_22, © Springer India 2015**	Book	-
25	Gulab Khan Rohela, Aftab Ahmad Shabnam, Pawan Shukla, **Ravindra**, Mudasir Gani, Srinivasulu Y and Sharma S.P. First report on *in vitro* clonal propagation of PPR-1, a superior temperate mulberry variety. Physiology and Molecular Biology of Plants	1.35	7.35
26	Gulab Khan Rohela, Pawan Shukla, **Ravindra**, Mudasir Gani, Aftab A. Shabnam, Srinivasulu Y and Sharma S.P **(2016[b]).** Somatic Hybridization as a potential tool for mulberry improvement ï A Review. Indian Horticulture Journal; 6 (Special): 46-49,	-	3.41
27	Kamala Jayanthi P.D, **Ravindra MA**, Vivek K, T.K. Roy, K.S. Shivashankara and Singh T. H. (2018). Morphological diversity of trichomes and phytochemicals in wild and cultivated eggplant species. Indian Journal of Horticulture. 2018 (accepted)	0.2	6.13

28	Shivkumar, Bharath Kumar N, Mir Nisar Ahmad, Shakeel Ahmad, **Ravindra MA** and MK Ghosh (2018) Studies on improvement of quantitative traits of silkworm, *Bombyx mori* L. during autumn season under temperate climatic conditions of Kashmir. Journal of Entomology and Zoology Studies 2018; 6(4): 677-682		5.53

CONFERENCES ATTENDED/PAPERS PRESENTED: 17

1) **Ravindra MA**, Shivkumar B**,** Gulab Khan R**.** A review on anti-BmNPV proteins of silk worm. National Seminar on ñ*Sericultural Development in Temperate region-Problems& Prospects*ò organized by CSR&TI, Pampore on 21st& 22nd March, 2016.

2) **Ravindra M**.A., Vivek K., Kamala JayanthiP.D. Alkaloid contents in the mulberry leaf protect silkworm larvae from uziflyinfestation.*National Seminar on "Sericultural Development in Temperate region-Problems& Prospects*ò organized by CSR&TI, Pampore on 21st& 22nd March, 2016.

3) **Ravindra M.A.,** Gulab Khan R and Shivkumar. A review on salicylic acid induces defense mechanism against pathogen in plants. Presented in national seminar on sericultural development in temperate region-problems & prospects held on 21st& 22nd March 2016 organized by CSR&TI, Pampore

4) Gulab Khan Rohela, Pawan Shukla, **Ravindra**, Mudasir Gani, Aftab A. Shabnam, Srinivasulu Y and Sharma S.P. Somatic Hybridization as a potential tool for mulberry improvement-A review.*National Seminar on "Sericultural Development in Temperate region-Problems& Prospects*ò organized by CSR&TI, Pampore on 21st& 22nd March, 2016.

5) Gulab Khan**,** Pawan Shukla, **Ravindra,** Mudasir Gani, Aftab Ahmad &S.P.Sharma**.** Environmental Biotechnology: As a potential tool for ecosystem restoration. National seminar on ñ*Environmental pollution organized by University of Kashmir*ò on 5th June, 2016.

6) Gulab Khan**,** Pawan Shukla, **Ravindra**, Mudasir Gani, Aftab Ahmad &S.P.Sharma**.** Existence of diversified mulberry in J&K state and other North West regions of India. Organised by CSGRC, Hosur, Tamil Nadu, India.

7) **Ravindra M. Aurade**, Senigala K. Jayalakshmi and Kuruba Sreeramulu (2007). P-glycoprotein ATPase from the resistant pest *Helicoverpa armigera*; Purification, characterization and reconstitution.76th SBC (India) Nov 25-27, 2007 Dept of Biochemistry Sri Venkatesh University Tirupati, Andhra Pradesh.

8) **Ravindra M.Aurade**, Senigala K. Jayalakshmi and Kuruba Sreeramulu (2008). Reconstitution and modulation of Pgp ATPase activity of insecticide resistant pest *Helicoverpa armigera* by cholesterol. 77th SBC (India) 18th-20th Dec 2008 Department of Biotechnology IIT Madras, Tamilnadu

9) **Ravindra M.Aurade**, Senigala K. Jayalakshmi and Kuruba Sreeramulu (2009). Inhibitory effect of salicylic acid, morin, curcumin and saponin on P-glycoprotein ATPase activity of *Helicoverpa armigera*: and their effect on interaction and TMR transport function. ICCTCB-2009, December 18-19, 2009. Dept of Chemistry and Biochemistry central college campus, Bangalore University, Bangalore-560001, India

10) P.D.Kamala Jayanthi, **Ravindra M. Aurade**, Vivek Kempraj, T H Singh, A. Verghese and H.S. Vageesh Babu (2012) Role of host-plant trichome based defenses on neonate larvae of Brinjal fruit and shoot borer, *Leucinodes orbonalis*

11) Kamala Jayanthi P.D, **Ravindra M. A**, Vivek Kempraj, Roy T.K, Shivashankara K.S, Singh T. H, VageeshBabu H. S, and Abraham V, (2013). Leaf trichomes in wild brinjal genotypes have enhanced chemical than physical defense against *Leucinodes orbonalis*. 4th International Conference on Insect Science, 14th to 17th Feb, 2013, Bangalore, India, New Horizons in Insect Science. pp-85.

