

Bio-Data

Faculty Member Details

Name: Dr. Dharmesh Harwani		
Date of Birth:	25 August 1977	
Date of joining:	09 June 2011	
Present Position:	Assistant Professor	
Department:	Microbiology	
Pay Scale + Grade Pay:	15600-39100 (6000)	
Mailing Address:		
Office: Academic Block Maharaja Ganga Singh University N.H. 15, Jaisalmer Road, Bikaner-334004		Residence: C-36, Suraj Villa, Murlidhar Vyas Colony, Bikaner-334001
Telephone No.: 0151-2212240 Fax No.: 0151-2212042		Mobile No.: +91 87 64 31 12 40 E-mail: dharmesh_harwani@hotmail.com harwanidharmesh@gmail.com
Qualifications: MSc and PhD in Microbiology		
(Detailed)		
<ul style="list-style-type: none">• Assistant Professor, Microbiology, Maharaja Ganga Singh University, Bikaner (<i>June 2011-</i>)• Post PhD (DBT-Post Doctoral Fellow; RA-I-II-III), Microbial Genetics, Indian Institute of Science, Bangalore (<i>Jan. 2007- June 2011</i>)• PhD (Biodiversity and Efficiency of Bradyrhizobial Strains and AMF), Microbiology, Maharshi Dayanand Saraswati University, Ajmer (<i>Dec. 2002- April 2006</i>)• Senior Lecturer, Microbiology, Gyan Vihar University, Jaipur (<i>Sept. 2006-Jan. 2007</i>)• Project Assistant and Junior Research Fellow INCO-DEV Research Project (International Cooperation for Developing Countries (India, Spain, Nepal, Germany) for Improved Biological Nitrogen Fixation, European Comm., Coordinator Dr. Dietrich Werner) (<i>Aug. 2002 - Feb. 2006</i>)• UGC/CSIR NET (2003)• M.Sc., Microbiology, Maharshi Dayanand Saraswati University, Ajmer (<i>Aug. 2002</i>)• DOEACC "O-Level", New-Delhi in Computers (<i>2001</i>)		
Specialization:		
<ul style="list-style-type: none">• Genetic Engineering• Proteomics		

- Bio-informatics

Research and Teaching Experience:

2002-2006 (Aug.-April)	Teaching and Research	INCO-DEV* laboratory, Dept of Botany and Microbiology, Maharshi Dayanand Saraswati University, Ajmer-305009, Rajasthan
2006 (April-Sept.)	Teaching and Research	Dept of Botany and Microbiology, Maharshi Dayanand Saraswati University, Ajmer-305009, Rajasthan
2006-2007 (Sept.-Jan.)	Pure Teaching	Deptt of Microbiology, Gyan Vihar University, Jaipur
2007-2011	Pure Research	Lab of Prof. S. Mahadevan, MRDG, Indian Institute of Science, Bangalore-560012, Karnataka
2011-	Teaching and Research	Deptt of Microbiology, Academic Block, Maharaja Ganga Singh University, Bikaner-334001

INCO-DEV* International Cooperation for Developing Countries (Germany, Spain, Nepal and INDIA)

Research Projects and Grants:

S. No.	Title	Grant Period	Cost (In lakhs)	Funding Agency
1	Minor Projects			
	I. Microbial diversity of desert varnish/rock varnish commonly grown on desert rocks, ancient buildings, forts and monuments of Bikaner, Rajasthan	BT-71 2012	Minor	DST-Rajasthan
	II. Screening of infectious microbial community in vegetables & fruits commonly available in the fruit market of Kote gate Bikaner	BT-76 2012	Minor	DST-Rajasthan
	III. Engineering of highly competitive pro-biotic strain/s from milk and milk products to prepare cheap pro-biotic^{sp} supplement pouches for the improvement of gut health	Sanctioned	Minor	DST-Rajasthan
	IV. Isolation, Phenotypic and Molecular Characterization of Rare Thermophilic Actinomycetes Bacteria from	Communicated	1 Lac	DST-Rajasthan

