

### 1. Personal Information:

Name : Dr. R. B. Smitha      Designation: Assistant Professor

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### 2. Educational Qualifications:

SI. No.	Name of the Program/ Test	Institution & University/ Agency	Year
1.	M. Sc.	University of Kerala	2003
2.	B. Ed.	University of Calicut	2004
3.	M. Phil	University of Kerala	2006
4.	Ph. D	University of Calicut	2010

### 3. Career Profile:

SI.No.	Name of the Institution	Designation	Period of Service
1.	St. Thomas College, Thrissur	FDP Lecturer	2
2.	Central University of Kerala	Assistant Professor (Adhoc)	2
3.	KSCSTE-MBGIPS, Calicut	Young Scientist	3
		Principal Investigator	3
		Women Scientist	2

### 4. Area of Specialization/Research Interests:

Microbiology, Molecular Biology, Tissue Culture, Biotechnology

## 5. Achievements

1. Gregor Mendel Foundation of University of Calicut awarded “**Best Organizer**” for the best organization of the National Seminar organized on “Patents, Plant breeding, Biotechnology and Conservation” from 1-3<sup>rd</sup> Dec. 2015 at Malabar Botanical Garden & Institute for Plant Sciences (Co-Convener).
2. Society for Education and Scientific Research (SESR) selected **Best Microbiologist** of the year 2015.

## 6. Inventions

- a. Invented Twenty Two new hydrocarbon degrading bacteria, from oil contaminated sites and submitted to Genbank (The Hindu & All Kerala News papers- August 14).
- b. Invented Five new hydrocarbon degrading fungi, from oil contaminated sites and submitted to Genbank.
- c. Invented 15 new plastic degrading bacteria from plastic recycling unit, West Hill, Calicut and submitted to Genbank (The Hindu - 2016).

## 7. Patent (*Provisional Number 339/DEL/2012*)

A process for the dual production of  $\alpha$ -amylase and *Bt*-toxin by *Bacillus thuringiensis* subsp. *kurstaki* and efficacy of *Bt*-toxin to combat coconut mite. Sailas Benjamin, Smitha RB and Jisha VN. (Patent Filed through the Department of Biotechnology, Ministry of Science and Technology, Government of India ).

## 8. Major projects

### Completed

1. DST Sanctioned Young scientist Fellowship of 31.0 lakhs (No. SERB/LS-587/2013) Dated 20<sup>th</sup> September, 2013. Project titled “Isolation and purification of Catechol 2, 3 dioxygenase-a key Hydrocarbon degrading enzyme from industrial wastes”.

2. Kerala Biotechnology Commission sanctioned Young Investigators Programme in Biotechnology of Rs. 23.32 Lakhs (No. 048/YIPB/KBC/2017/KSCSTE) dated 16<sup>th</sup> October 2017. Project titled “Application of Bacterial strains for the production of Biodegradable plastics from weed plants”

### Ongoing

DST Sanctioned Women Scientist Fellowship of 34. 14 Lakhs (DST/WOS-B/2018/1272(G) dated 31<sup>st</sup> October 2019. Project titled “Potential applications of naturally isolated bacterial strains for the production of biodegradable plastics”.

### 9. Research Publications:

SI.No.	Details of article
1.	Smitha R.B., Bennans T., Mohankumar C. and Benjamin S. (2009). Oxidative stress enzymes in <i>Ficus religiosa</i> L.: Biochemical, histochemical and anatomical evidences. <i>Journal of Photochemistry and Photobiology B: Biology</i> , 95: 17 – 25. Impact factor 2.814. ISSN No. 1011-1344.
2.	Abhilash P., Pradeep S., Smitha R.B., Jisha V.N., Balachandran S. and Benjamin S. (2009). Effect of certain anti-diabetic ayurvedic drugs against microbes causing diabetes- dependent infections. <i>Journal of Pure and Applied Microbiology</i> , 3: 503-516. Impact factor – 1.0. ISSN No. 0973-7510.
3.	C. Athira, Rilma Rappai, Joseph Louis Olekkengil and R.B. Smitha* (2011). Efficacy studies of $\delta$ - endotoxins from <i>Bacillus thuringiensis</i> subsp. <i>kurstaki</i> against <i>Aphis craccivora</i> and <i>Ferrisia virgata</i> . <i>Journal of Actabiologica</i> . eISSN No. 2279-0160.
4.	Rilma Rappai, C. Athira, Joseph Louis Olekkengil and R.B. Smitha* (2011). Efficacy studies of $\delta$ - endotoxins from <i>Bacillus thuringiensis</i> subsp. <i>kurstaki</i> against Red cotton bug, <i>Dysdercus singulatus</i> . <i>Journal of Actabiologica</i> . eISSN No. 2279-0160.

