




University Faculty Details Page on DU Web-site

Title	Prof.	First Name	Manchi-katla	Last Name	Venkat RAJAM	Photograph
Designation		Professor				
Department		Department of Genetics				
Address		University of Delhi, South Campus, Benito Juarez Marg, DhaulaKuan, New Delhi 110021				
Phone No Office		24110866 (Off); 25075497 (Res)				
Residence						
Mobile		9818108515				
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Email		rajam.mv@gmail.com ; venkat.rajam@south.du.ac.in				
Web-Page		--				
Educational						
Subject	Institution	Year	Details			
Ph. D (Botany)	Kakatiya University	1983	Thesis topic: Mutagenic Studies on Certain Varieties of Chilli (<i>Capsicum annuum</i> L.)			
M. Sc. (Botany)	Kakatiya University	1979	Subjects: BOTANY ; Specialization: Genetics and Cytogenetics			
B. Sc. (Bot., Zool. & Chem.)	Osmania University	1977	Subjects: Botany, Zoology and Chemistry			
Career Profile						
Organization / Institution	Designation	Duration	Role			
University of Delhi, South Campus	Professor	2006 – Till date	Teaching and Research			
University of Delhi, South Campus	Reader	1998 – 2006	Teaching and Research			
University of Delhi, South Campus	Lecturer	1987 – 1998	Teaching and Research			
I.C.G.E.B., New Delhi	DBT National Associate	1994 (6 months)	Research			
Kakatiya University, Warangal	Scientist Pool (CSIR)	1986 – 1987	Research			
Yale University, New Haven, USA	Post-Doctoral Fellow	1984 – 1985	Research			
Kakatiya University, Warangal	Post-Doc. Fellow (CSIR)	1983 – 1984	Research			
Research Interests / Specialization						
<p>Plant Genetic Engineering and RNAi – Development of Crop Plants for Disease and Pest Resistance as well as Improvement of Other Agronomic Traits Using RNA and micro RNA interference Strategies</p>						
Teaching Experience (Subject / Courses Taught)						



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32 Years of Teaching Experience

Subjects/Courses Taught: Plant Biotechnology, RNAi: Biology & Applications; Plant Breeding, Concepts of Genetics, Cytogenetics & Genome Organization

Honors & Awards

- ❖ Fellow of The Indian National Science Academy, (FNA, New Delhi)
- ❖ Fellow of The National Academy of Sciences, India (FNASc - Allahabad)
- ❖ Fellow of The National Academy of Agricultural Sciences, India (FNAAS - New Delhi)
- ❖ Fellow of The Telangana State Academy of Sciences (FTSAS - Hyderabad)
- ❖ Fellow of The Association of Biotechnology and Pharmacy (FABAP – Guntur, AP)
- ❖ Elected Member, Plant Tissue Culture and Biotechnology Association (India) since 1995 and life member of many other learned societies like Indian Science Congress and Indian Society for Cell Biology.
- ❖ Award of The Rockefeller Foundation Biotech Career Fellowship - 1998 (could not be availed)
- ❖ Award of 'Shiksha Rattan Puraskar' by the India International Friendship Society New Delhi 2011
- ❖ Delivered 'Steward Memorial Lecture', PTCA Annual Meeting held at Mangalore, 2015
- ❖ Department of Biotechnology National Associateship - 1994
- ❖ National Scholarship for Study Abroad (Govt. of India) - 1984
- ❖ Special Award in Research, Rotary International Club of Hyderabad - 1985
- ❖ Award of CSIR JRF (1979-81), SRF (1981-83), PDF (1983) & Pool Officership (1986-87)
- ❖ Served as a member of the Task Force Committee on RNAi Technology of the DBT (Govt. of India), New Delhi
- ❖ Served as a member of the Special Committee of the School of Life Sciences, JNU
- ❖ Served as a member of Advisory Board, Institute of Forest Genetics and Tree Breeding, Coimbatore
- ❖ Member, Advisory Board for M. Sc. Biotechnology course, Kakatiya University
- ❖ Member of the Advisory Committee of the 'BejoSheetal Bioscience Foundation', Jalna, MR.
- ❖ Member (Expert), IBSC, ICGEB, and IBSC (DBT nominee), JNU, New Delhi
- ❖ Associate Editor, BMC Biotechnol. (UK) & Physiol. Mol. Biol. Plants (Springer)
- ❖ Editorial Board member, Cell Dev. Biol. (OMICS group of journal) & Indian J. Biotechnol.
- ❖ Editor, Plant Cell Biotech. Mol. Biol., & Consultant Editor, Indian J. Plant Physiol.
- ❖ Served as a Convenor, Editor & Author of CBSE Class XI & XII Biotechnology Text Books & Lab Manuals
- ❖ Referee for number of Foreign and Indian scientific journals like Sci. Rep., Molecular Biotechnol., Physiol. Plant., Sci. Hort., New Phytol., Plant Cell Rep., J. Biosci., Curr. Sci., J. Plant Biol., Indian J. Plant Physiol., Indian J. Exp. Biol., Indian J. Biochem. Biotechnol., Physiol. Mol. Biol. Plants, Plant Cell Biotech. Mol. Biol., & Indian J. Biotech.
- ❖ Chaired/Co-Chaired sessions in several national symposia and seminars, and SOL2009 international conference. Also, organized several national and international conferences.

