Curriculum Vitae

Dr. M. V. RAJAM, FNA, FNASc, FNAAS, FTSAS
Professor & UGC BSR Faculty Fellow, Department of Genetics
University of Delhi - South Campus
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venkat.rajam@south.du.ac.in

Date of Birth & Age	:	02-02-1955 (67 Years)
Total Research Experience	:	42 Years
Total Teaching Experience	:	35 Years
Fields of Specialization	:	RNA and miRNA interference; Plant Genetic Engineering, Somatic Cell Genetics, Tissue Culture, Polyamine Physiology and Molecular Biology, Cytogenetics and Mutation Breeding
Teaching Subjects/Topics	:	RNAi; Plant Genetic Eng. and Tissue Culture, Genome Organization, Cytogenetics, Genetic Variation, Extranuclear Genetics, Plant Breeding
Total No. of Major Research Projects Handled in the Fields of Plant Biotechnology & RNAi	:	22 Indian Agencies (12 DBT, 4 DST, DRDO CSIR, 2 ICAR, UGC & DU-DST PURSE-Bejo Sheetal Seeds) 2 International Agencies (European Commission & Indo-French) 5 Industrial Organization (2 Dabur Research Foundation, Ankur Seeds Ltd. 1 DBT-BIPP with Sri Biotech Lab; 1 Sri Biotech Pvt. Ltd.
Major On-Going Research Project in the field of CRISPR/Cas9 Gene Editing	:	1 DBT
Evaluation work	:	Evaluated several Ph.D/M.Phil theses, and also Referee for several Intern. & Natl. journals.
Guest of Honour/Invited Lecturers	:	Guest of Honour in few conferences; Several keynote/plenary/invited talks were given in different conferences, and invited lectures in various Refresher Courses/Workshops/Univ./Institutions for University/College/School teachers
No. of Visits Abroad under collaborative research programmes and for attending the international conferences	:	7 (USA, France, Italy, The Netherlands, China, Indonesia, Malaysia)

No. of Conferences/Seminars/ Symposia organized : 15

Refresher courses organized : 1 Refresher Course in Life Sciences - Feb. 25 – Mar. 16, 2013

Research Guiding Experience:

No. of Ph. Ds : 39 Completed
4 Working

No. of M. Phils : 11 Completed

No. of M. Sc. Dissertations : 15 Completed

No. of PDFs & Visiting Scientists: 27 Completed

No. of Trainees : ~150
(Mainly summer trainees, including students Sponsored by three academies)

Research Collaborations : 6 National Organizations
4 International Organizations
4 Industrial Organizations

Scientific Publications (Numbers only):

- Research Articles : 111 (International: 77; National: 34)
- Review Articles : 32
- Book Chapters : 42
- Research Articles in Conf. Proc. : 6
- General/Popular articles : 5
- Communicated papers : 3
- Papers Prepared/Under-Prep. : 4
- Text Book Chapters : 5
  (one unit and four chapters for 10+2 students of CBSE)
- Books : Co-editor of two books of two volumes each book on 'Plant Biology and Biotechnology' (Spriger -2015); GM Crops: Current Status, Prospects and Challenges (Springer - 2021)

Papers/Invited Lecturers Presented at the Symposia/ Seminars/Conferences : 58 International
120 National

Education & Professional Experience:

Mar 2020 – Till date	**UGC BSR Faculty Fellow**, Department of Genetics **University of Delhi South Campus**, New Delhi
May 2006 – 2020	**Professor**, Department of Genetics **University of Delhi South Campus**, New Delhi
May 1998 – 2006	**Reader**, Department of Genetics **University of Delhi South Campus**, New Delhi
Feb 1991 – 1998	**Senior Lecturer**, Department of Genetics **University of Delhi South Campus**
Nov. 1987 – 1991	**Lecturer**, Department of Genetics, **University of Delhi South Campus**

1994 (6 months)	**DBT National Associate**, **ICGEB**, New Delhi
1986 – 1987	**Pool Officer (CSIR),** Department of Botany, **Kakatiya University**, Warangal, AP
1984 – 1985	**Postdoctoral Research Associate**, Department of Biology, Kline Biology Tower, **Yale University, New Havan**, **USA**. Also, worked at the **Boyce Thompson Institute, Cornell University, Ithaca, USA** for a couple of months as a Visiting Research Associate on a Collaborative Project
1983 – 1984	**Postdoctoral Fellow (CSIR),** Department of Botany, **Kakatiya University**, Warangal
1983-84 & 1986-87	**Part-Time Lecturer (Honorary),** Arts & Sci. College and Univ. College, **Kakatiya University**, Waranagal
	Ph. D (Botany – Plant Genetics & Cytogenetics; Thesis Title: "Mutagenic Studies on Certain Varieties of Chilli (*Capsicum annuum* L.)", Kakatiya University, Warangal
1977-79	**M. Sc (Botany – Specialization in Genetics & Cytogenetics; 69.75% marks and Univ. 4th Rank among 33 students), Kakatiya University**, Warangal
1974-77	**B. Sc (Botany, Zoology & Chemistry; 60.88% marks), Arts & Sci. College (Osmania University)**, Warangal