5.	R B Smitha, S Pradeep, S Sajith, S Sreedevi, VN Jisha, KN Unni, M K Sarath Josh and Sailas Benjamin (2013). A monograph on amylases from <i>Bacillus</i> spp. <i>Advances in Bioscience and Biotechnology</i> , 4: 227-241. Impact factor 1.778. ISSN No. 2156-8502.
6.	Smitha RB, Jisha VN and Sailas Benjamin (2013). Potato flour is an efficient supplement for the enhanced production of endospore and $\delta$ -endotoxin from <i>Bacillus thuringiensis</i> subsp. <i>kurstaki</i> by solid-state fermentation. <i>Journal of Bioscience and Bioengineering</i> 116: 595-601. Impact factor 2.149. ISSN No. 1389-1723
7.	Jisha VN, Smitha RB, Pradeep S, Sreedevi S, Unni KN, Sajith S, Priji P, Sarath JM and Sailas Benjamin (2013). Versatility of microbial proteases. <i>Advances in Enzyme Research</i> , 1 : 39 – 51. ISSN Online: 2328-4854.
8.	Smitha RB, Jisha VN, Sajith S and Sailas Benjamin (2013). Dual Production of Amylase and $\delta$ -Endotoxin by <i>Bacillus thuringiensis</i> subsp. <i>kurstaki</i> during Biphasic Fermentation. <i>Microbiology</i> , 82: 794–800. Impact factor – 2.852.
9.	Jisha VN, Smitha RB and Sailas Benjamin (2013). An Overview on the Crystal Toxins from <i>Bacillus thuringiensis</i> . <i>Advances in Microbiology</i> , 3: 462-472. Impact factor – ISSN Online: 2165-3410
10.	Drisyadas P, Smitha RB, Benjamin S and Madhusoodnan PV (2014). Induction of in vitro flowering and callogenesis in <i>Blepharis maderaspatensis</i> L. ( <i>Acanthaceae</i> ), a medicinal plant. <i>Annals of Plant Sciences</i> , 3(08): 799-803
11.	Sini S, Smitha RB and Madhusoodanan PV (2014). Induction of sporocarp development in vitro in the mosquito fern, <i>Azolla rubra</i> R. Br. <i>Annals of Plant Sciences</i> , 4(02): 994 - 1002.
12.	Smitha RB, Madhusoodanan PV and Prakashkumar R (2014). Anticancer activity of <i>Acanthus ilicifolius</i> Linn. From Chettuva mangroves, Kerala, India. <i>International Journal of Bioassays</i> , 3(11): 3452-3455
13.	Madhusoodanan PV, Sreeranjini VK, Smitha RB and Prakashkumar R (2014). Invasion of <i>Salvinia molesta</i> D.S. Mitchell (African payal) in Kerala and its management. <i>Indian Fern Journal</i> , 31: 162-172.