RESEARCH GUIDANCE:

No. of Ph. Ds	:	36 Completed
		7 Working
No. of M. Phils	:	10 Completed ; 1 Working
No. of M. Sc. Dissertations	:	11 Completed



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No. of PDFs & Visiting Scientists: 26 Completed ; 1 Working

No. of Trainees : ~ 200

(mainly summer trainees)

I. Research papers published in Refereed/Peer Reviewed Journals: (LAST FIVE YEARS)

1. Tetorya M & **Rajam MV**. 2018. RNA silencing of PEX6 gene causes decrease in pigmentation, sporulation and pathogenicity of *Fusariumoxysporum*. **Plant Pathol.** Doi: 10.1111/ppa.12712 (**Impact Factor 2.383**).
2. Pareek M & **Rajam MV**. 2017. RNAi-mediated silencing of MAP kinase signalling genes (*Fmk1*, *Hog1* and *Pbs2*) in *Fusariumoxysporum* reduces pathogenesis on tomato plants. **Fungal Biol.** (**Impact Factor 2.244**).
3. Ami Choubey & **Rajam MV**. 2017. Transcriptome response and developmental implications of RNAi-mediated ODC knockdown in tobacco. **Funct. Integr. Genomics** DOI 10.1007/s10142-016-0539-3 (**Impact Factor 2.265**).
4. Israni B & **Rajam MV**. 2017. Silencing of ecdysone receptor, insect intestinal mucin and sericotropin genes by bacterially produced double stranded RNA affects larval growth and development in *Plutellaxylostella* and *Helicoverpaarmigera*. **Insect Molecular Biology**. doi: 10.1111/imb.12277 (**Impact Factor 2.866**).
5. Upadhyay A, Kochar M, **Rajam MV** & Srivastava S. 2017. Unraveling the role of exopolysaccharides in Zinc biosorption by fluorescent *Pseudomonas* strain Psd. **Frontiers in Microbiology**. 8:284 doi 10.3389/fmicb.2017.00284 (**Impact Factor: 4.165**).
6. Upadhyay A, Kochar M, Upadhyay A, Tripathy S, **Rajam MV** & Srivastava S. 2017. Small RNAs regulate the biocontrol property of fluorescent *Pseudomonas* strain Psd. **Microbiol. Res.** 196: 80-88 (**Impact Factor: 2.723**).
7. John R, Ganeshan U, Singh BN, Kaul T, Reddy MK, Sopory SK & **Rajam MV**. 2016. Over-expression of Topoisomerase II enhances salt stress tolerance in tobacco. **Frontiers Plant Sci.** 7: 1-9 (**Impact Factor: 4.495**).
8. Yogindran S & **Rajam MV**. 2016. Artificial miRNA-mediated silencing of ecdysone receptor (*EcR*) affects larval development and oogenesis in *Helicoverpaarmigera*. **Insect Biochem. Mol. Biol.** 77: 21-30 (**Impact Factor: 3.767**).
9. Koul A, Yogindran S, Sharma D, Kaul S, Rajam MV & Dhar MK. 2016. Carotenoid profiling, *insilico* analysis and transcript profiling of miRNAs targeting carotenoid biosynthetic pathway genes in different developmental tissues of tomato. **Plant Physiol. Biochem.** 108: 412-421 (**Impact Factor: 2.830**).
10. Mamta, Reddy KRK & **Rajam MV**. 2016. Targeting chitinase gene of *Helicoverpaarmigera* by host-induced RNA interference confers insect resistance in tobacco and tomato. **Plant Mol. Biol.** 90: 281-292. DOI 10.1007/s11103-015-0414-y (**Impact Factor: 4.257**).
11. Pandey R, Gupta A, Chowdhary A, Pal RK & **M. V. Rajam**. 2015. Over-expression of mouse ornithine decarboxylase gene under the control of fruit-specific promoter enhances fruit quality in tomato. **Plant Mol. Biol.** 87: 249-260. DOI 10.1007/s11103-014-0273-y (**Impact Factor: 4.257**).
12. Gupta ED, Pachauri M, Ghosh PC & **Rajam MV**. 2015. Targeting polyamine biosynthetic pathway through RNAi causes the abrogation of MCF7 breast cancer cell line. **Tumor Biol.** DOI 10.1007/s13277-015-3912-2 (**Impact Factor: 3.611**).
13. Bhauso TD, Radhakrishnan T, Kumar A, Mishra GP, Dobarra JR, Patel K & **Rajam MV**. 2015. Overexpression of bacterial *mtlD* gene in peanut improves drought tolerance through accumulation of mannitol. **Sci. World J.** 2014: doi.org/10.1155/2014/125967 (**Impact Factor: 1.500**).
14. Singh D, Haicour R, Sihachakr D & **Rajam MV**. 2015. Expression of rice chitinase gene in