Awards and Honors:

- Fellow of The Indian National Science Academy, New Delhi (FNA) – 2015
- Fellow of The National Academy of Sciences, India – Allahabad (FNASc) - 2007
- Fellow of The National Academy of Agricultural Sciences - New Delhi (FNAAS) - 2012
- Fellow of The Telangana State Academy of Sciences (FTSAS) - 2012
- Fellow of The Association of Biotechnology and Pharmacy, Guntur, AP (FABAP) - 2010
- Delivered 'Steward Memorial Lecture', PTCA (I) during 37th Annual Meeting of PTCA (I), Mangalore, January 29-31, 2015
- Delivered Prof. H. C. Arya Memorial Lecture and received Gold Medal during PTCA(I) meeting held at IIT, Guhawati, 2019
- Served as a member of the Sectional Committee VII on Plant Sciences, INSA – 2017-2019
- Award of The Rockefeller Foundation Biotech Career Fellowship - 1998 (could not be availed)
- Award of 'Shiksha Rattan Puraskar' by the India International Friendship Society, Delhi 2011
- Award of Department of Biotechnology National Associateship - 1994
- Award of the 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)
- International Supervisor for Ph.D student (Ms. Chezlyn) at Durban Univ., Durban, Africa
- 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.
- Served as a member of the Sectional Committee VII on Plant Sciences, INSA – 2017-2019
- Served as a member of the Task Force Committee on RNAi Technology of the DBT (Govt. of India), Delhi
- Member, Academic Committee, ICGEB, New Delhi
- Served as a Member of the 'National Advisory Board' of the "Sir Richard Roberts Centre for Genetically Modified Organism", Amity University, Noida.
- 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 & Tree Breeding, Coimbatore (2012-14)
- Served as a Member, Advisory Board for M. Sc. Biotechnology course, Kakatiya University
- Served as a Member of the Advisory Committee of the 'Bejo Sheetal Bioscience Foundation', Jalna (MR).
- Served as a Member, Scientific Advisory Board, Sri Biotech., Hyderabad
- Served as a Member of Doctoral Committee of the School of Life Sciences, JNU, New Delhi
- Served as a Member of Research Advisory Committee, Centre for Biotechnology, M. D. University, Rohtak

- Served as a Member of Research Advisory Committee, National Bureau of Agriculturally Important Insects (NBAII-ICAR), Bangaluru – 2013-16
- Member, IBSC, ICGEB (External expert), NIPGR (External expert-second time) and JNU (DBT nominee-completed), New Delhi
- Served as a Member, Executive Committee, Aravali & Saramati Boy's Hostels, University of Delhi South Campus
- Served as Associate Editor, BMC Biotechnol. (UK), and Physiol. Mol. Biol. Plants (Springer)
- Corresponding Editor/Editorial Board member, J. Biosci., J. Plant Biochem. Biotechnol., OMICS group journal – Cell & Dev. Biol., Phytomorphology & Indian J. Biotechnol. & Plant Cell Biotech. Mol. Biol.
- Convener, Editor & Author of CBSE Class XI & XII Biotechnology Text Books & Lab Manuals
- Guest of Honor in some conferences, and Chaired/Co-Chaired sessions in several national symposia and seminars, and SOL2009 international conference.