12) Kamala Jayanthi P. D, Arthikirubha A, Selva Kumar G, Vivek Kempraj, **Ravindra M A**, Jayasimha G. T, and Abraham V, (2013). Identification and Characterization of Aspergillus flavus as a fungal pathogen on mango stone weevil, Sternochetus mangiferae (Fabricius) (Coleoptera: Curculionidae). 4th international conference on insect science, 14th to 17th Feb, 2013, Bangalore, india, New Horizons in Insect Science. pp-56.

13) Kamala Jayanthi P.D, **Ravindra M. A**, Vivek Kempraj and Abraham V, (2013). Mango webber, Orthaga exvinaceae keeps tagging along!. 4th International Conference on Insect Science, 14th to 17th Feb, 2013, Bangalore, India, New Horizons in Insect Science. pp-47

14) Kamala Jayanthi P.D, Vivek Kempraj, **Ravindra M. A**, Roy T.K, Shivashankara K.S, and A Verghese, (2013). Odorant binding protein: The liaison to insect olfaction. 4th international conference on insect science, 14th to 17th Feb, 2013, Bangalore, India, New Horizons in Insect Science. pp-85.

15) Kamala Jayanthi P.D, Vivek Kempraj, **Ravindra M.A**, Arthikirubha A, Vasugi C, Bhat R.M. and A. Verghese, (2013). Off-season survival of mango stone weevil, Sternochetus mangiferae - ambiguous univoltinity**?.** 4th International Conference on Insect Science, 14th to 17th Feb, 2013, Bangalore, India, New Horizons in Insect Science. pp-47.

16) Kamala Jayanthi P.D, **Ravindra M A**, Vivek Kempraj and A Verghese, (2013). Expression of anti-oxidative enzymes in the mango Stone weevil, Sternochetus mangiferae**.** 4th International Conference on Insect Science, 14th to 17th Feb, 2013, Bangalore, India, New Horizons in Insect Science. pp-46.

17) Kamala Jayanthi P.D, **Ravindra M A**, Vivek Kempraj and A Verghese (2014) Salicylic acid and Jasmonic acid-induced changes in mango fruit affect oviposition, egg load, and larval growth of fruit fly, *B.dorsalis*. International conference on Entomology, 21st- 23rd Feb, 2014, Punjabi University, Patiala, India. pp-199.

Seminars/Trainings/Workshops Attended:10

1. Attended Five days Technical Orientation Programme on ñYoung Age Silkworm Rearing and Disinfection Practicesò organized by Central Silk Board under ñCapacity Building &Training (CBT)ò at CSR& TI, Pampore (J&K), from 15th-19th February, 2016.

2. Attended the**"**Foundation Training Programme For Young Scientists**"** held at Central Silk Board, Bengaluru, CSR &TI, Mysore and CMER&TI, Ladohigarh from 22nd Feb - 8th March,2016.

3. Attended and presented a poster in National Seminar on Sericultural Development in Temperate Region-Problems & Prospects" Organized by CSR& TI, Pampore (J&K), on 21st and 22nd March, 2016.

4. Attended a Guest Lecture on ñBio sensing System for the detection of diseases in Silk wormò delivered by Dr. Bhattacharya, Associate Director, Kolkata on 31st May, 2016at CSR&TI, Pampore (J&K**)**.

5. Attended One Day Hindi Work shop at CSR&TI, Pampore and listened to the lecture delivered by Sh.Sunil Kumar, PGT, KendriyaVidyalaya-01, Srinagar on 30th June, 2016 at CSR&TI, Pampore (J&K**)**.

6. Attended 20 days training programme at CSR&TI, Mysore on ñSoil analysis and health card preparationò from 21 Nov, 2016 to 10 Dec, 2016.

7. Attended three days training programme at NSSO Bengaluru on ñQuarantine procedureò from 4th Jan to 6th Jan 2017.

8. Attended five days Silk worm Disease Management & Procedure of Mother moth Examinationò at CSR & TI, Pampore (J&K) (15th ï 19th Dec., 2015)

9. Attended Young age silkworm rearing and incubation at CSR & TI, Pampore (J&K) (15th ï 19th Feb., 2016).

10. Attended Transgenic Silkworm Rearing and Biosafety Measures at CSR&TI, Pampore (3rd May, 2017).