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- transgenic eggplant confers resistance to fungal wilts. **Indian J. Biotechnol.** 14: 233-240(**Impact Factor: 0.500**).
15. Singh D, Ambroise A, Haicour R, Sihachakr D &**Rajam MV. 2014.** Increased resistance to fungal wilts in transgenic eggplant expressing alfalfa glucanase gene. **Physiol. Mol. Biol. Plants**20:143-50DOI: 10.1007/s12298-014-0225-7 (**Impact Factor: 1.300**)
 16. Madhulatha P, Aarti Gupta, Saaraj Gupta, Anuj Kumar, Pal RK &**Rajam MV. 2014.** Fruit-specific over-expression of human S-adenosylmethionine decarboxylase gene results in polyamine accumulation and affects diverse aspects of tomato fruit development and quality. **J. Plant Biochem. Biotechnol.** **23: 151-160.** DOI: 10.1007/s 13562-013-0194-x (**Impact Factor: 0.810**).
 17. Natarajaswamy K, Naorem A &**Rajam MV. 2013.** Targeting fungal genes by diced siRNAs: A rapid tool to decipher gene function in *Aspergillusnidulans*. **PLoS ONE** 8 (10): e75443 (**Impact Factor: 3.534**).
 18. Sinha R &**Rajam MV. 2013.**RNAi silencing of three homologues of S-adenosylmethionine decarboxylase gene in tapetal tissue of tomato results in male sterility. **Plant Mol. Biol.** 82: 169-180 DOI10.1007/s11103-013-0051-2(**Impact Factor: 4.072**).
 19. Aarti Gupta, Pal RK &**Rajam MV. 2013.** Delayed ripening and improved fruit processing quality in tomato by RNAi-mediated silencing of three homologs of ACC synthase gene. **J. Plant Physiol.** 170: 987-995 (**Impact Factor: 3.065**).
 20. Rajanarendar E, Govardhan Reddy K, Rama Krishna S, Shireesha B, Reddy YN &**Rajam MV2013.** Design, synthesis, antimicrobial, anti-inflammatory, and analgesic activity of novel dihydrobenzofuro[3,2-e]isoxazolo[4,5-b] azepin-5(5aH)-ones. **Med. Chem. Res.** 22: 6143-6153 (**Impact Factor: 1.612**).
 21. PiyushChandna, Saaraj Gupta, **Rajam MV**&Kuhad R. **2013.** Molecular identification and in vitro screening of antagonistic bacteria from agricultural byproduct compost: Effect of compost on development and photosynthetic efficiency of tomato plant. **Ann. Microbiol.**DOI 10.1007/s13213-013-0690-1 (**Impact Factor: 1.039**).
 22. Gupta B &**Rajam MV. 2013.** Marker-free transgenic tomato with engineered mannitol accumulation confers tolerance to multiple abiotic stresses. **OMICS Journal: Cell Dev. Biol.** 2 (2) 1000113 (Invited Article).
 23. Singh N &**Rajam MV. 2013.** A simple and rapid glass bead transformation method for a filamentous fungus *Fusariumoxysporum*. **OMICS Journal: Cell Dev. Biol.** 2 (2) 1000115 (Invited Article).
 24. Nandy S, Sinha R &**Rajam MV. 2013.** Over-expression of arginine decarboxylase gene in tapetal tissue results in male sterility in tomato plants. **OMICS Journal: Cell Dev. Biol.** 2 (2) 1000117 (Invited Article).
 25. Rajanarendar E, Nagi Reddy M, Rama Krishna S, Rama Murthy K, Reddy YN &**Rajam MV. 2012.** Design, synthesis, antimicrobial, anti-inflammatory and analgesic activity of novel isoxazolylpyrimido[4,5,b]quinolines and isoxazolylchrommeno[2,3-d]pyrimidin-4-ones. **European J. Med. Chem.** 55: 273-283 (**Impact Factor: 3.432**).
 26. Rajanarendar E, Nagi Reddy M, Rama Krishna S, Govardhan Reddy K. Reddy YN &**Rajam MV. 2012.** Design, synthesis, *invitro* antimicrobial and anticancer activity of novel methylenebis-isoxazolo[4,5-b]azepinesderivates. **European J. Med. Chem.** 50: 344-349 (**Impact Factor: 3.432**).