Achievements in the Research Areas of RNA interference, Plant Transgenomics, Tissue Culture, Polyamine Physiology and Molecular Biology, and Mutation Breeding:

Research focus in **Prof. M. V. Rajam** laboratory in the last more than three decades has been on addressing major phenomenon such as abiotic and biotic stresses, excessive fruit ripening and induction of male sterility; and unraveling the role of polyamines in *in vitro* plant regeneration and stress tolerance in crop plants. Development of improved *Agrobacterium*-mediated genetic transformation protocols in crop plants in the early years, and RNAi- and artificial miRNA- mediated silencing in the last decade have been the major tools used in the current research programmes. Significant contributions in these areas of research are summarized below:

- Isolation, characterization and targeting of about 17 vital genes, including Ornithine decarboxylase, Agininosuccinate lyase, MAP kinases, Chorismate synthase, Peroxisomal biogenesis factor 6 and β-1,3-glucanosyltransferse in fungal pathogens (*Fusarium oxysporum* and *Colletotricum gloeosporioides*); and Acetylcholinesterase, Chitinase, Chitin synthase, Ecdysone receptor, Intestinal mucins and Sericotropin in insect pests (*Helicoverpa armigera*, *Leucinodes orbanalis* and *Plutella xylostella*) for their control in tomato/chilli, and tomato/brinjal/cauliflower respectively through host-induced RNAi and artificial miRNAs.
- Development of novel RNAi- and artificial miRNA-based strategies for the control of viruses and insect pests in rice and tomato.
- Development of tomato with delayed ripening and improved fruit quality, and male sterile lines using novel transgenic and RNAi approaches.
- Developed, for the first time, a simple and efficient *Agrobacterium tumefaciens* mediated genetic transformation for *Chlamydomonas reinhardtii*, a single cell alga with major applications in biotechnology.
- Novel demonstration of the enhancement of *Vir* gene induction and T-DNA transfer in *Agrobacterium* by polyamines, and its successful use in improving the transformation efficiencty in brinjal.
- Provided first evidence for the involvement of polyamine biosynthesis gene (*samdc*) and mannitol synthesis gene (*mtlD*) in conferring biotic (fungal pathogens) stress tolerance in transgenic tobacco and brinjal plants.

- ❖ Demonstration of engineered polyamine and mannitol accumulation conferring abiotic stress tolerance in rice, brinjal and peanut.
- ❖ Development of marker-free transgenic tomato through co-transformation method with high transformation frequency for abiotic stress tolerance using *mtlD* gene.
- ❖ Demonstration of the involvement of thaumatin gene in both abiotic and biotic stress tolerance in tobacco.
- ❖ Development of transgenic rice for resistance against Tungro virus using coat-protein and ORF-IV genes of RTBV and RTSV.
- ❖ Development of an efficient and reliable plant regeneration and *Agrobacterium*-mediated genetic transformation for indica rice, eggplant, tomato and red pepper.
- ❖ Deciphering the role of polyamine biosynthetic genes namely Ornithine decarboxylase, Arginine decarboxylase and S-Adenosylmethionine decarboxylase in *in vitro* regeneration, reproduction and abiotic stress tolerance in tobacco by developing over-expressing and RNAi lines.
- ❖ Demonstration of polyamines as important determinants of *in vitro* plant regeneration in rice, brinjal and tomato.
- ❖ Novel demonstration of the restoration of plant regeneration in long-term callus cultures of rice by manipulation of cellular polyamine concentrations and adjusting the ratio between the diamine putrescine and polyamines spermidine and spermine.
- ❖ Development of an efficient protocol for *Agrobacterium*- mediated genetic transformation of *Taxus baccata* callus cultures (Indian Patent granted in 2001 with Dabur Research Foundation).

Current Research Interests in the Areas of RNA and miRNA interference and Plant Transgenomics:

- ♦ RNAi- and/or artificial miRNA-based strategies for the control of an important insect pest, *Helicoverpa armigera* in tomato and *Maruca vitra* cowpea, and abiotic stress tolerance in soybean.
- ♦ Engineering tomato for resistance against an important fungal pathogen (*Alternaria solani*) by targeting vital genes of the fungal pathogen using bi-cistronic artificial miRNAs.
- ♦ Enhancement of rice grain yield by expression of yield-related miRNAs and genes.

Teaching Activity:

- ♦ RNAi: Biology and Applications (Optional Course - introduced by me) – M. Sc. Final Genetics – Teaching since last two years
- ♦ Plant Genetic Engineering and Tissue Culture – M.Sc. Final Genetics, Taught each year. Earlier, I taught Plant Breeding for about 15 years
- ♦ Concepts of Genetics – M.Sc. Previous Genetics, taught for the last 22 years (Course is shared by three faculty and I taught Mutagenesis and Extranuclear Genetics)
- ♦ Cytogenetics and Genomics – M.Sc. Previous Genetics, taught for about 6 years (Course is shared by four faculty and I taught Genome Organization in Prokaryotes and Eukaryotes as well as Organelles, Sex Determination in Plants)
- ♦ Cell Biology and Genetics – M.Sc. previous Environmental Biology, This course was taught for about eight years along with couple of my colleagues – I taught mutagenesis, plant tissue culture, genetic engineering and plant breeding)