14.	Madhusoodanan PV, Prakshkumar R, Sreernjini VK and Smitha RB (2014). Ecology of South Indian Pteridophytes. Indian Fern Journal, 31: 173 -186.
15.	Smitha RB, Priji P, Sajith S, Ramani N and Benjamin S (2015). Efficiency of Bacillus thuringiensis subsp. kurstaki in crude solid fermented matter against the coconut pest, Aceria guerreronis. Bt Research, 6 (2): 1-10
16.	Smitha RB, Sajith S, Priji P, Unni KN, Asokan T, Roy N and Benjamin S (2015). Purification and characterization of amylase from Bacillus thuringiensis subsp. Kurstaki. Bt Research, 6(3): 1-8.
17.	Jisha VN, Smitha RB, Priji P, Sajith S and Benjamin S (2015). Biphasic fermentation is an efficient strategy for the overproduction of $\delta$ -endotoxin from Bacillus thuringiensis. Applied Biochemistry and Biotechnology, 175: 1519-1535.
18.	Surya KP, Smitha RB, Anoop KP, Prakashkumar R and Madhusoodanan PV (2015). Induction of seed germination in the RET medicinal plant, Jyothishmathi (Celastrus paniculatus Willd.). International Journal of Plant, Animal and Environmental Sciences, 6(3): 18-24
19.	Jisha VN, Sajith S, Priji P, Smitha RB and Benjamin S (2015). Thermo and detergent stable alkaline protease from Bacillus thuringiensis subsp. kurstaki. Bt Research, 6(6): 1- 10.
20.	Swetha T , Anusree P , Saranya BJCM, Smitha RB , Minoo D, Madhusoodanan PV and Prakashkumar R (2018). In vitro conservation and propagation of the endemic species of "floating hearts" (Nymphoides krishnakesara Joseph and Sivar. - Menyanthaceae) as a conservation strategy. Journal of Applied Biology & Biotechnology Vol. 6(04), pp. 9-13
21.	Jisha VN, Smitha RB, Priji P, Panichikkal AF, Ramani N, Babu GM and Benjamin S (2017). Crude Bacillus thuringiensis pellets efficiently combats Eutetranychus orientalis, the spider mite. International Journal of Pest Management, DOI: 10.1080/09670874.2017.1390622.

## 10. Books:

SI.No.	Name of the book	Publisher	ISBN No.	Author/Co-Author/Editor
1.	Fermentation Strategies for the production of $\alpha$ -amylase and $\delta$ -endotoxin from <i>Bacillus thuringiensis</i> subsp. <i>kurstaki</i> .	Avid Sciences, Germany	ISBN No.: 978-93-88170-45-1.	RB Smitha, Sailas Benjamin and Prakashkumar R (2019)
2.	Waste Management	MBGIPS	ISBN No.: 978-81-931285-4-1.	RB Smitha, NS Pradeep & S Pradeep Kumar (2019)
3.	Book of Abstracts on Patents, Plant Breeding, Biotechnology & Conservation	MBGIPS	ISBN No.: 978-81-931285-1-0.	RB Smitha, NS Pradeep, KV Mohanan, PV Madhusoodanan and R Prakashkumar (2015)
4.	Advances and Challenges in Plant Breeding, Biotechnology & Conservation	MBGIPS	ISBN No.: 978-81-931285-1-3.	RB Smitha, R Prakashkumar, NS Pradeep, KV Mohanan and PV Madhusoodanan (2016)

## 11. Seminars /Workshops Attended/Papers Presented/ Invited talks

SI.No.	Venue & Name of the program	Participation/Invited/Contributory	Title of the Paper
1.	NGBT 2019 at Taj Lands Hotel Mumbai from 2nd to 4th October 2019	Oral presentation	Isolation and partial purification of Catechol 2,3 dioxygenase from <i>Aspergillus</i>

			flavus-an oil degrading fungus.
2.	International Biodiversity Congress (IBC 2018) 4-6 th October 2018 at Forest Research Institute (FRI), Dehradun, India.	Oral presentation	Isolation and partial purification of Catechol 2,3-dioxygenase from Paecilomyces fumosus-an oil degrading fungus.
3.	International conference on Biosciences-state of the art achievements held at Lake song Resort Kumarkom on 11-12th September 2014.	Oral presentation	Effect of endosulfan on certain biochemical and histochemical mechanisms in Vigna sinensis.
4.	First International conference on Biotechnology, Bioinformatics and Bioengineering conducted on 28 - 29 June 2013 at Tirupati	Oral presentation	Isolation of bacterial and fungal pathogen and demonstration of Koch postulates.
5.	International symposium -cum-workshop in Acarology organized by Bidhan Chandra Krishi Viswavidyalaya, Kalyani, West Bengal, India from 8th to 10th April 2010.	Oral presentation	Antioxidant effect of Nigella sativa and Cuminum cyminum.
6.	Proceedings of the national Seminar on "Genetics, Breeding and Biotechnology", Gregor Mendel Foundation, University of Calicut.	Oral presentation	Isolation and characterization Bacillus spp.