II. Other than refereed /Peer Reviewed Journals

Nil

Books

Co-Editor of two volume book entitled “Plant Biology and Biotechnology”, published by Springer India - 2015



Conference Presentations (last five years)

1. 39th Annual Meeting of Plant Tissue Culture Association (India) and National Symposium on Plant Biotechnology, Arid Forest Research Institute, Jodhpur, February 16-18, 2018.
2. International Congress of Cell Biology (ICCB-2018), CCMB, Hyderabad, January 27-31, 2018.
3. International Conference on Innovations in Pharma and Biopharma Industry (ICIPBI-2017), University of Hyderabad, Hyderabad, December 20-22, 2017.
4. National Conference on Harmony with Nature in Context of Environmental Issues and Challenges (Harmony-2017), Kakatiya University, Warangal, Telangana. December 21-23, 2017.
5. 38th Annual Meeting of the Plant Tissue Culture Association (India) and National Symposium on 'Plant Biotechnology: Current Perspectives on Medicinal and Crop Plants', Indian Institute of Chemical Biology, Kolkata. March 3-5, 2017
6. National Seminar on 'Genetically Modified Food and Food Security (GMFFS) – 2017, Shree M. and N. Virani Science College, Rajkot, February 10-11, 2017
7. International Symposium on 'Plant Biotechnology for Crop Improvement', Indian Institute of Technology Guwati, Guwati. January 20-22, 2017
8. VIROCON 2016 and International Conference on "Global Perspectives in Virus Disease Management", ICAR-Indian Institute of Horticultural Research, Bengaluru, December 7-10, 2016.
9. International Conference on 'Environmental Conservation and Human Health: Challenges and Strategies and 10th Annual Convention of the Association of Biotechnology and Pharmacy. Sri Venkateswara University, Tirupati, December 21-23, 2016
10. 8th International Geminivirus Symposium & 6th International ssDNA Comparative Virology Workshop, November 7-10, 2016, New Delhi
11. 2nd International Conference on Plant Genetics & Genomics – AgriGenomics India, New Delhi August 19-20, 2016
12. National Conference on Recent Advances in Biological Sciences, Biotechnology & Sustainable Development, March 18-19, 2016, Mohanlal Sukhadia University, Udaipur.
13. 37th Annual Meeting of PTCA (I) and a National Symposium on 'Plant Biotechnology for Crop Improvement', 25th-27th February 2016, at CSIR-NBRI, Lucknow.
14. International Conference on 'Emerging Biotechnologies', January 28-30, 2016, Kakatiya University, Warangal.
15. 8th RNA Group Meet at the Centre for Cellular and Molecular Biology (CCMB) during 8th-10th January 2016.
16. 3rd International Plant Physiology Congress, *Challenges and Strategies in Plant Biology Research* School of Life Sciences, Jawaharlal Nehru University, New Delhi. December 11-14, 2015
17. 18th Convention of the Association for DNA Fingerprinting and Other DNA Technologies (ADNAT)-2015 and Symposium 'Genetic Engineering of Agricultural Crops and Livestock: Current Status and Social, Ethical and Regulatory Issues' held during 23rd – 25th February 2015, University of Hyderabad, Hyderabad.
18. 102nd Indian Science Congress – 'Science & Technology for Human Development' and Special Symposium on 'Recent Progress and Future Perspective for Stress Tolerance in Plants', University of Mumbai, Mumbai, January 3-7, 2015.
19. XXXVII Indian Botanical Conference and National Symposium on 'Biodiversity & Climate Change, V. G. Vaze College of Arts, Science & Commerce, Mumbai, November 7-9, 2014.
20. National Seminar on 'Emerging Problems in Potatoes', Central Potato Research Institute, Shimla, November 1-2, 2014.
21. National Seminar on Metal Toxicity and Oxidative Stress, Jamia Millia Islamia, New Delhi.