	Thar Desert Region in Rajasthan v. Isolation, phenotypic and molecular characterization of rhizobial strains nodulating three leading legume crops namely chickpea (<i>Cicer arietinum</i>), pea (<i>Pisum sativum</i>) and groundnut (<i>Arachis hypogaea</i>) commonly grown in Bikaner region	Communicated	1 Lac	DST-Rajasthan
2	Major Projects I. Global analysis of protein profiles of Bgl ⁻ and Bgl ⁺ strains to identify putative downstream target genes regulated by the <i>bgl</i> operon of <i>E. coli</i> II. Cell to cell contact is necessary for the growth advantage in stationary phase (GASP) phenotype conferred by the activation of the <i>bgl</i> operon of <i>Escherichia coli</i>	2007-2011*	Completed	DBT, India
		2007-2011*	Completed	DBT, India *As a DBT-RA III
3	Major Projects Isolation, Characterization and Screening of Rare Thermophilic Actinomycetes and Fungi Producing Novel Anti-Microbials from Thar Desert Soils	Under Consideration	~28.50 Lacs	DST-New Delhi, India

Publications:

I. Books published:

A. Authored:	In Preparation
B. Edited:	<p>Edited Chapters in Books</p> <p>2009</p> <p><i>In Biotechnology of Agricultural Microorganisms - An Agro-industry Approach.</i> Tripartite Symbiotic Association: Legume-Rhizobia-Mycorrhiza - A Review. Harwani, D., Choudhary, P., Dhaker, S., Prasad, K. and Mahna, S.K. 2006. D.K. Maheshwari and R.C. Dubey (eds.), , I. K. International Pvt. Ltd. New Delhi, India, pp. 406-435. (<i>Google Books</i>) ISBN: 93-80026-53-4</p>

	<p>2005</p> <p>Screening of efficient <i>Bradyrhizobium japonicum</i> strains for the improvement of soybean production. Mahna, S.K., Meghvansi, M.K., Prasad, K., Harwani, D. and Werner, D. In: G. Bagyanarayana, B. Bhadraiah and I.K. Kunwar (eds.), <i>Emerging Trends in Mycology, Plant Pathology and Microbial Biotechnology</i>. B.S. Publications, Hyderabad, India, pp. 282-292. ISBN: 8178000814.</p>
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II. Research Papers Published:

<p>A. International Journals:</p>	<p>2014</p> <p>Regulation of Gene Expression: Cryptic β-glucoside (<i>bgl</i>) Operon of <i>Escherichia coli</i> as a Paradigm. Harwani, D. <i>Brazilian Journal of Microbiology</i> (Accepted)</p> <p>2014</p> <p>Clustering Trend Predictions using Evolutionary k-means Algorithm for Automated Clustering Lakhani, J. and Harwani, D. <i>International Journal of Knowledge Based Computer System</i> 1: 33-36. ISSN Number: 2321-5623</p> <p>2013</p> <p>Biodiversity of rare thermophilic actinomycetes in the great Indian Thar Desert: An Overview. Harwani, D. <i>Indo American Journal of Pharmaceutical Research</i> 3:9349-9356. ISSN 2231-6876</p> <p>2013</p> <p>Recent advances in culturing the unculturable bacteria. Harwani, D. <i>International Journal of Recent Scientific Research</i> 4:1488-1491. ISSN: 0976-3031</p> <p>2013</p> <p>The great plate count anomaly and the unculturable bacteria. Harwani, D. <i>International Journal of Scientific Research</i> 2:350-51. ISSN 2277-8179</p> <p>2013</p> <p>Bacteria eating pollution and generating electricity. Harwani, D. <i>International Journal of Pharma and Bio Sciences</i> 4:996-1002. ISSN 0975-6299</p> <p>2013</p> <p>Bradyrhizobial inoculum production and its efficiency assessment. Harwani, D. In: M. Biyani and M. Sharma (eds), <i>BIOCON International 2013: 8th Biodiversity and their impact on global challenges</i>, Rajasthan, India, pp.137-142. ISBN 978-93-83343-003</p> <p>2013</p> <p>Mycorrhiza: Fungus and plant root symbiosis in the functioning of natural ecosystems. Harwani, D. <i>International Journal of Advanced Scientific and Technical Research</i> 3:358-370 ISSN 2249-9954</p> <p>2012</p> <p>The β-glucoside (<i>bgl</i>) operon of <i>Escherichia coli</i> is involved in the regulation of <i>oppA</i> encoding an oligo-peptide transporter. Harwani, D. and Mahadevan, S. <i>Journal of Bacteriology</i> 194:90-99. (http://jb.asm.org/content/194/1/90) Print ISSN: 0021-9193</p>
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	<p>Online ISSN: 1098-5530</p> <p>2008 Response of soybean cultivars toward inoculation with three arbuscular mycorrhizal fungi and <i>Bradyrhizobium japonicum</i> in the alluvial soil. Meghvansi, M.K, Prasad, K., Harwani, D., Mahna, S.K. and Werner, D. <i>European journal of soil biology</i> 44: 316-323 (http://www.elsevier.com/locate/ejsobi) ISSN: 1164-5563.</p> <p>2004 Efficiency of Bradyrhizobia in different soybean cultivars in pots filled in with rhizospheric soils of soybean/ non-legume cultivated land. Mahna, S.K., Prasad, K., Meghvansi, M.K. and Harwani, D. and Werner, D. In: A. Hartman, M. Schmid, W. Wenzel and Ph. Hinsinger (eds.), Rhizosphere 2004-Perespectives and Challenges-a Tribute to Lorenz Hiltner. Munich, Germany, p.286</p>
B. National Journals:	<p>2006 Stimulatory effect of adonitol on the redifferentiation potential of soybean root nodules bacteroids. Harwani, D., Meghvansi, M.K, Prasad, K., Mahna, S.K. and Werner, D. <i>Current Science</i> 90: 1474-1475. (http://www.ias.ac.in/currsci/jun102006/1474.pdf) ISSN: 0011-3891.</p> <p>2006 Distribution of arbuscular mycorrhizal fungi in soybean (<i>Glycine max</i> (L.) Merrill) rhizosphere. Prasad, K., Meghvansi, M.K., Harwani, D., Mahna, S.K. and Werner, D. <i>Mycorrhiza News</i> 17:14-17. (http://mycorrhizae.org.in/files/Jan06.pdf) ISSN: 0970-695X.</p> <p>2005 Synergistic effects of arbuscular mycorrhizal fungi and <i>Bradyrhizobium japonicum</i> on growth, yield and nutrient status of soybean [<i>Glycine max</i> (L.) Merrill]. Prasad, K., Meghvansi, M.K., Harwani, D., Mahna, S.K. and Werner, D. <i>Anusandhan</i> 1:23-29. (www.mdsuajmer.ac.in/)</p>
Visits Abroad:	
<ul style="list-style-type: none"> • Academic Visit to Gothenburg, Sweden (2009) Poster presentation on research work entitled Global Protein Profiles to Identify Downstream target gene regulated by <i>bgl</i> operon of <i>E. coli</i>. in “FEMS 2009- 3rd Congress of European Microbiologists” • Academic Visit to University of Nevada, Las Vegas, USA (2014) Oral presentation on research work entitled “Cell to cell contact is necessary for Growth Advantage in Stationary Phase phenotype (GASP)”. in IJAS-2014, UNLV, Las Vegas, USA Chaired Two Sessions based on Science and Technology at IJAS-2014, UNLV, Las Vegas, USA 	
Research Supervised - Ph.D./M.Phil. (Name of student and title):	
<p>Guide ship has been approved. Scholars are yet to be allotted</p>	

Other activities:

Seminars and Conferences (Participated organized/attended)	Active participation 2014 Cell to Cell Contact is Necessary for the Growth Advantage in Stationary Phase (GASP) Phenotype Conferred by the Activation of the <i>bgl</i> operon of <i>Escherichia coli</i> . Harwani D. “International Journal of Arts and Science: Science and Technology”, University of Nevada, Las Vegas, USA. 2013 Cell to Cell Contact is Necessary for the Growth Advantage in Stationary Phase (GASP) Phenotype Conferred by the Activation of the <i>bgl</i> operon of <i>Escherichia coli</i> . Harwani D. “20th Biennial Evergreen International Phage Meeting – Aug. 4-9, 2013 The Evergreen State College, Olympia, WA 98505, USA. Sections VII & VIII: Proteomics, Genomics and Molecular Mechanisms, p-122. 2013 A possible mechanism by which <i>oppA</i> an oligo-peptide transporter confers a competitive advantage to <i>E. coli</i> cells having activated <i>Bgl</i> operon. Harwani D. “National Conference on Biodiversity Conservation: Embracing Our Future, Preserving Our Past” Jaipur, Rajasthan, 27 Sep. p-24. 2013 Bradyrhizobial Inoculum Production and Its Efficiency Assessment. Harwani D. BIOCON 2013: International Conference on Agro-biodiversity and their impact on global challenges. Biyani College, Jaipur, Rajasthan, 23 Sept. pp.137-142. 2013 Putative Downstream Target Genes Regulated by the Cryptic <i>Bgl</i> Operon of <i>E. Coli</i> . Harwani D. UGC sponsored National Conference on Environmental Issues, Toxicology and Exposure Science, Agarwal College, Jaipur, Rajasthan, 21 Sept. p-74. 2013 Technology Transfer in Nano Science and Technology. Research to Product Awareness Workshop. Nano-Medicine and Nano-Therapeutics, 20 June, Dept of Biotechnology, Madurai Kamaraj University, Madurai, Tamilnadu. 2013 Organized two day’s Workshop “Field functionaries/Extension offices on organic farming” at the department of Microbiology, Maharaja Ganga Singh University under the auspices of “National Center of Organic Farming” Ghaziabad on 30-31 January, 2013. 2013 (Best Poster Award) Regulation of Gene Expression: β -glucoside (<i>bgl</i>) Operon of <i>Escherichia coli</i> as a Paradigm. Harwani, D. “UGC Sponsored National Conference on Biotechnology”,
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Mahila P.G. College, Jodhpur, Rajasthan, p. 24.