7.	Proceedings of the UGC sponsored National seminar on conservation and sustainable utilization of red listed medicinal plants of Western Ghats of India during September 2 - 3, 2010 at Newmann College Thodupuzha.	Oral presentation	Effect of Kinetin (6BA) on certain biochemical characteristics in rice under saline stress.
8.	Proceedings of the UGC sponsored National seminar on conservation and sustainable utilization of red listed medicinal plants of Western Ghats of India	Oral presentation	Antioxidant effect of <i>Nigella sativa</i> and <i>Cuminum cyminum</i> against rats.
9.	Proceedings of the UGC sponsored National seminar on conservation and sustainable utilization of redlisted medicinal plants of Western Ghats of India.	Oral presentation	Antibacterial Activity of <i>Saraca asoca</i> and <i>Polyalthia longifolia</i> against <i>Staphylococcus aureus</i> and <i>Klebsiella pneumonia</i> .
10.	Proceedings of the UGC sponsored National seminar on conservation and sustainable utilization of red listed medicinal plants of Western Ghats of India.	Oral presentation	Antiviral activity of <i>Azadirachta Indica</i> , A. Juss. against Newcastle Disease Virus.
11	Proceedings of the national Seminar on "Genetics, Breeding and Biotechnology", Gregor	Oral presentation	Isolation and characterization <i>Bacillus</i> spp.

	Mendel Foundation, University of Calicut.		
12	World Ocean Science Congress, 5-8 February, 2015 at Cochi	Oral presentation	Isolation and characterisation of hydrocarbon degrading bacteria from engine oil polluted areas of Thrissur district
13	National seminar on Modern Trends in Conservation, Utilization and Improvement of Plant Genetic Resources, 2017 at University of Kerala	Oral presentation	Isolation and characterization of C23O from Paecilomyces fumoses-an oil degrading fungus.
11.	North Corollina Agricultural University, Greensboro, New York from April 8 - 12, 2011.	Oral presentation	Seminar cum workshop on DNA bioinformatics
12.	Bidhan Chandra Krishi Vidhyala, West Bengal, Calcutta from April 8 - 10, 2010.	Oral presentation	International symposium cum workshop in Acarology symposium
13	February 12 - 14, 2014, Department of Chemistry, Central University of Kerala.	Attended	"Teachers Training Programme on Microscale Chemistry"
14	Centre for infrastructure, Sustainable Transportation and Urban Planning (CiSTUP), Indian Institute of Science, Bangalore during September 23 - 25, 2009.	Attended	"Workshop on Urban lake Monitoring and Management"

15	Department of Botany, St. Joseph's College, Iringalakuda from September 29 - 30, 2010.	Attended	"National seminar cum Workshop on Herbs and Herbal products"
16	Amala Ayurvedic Research Centre on February 2010.	Attended	Seminar cum exhibition on medicinal plants
17	Department of NanoScience and Technology in association with Department of Chemistry, University of Calicut during August 25 - 26, 2009.	Attended	National Workshop on Advances in Nanomaterials"
18	Department of Life Science, University of Calicut on 13th February, 2008.	Attended	National Seminar on Neuroscience
	Centre for Environment and Development at Kozhikode during December 15 - 16, 2006	Attended	Kerala Environment Congress

## 12. Programs Organized

Sl.No.	Name of the Program	International/National /Regional	Funding Agency
1.	National Seminar on Molecular Trends in Taxonomy & Biodiversity Conservation	National	UGC
2.	Sasthrasameeksha 2016-2018	National	KSCSTE
3.	Bionidhi 2015 - 2018	National	KSCSTE
4.	GMF-2015	National	UGC & GMF

### 13. Positions held or holding if any

SI.No.	Details
1.	Class Teacher of Second year M. Sc.

### 10. Courses attended for Professional Development:

SI. No.	Name of the course	Organizing Institute	Period
1.	Diploma in Microbial Biotechnology	Best Biotek Research Labs (P) Ltd., Jayanagar, Bangalore	April - May 2006.

### 14. Membership in Scientific/Professional Societies:

SI. No	Name of the Society	Nature of the Membership
1.	Kerala Academy of Sciences	Lifetime
2.	Society for Educational & Scientific Research	Lifetime
3.	National Academy of Biological Sciences	Lifetime
4.	Gregor Mendel Foundation	Lifetime
5.	Indian Acarology Society	Lifetime