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September 24, 2014.

22. National Seminar on 'Recent Trends in Plant Science'. Satavahana University, Karimnagar, Telangana. August 22-23, 2014.
23. 35th Annual Meeting of PTCA (India) and National Symposium on 'Advances in Plant Molecular Biology & Biotechnology, IISER, Pune. March 10-12, 2014
24. National Seminar on 'Plant Biotechnology: Challenges and Opportunities in 21st Century', JamiaHamdard, March 3-4, 2014.
25. National Conference on 'Plant Bioresource Management and Biotechnology, University of Rajasthan, January 29-31, 2014.
26. Indraprastha International Conference on Biotechnology, G. B. S. Indraprastha University, New Delhi. October 22-25, 2013.
27. Indo-Mexico Workshop on 'Biotechnology: Beyond Borders, National Chemical Laboratory, Pune. October 7-9, 2013.
28. Symposium on 'Advances in Non-coding Genomics', Institute of Bioinformatics and Applied Biotechnology, Bangalore. September 13-15, 2013.
29. XXXIV Annual Meeting of Plant Tissue Culture Association (India) and National Symposium on 'Plant Tissue Culture & Biotechnology for Food and Nutritional Security', CFTRI, Mysore, March 11-13, 2013.
30. 32nd Convention of Indian Association for Cancer Research, 'Emerging Trends in Cancer Research: Road to Prevention & Cure' & International Symposium on: Infection and Cancer. Dr. B. R. Ambedkar Center for Biomedical Research (ACBR), University of Delhi, Delhi, February 13-16, 2013.
31. International Conference on 'Biotechnology in Human Welfare', Kakatiya University, Warangal, February 7-9, 2013.
32. International Conference on 'Next Revolution in Genetics & Genomics – Applications in Health and Disease, Centre of Medical Genetics, Sir Ganga Ram Hospital, New Delhi, January 27-29, 2013.
33. International Conference on 'Environmental Impact on Human Health and Therapeutic Challenges (ICEHT-2012)' & 6th Annual Convention of Association of Biotechnology and Pharmacy (ABAP), Sri Venkateswara University, Tirupati, December 20-22, 2012.
34. AgTech Global Summit – 2012, BejoSheetal Bio-Science Foundation, Aurangabad, December 9-13, 2012.
35. National Seminar on Current Trends in Secondary Plant Metabolites Research, Hamdard University, New Delhi, March 19-20, 2012.
36. International Conference on Plant Biotechnology for Food Security: New Frontiers. Society for Plant Biochemistry and Biotechnology, National Research Centre on Plant Biotechnology and IARI, New Delhi. February 21-24, 2012.
37. XXXIII Annual Meeting of the Plant Tissue Culture Association (India) and National Symposium on 'Impact of Plant Tissue Culture on Advances in Plant Biology', Loyola Centre for Research & Development and Xt. Xavier's College, Ahmedabad. January 19-21, 2012.