2012

Organised OPEN DAY cum Exhibition: One day visit open to the students and faculty from various colleges and Institutes of Bikaner to the Microbiology Laboratory, Maharaja Ganga Singh University, Bikaner, Rajasthan on 7 Nov. 2012.

2012

The β -glucoside (*bgl*) operon of *Escherichia coli* is involved in the regulation of *oppA* encoding an oligo-peptide transporter. **Harwani, D.** and Mahadevan, S. "NCOB-2012 National conference on Omics for Biotechnology" Central university of Rajasthan at Kishangarh, Ajmer, Rajasthan, p. 149.

2012

A World of Science and Technology Beyond the English or Within. **Harwani D.** and Lakhani J. "National Symposium on Interrogating New Worlds of English Language Teaching 2012", Bikaner, p. 30.

2011

Microbial fuelling cell (MFC): A bacterial way to clean up nature and produce electricity. **Harwani, D.** "ICAER-2011 – International conference on Advances in Ecological Research", Bikaner, Rajasthan, p.97.

2009

Global analysis of protein profiles of Bgl⁺ and Bgl⁻ strains to identify putative downstream target genes regulated by the *bgl* operon of *E. coli*. **Harwani, D.** and Mahadevan, S. *Proc.* "FEMS 2009- 3rd Congress of European Microbiologists" Gothenburg, Sweden, p. 198.

2008

Centenary Conference Indian Institute of Science, Dec. 2008. Participated in Keynote lectures by Hon'ble Prime Minister Dr Manmohan Singh, Hon'ble Former President Dr. ABJ Abdulkalam, Dr. Sydney Brenner, Dr. Venkatraman Ramakrishnan, Dr. C.N.R. Rao, Dr. K. Kasturirangan, Dr. P. Padamanaban, Dr. M.K. Bhan, Dr. S.K. Brahmachari, Dr. R. Chidambaram, Ms. Kiran Majumdar Shah, Mr. Nandan Nilekani and many popular lectures Bangalore, Karnataka, India

2004

Efficiency of bradyrhizobia in different soybean cultivars in pots filled in with rhizospheric soils of soybean/ non-legume cultivated land. Mahna, S.K., Prasad, K., Meghvansi, M.K., **Harwani, D.** and Werner, D. *Proc.* "Rhizosphere 2004 - Perspectives and Challenges - A Tribute to Lorenz Hiltner" Munich, Germany, p. 135.

2004 (Junior Scientist Award)

Stimulatory effect of three carbon sources on re-differentiation potential of soybean nodulating bacteria. **Harwani, D.,** Meghvansi, M.K., Prasad, K., Werner, D. and