Professional Societies Memberships

- **Plant Tissue Culture and Biotechnology Association, India (Elected Member – Since 1995)**
- **Indian Science Congress Association**
- **Indian Society of Cell Biology**
- **Indian Botanical Society**
- **Indian Society of Plant Biochemistry and Biotechnology**
- **Association for Microbiologists of India**
- **Association of Biotechnology and Pharmacy**

Project (Major/Grants/Collaborations)



ONGOING RESEARCH PROJECTS:

1. **Department of Biotechnology** – Engineering ToLCV resistance in tomato by using single and multiple artificial micro RNAs and synthetic rep gene containing multiple mutations to resist VIGS. September 1, 2014 – September 2, 2019 (**Coordinator & PI: Rajam**)
2. **Department of Biotechnology** – Functional validation of yield related genes. October 27, 2016 – October 26, 2019 (**Team Leader & PI: Rajam**)
3. **Department of Biotechnology** – Development of transgenic cowpea for insect resistance through RNA interference technology, April 1, 2015 – March 31, 2018 (**Co-PI: Rajam MV**)
4. **Jeevanti Welfare and Charitable Trust** – Induction of resin-ducts and production of guggulsterone from cell and callus cultures, and somatic embryos of *Commiphoramukul*, July 2016 – June 2019 (**PI: Rajam MV**)

COMPLETED RESEARCH PROJECTS:

In the last five years:

1. **Department of Biotechnology** – Control of *Colletotrichum* spp. causing anthracnose in chilli and tomato by RNAi Approach, January 1, 2013 – December 31, 2016 (**Co-PI: Rajam MV**)
2. **Indian Council of Agricultural Research** – RNA interference and virus induced gene silencing approaches to enhance drought and heat stress tolerance in soybean, April 2016 – March 2017 (**Co-PI: Rajam MV**)
3. **Department of Biotechnology** – Development of Citrus tristeza Virus Resistant Citrus Plant, March 1, 2012 – Feb 28, 2015, (**Co-PI : Rajam MV**)
4. **Department of Biotechnology (Biotechnology and Industry Partnership Programme with Sri Biotech Laboratory India Ltd, Hyderabad)** – Control of shoot and fruit borer insect pest (*Leucinodes orbonalis* Guenee) in Brinjal through RNA interference. Oct. 2010 – Sept. 2014 (**PI: Rajam MV**)
5. **Department of Science & Technology** – RNAi-mediated silencing of a key polyamine biosynthesis gene, ornithine decarboxylase for the control of fungal pathogens and cancer growth in vitro and in vivo. Oct. 2009 – Oct. 2013, (**PI : Rajam MV**)
6. **Sri Biotech Laboratory India Ltd.** - Development of transgenic tomato resistant to fruit borer (*Helicoverpa armigera*) Through RNA interference. Oct. 2009 – Oct. 2013, (**PI : Rajam MV**)
7. **DU/DST – PURSE GRANT & Bejo Sheetal Seeds Pvt. Ltd.** - Development of insect resistant cauliflower and okra using RNAi strategies – Jan. 2010 – Dec 2013, (**PI : Rajam MV**)
8. **Department of Biotechnology** – Genetic Engineering of Tomato for Fungal Resistance Through RNAi - mediated Suppression of Fungal Ornithine Decarboxylase Gene, Aug. 2008 – Aug. 2012 (including one year extension), (**PI : Rajam MV**)
9. **Department of Biotechnology** – Silencing of Vital Genes (Acetylcholinesterase, ornithine decarboxylase and chitin synthase) of Cotton Bollworm by Plant-mediated RNAi for developing Insect Resistant Transgenic Cotton, Feb. 2009 – Feb. 2012, (**PI : Rajam MV**)