	<p>Mahna, S.K. <i>Proc. International Symposium on “Microbial Diversity: Challenges, Opportunities & Relevance in new Millennium”</i> Jabalpur, India, p. 25.</p> <p>2000</p> <p>Participated Microbiotech 2000. 41st Annual Conference, Association of Microbiologists of India, Nov. 2000. Birla Institute of Scientific Research, Jaipur, Rajasthan, India.</p>
Membership	<ul style="list-style-type: none"> • ASM (American Society of Microbiology), United States of America (ASM MN # 56756547) • TERI (The Energy and Resources Institute), India • AMI (Association of Microbiologist of India)
Awards	<ul style="list-style-type: none"> • Non-ICMR Scientist Travel Award for Academic Visit to USA 2014 • Best Poster Award (First) at UGC Sponsored National Conference on Biotechnology, Jodhpur, India • IAS-SPRF, Indian Academy of Science 2012 • DBT-RA, DBT, Govt. of India Funded Project 2007-2011 • DST-ITG, Gothenburg, Sweden 2009 • UGC-CSIR NET 2003 • DOEACC-“O” Level, New Delhi 2001 • Junior Scientist Award, Microtech 2004-International Symposium, SBAM, Jabalpur • Gold Medalist in Inter School Hockey Tournament at St. Pauls’, Ajmer • Ranked Runner Up MDS Olympiad Table Tennis 2003, MDSU, Ajmer • NCC (2 Raj Naval Wing), First Cadet-March Past, 1992
Refresher/Orientation and Other Courses	<ul style="list-style-type: none"> • Refresher/Orientation and Other Courses • Indian Academy of Science (IAS), Bangalore- Summer Research Fellowship. Cell (Bgl+) to cell (Bgl⁻) contact (cellular signaling) analysis by <u>F</u>luorescent <u>A</u>ctivated <u>C</u>ell <u>S</u>orting (FACS) analysis. Indian Institute of Science, Bangalore, Karnataka, India (May-June 2012) • Indian Academy of Science (IAS) Sponsored Refresher Course- Dept of Biotechnology, Madurai Kamaraj University, Madurai, Tamilnadu, India (15.5.2013-29.5.2013) • Orientation Program (68)- Academic Staff College, Madurai Kamaraj University, Madurai, Tamilnadu, India (30.5.2013-26.6.2013)
	<p style="text-align: center;">Other Academic and Administrative Jobs</p> <ul style="list-style-type: none"> • Coordinator Public Outreach and Extension Cell, MGS University, Bikaner • Pool Officer Flying Squad Examinations, MGS University, Bikaner • PhD Thesis External, Practical Examiner and Paper Setter MDS, Ajmer and MGS, Bikaner Universities <p>Member of CAS, Convocation, Library Committees etc., MGS University, Bikaner.</p>
Others	<ul style="list-style-type: none"> • Mentored 3 summer research fellows during 2007-2011 and 2012 at Mahadevan’s Lab, IISc, Bangalore • Audited Course Work Classical and Molecular Genetics by of Prof. S. Mahadevan in IISc, Bangalore • Research Co-ordinator, Microbiology and Biotechnology, Gyan Vihar University • Assisted in Coordinating Small Teachers and Doctoral Students Training Program in <i>Rhizobium</i> Technology • Technology Transfer of Bradyrhizobial Bacterial Bio-fertilizers Production from INCO-DEV Laboratory at MDS University, Ajmer to the Farmers’ Fields in Kota, Bhundi and Baran Regions of

Rajasthan.

Project Reports

2012

Indian Academy of Science (IAS) SPRF-2012 (8 weeks) (LFT-86-Teacher) Cell to cell contact is necessary for the growth advantage in stationary phase (GASP) phenotype conferred by the activation of the *bgl* operon of *Escherichia coli* Worked as a Research fellow with Prof. V. Nanjundiah and Prof. S. Mahadevan, MRDG at Indian Institute of Science, Malleshwaram Bangalore-560012

2011

DBT (Department of Biotechnology), India (2007-2011) reports on two projects entitled “Global analysis of protein profiles of Bgl⁻ and Bgl⁺ strains to identify putative downstream target genes regulated by the *bgl* operon of *E. coli*” and “Cell to cell contact is necessary for the growth advantage in stationary phase (GASP) phenotype conferred by the activation of the *bgl* operon of *Escherichia coli* ” (Worked as a DBT–PDF/RA-III with Prof. Mahadevan, MRDG at Indian Institute of Science, Malleshwaram Bangalore-560012)

2006

INCO DEV (International Cooperation for developing countries), International Scientific Cooperation Project (Germany, Spain, Nepal and India), “Soybean Biological Nitrogen Fixation (BNF) and Mycorrhization for Improved Production in South Asia” Contract number: ICA4-CT- 2001-10057. (Worked as a team member) http://www.staff.unimarburg.de/~werner/INCO_DEV.html