Administration experience

- Head, Department of Genetics, University of Delhi South Campus, New Delhi, September 9, 2012 – September 8, 2015
- Member of Academic Council and University Court, University of Delhi South Campus, September 2012-September 2015
- Member, Executive Committee, Aravali and Saramati Boy's hotels, University of Delhi South Campus, 2015-16 and 2016 till date
- Served as a Member of DRC and BRS many times

Invited Lectures Delivered in Refresher Courses/ Workshops/Universities/Institutions/Conferences:

Several lectures were delivered in refresher courses and workshops held at the places like Malacca, Malaysia (in Rice Biotech Conf.) ICGEB, IARI, Osmania University, University of Hyderabad, Thapar University, Kakatiya University and Jai Narain Vyas University, Besides, guest lectures were given for M.Sc. students at several Universities like Universite de Paris Sud XI, Orsay, France, B.H.U., M. D. University, and Kakatia University. Several invited talks were given in many International and National Seminars/Symposia/Conferences. Several lectures were also given in the orientation programmes for University/College and Senior Secondary School Teachers in Delhi and other places.

Research Support:

On-going:

Department of Biotechnology: May, 2019 – April, 2022. CRISPR/Cas9 mediated control of the Geminiviruses involved in Papaya leaf curl disease. Cost: ~ Rs. 55 lakhs (**Co-PI: Rajam MV) (Extension is under-consideration)**

Completed Projects:

1. **Department of Biotechnology:** September 2, 2014 – September 1, 2019, including 2 years of extension. Engineering ToLCV resistance in tomato by using single and multiple artificial micro RNAs and synthetic rep gene containing multiple mutations to resist VIGS. Cost: Rs. 147.45 lakhs (**Coordinator & PI: Rajam MV**)
2. **Department of Biotechnology:** October 19, 2016 – October 18, 2019. Functional validation of yield related genes. Cost: Rs. 37.66 lakhs (**Coordinator & PI: Rajam MV**)
3. **Department of Biotechnology:** April 1, 2015 – March 31, 2018. Development of transgenic cowpea for insect resistance through RNA interference technology. Cost: Rs. 33.47 lakhs (**Co-PI: Rajam MV**)
4. **Jivanti Welfare and Charitable Trust (Dabur):** July 1, 2016 – June 30, 2019. Induction of resin-ducts and production of guggulsterone from cell and callus cultures, and somatic embryos of *Commiphora mukul*. Cost: Rs. 16.44 lakhs (**PI: Rajam MV**)
5. ICAR Project Entitled "RNA interference and virus induced gene silencing approaches to enhance drought and heat stress tolerance in soybean"

6. **Department of Biotechnology** – Control of *Colletotrichum* sps. causing anthracnose in chilli and tomato by RNAi Approach, January 1, 2013 – December 31, 2016 **(Co-PI: Rajam MV)**
7. **Department of Biotechnology** – Development of Citrus triesteza Virus Resistant Citrus Plant, March 1, 2012 – Feb 28, 2015, **(Co-PI : Rajam MV)**
8. **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**)

9. **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**)
10. **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**)
11. **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**)
12. **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)**
13. **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)**
14. **Department of Biotechnology** – Analysis of Fruit Characteristics, Expression Profile of Ripening Genes and Limited Open Field Trials of Tomato Transgenics Over-Expressing Polyamine Biosynthesis Genes **(June 2007 – May 2010, including one year extension)**
15. **Department of Biotechnology** – Development of Efficient Plant Regeneration and *Agrobacterium*- Mediated Genetic Transformation Protocols for Citrus sp. And Production of Citrus Transgenics for Virus Resistance **(Sept. 2006 – Aug. 2010)**
16. **Department of Science and Technology** - Gene Pyramiding in Transgenic Tomato for Disease Resistance (**May, 2004-May, 2007**)
17. **Defense Research Development Organization –** Engineering cold tolerance in vegetable crops in Himalayan region **(July, 2003 – Jan. 2007)**
18. **Department of Biotechnology** – Genetic Engineering for Retardation of Fruit Ripening and Increased Shelf Life in Tomato (*Lycopersicum esculentum* L.) **(Dec. 2002 – Dec. 2005)**
19. **Monsanto India Ltd. –** DNA Fingerprinting of Cotton Hybrids **(Feb. – April 2006)**
20. **Department of Biotechnology** – Plant Regeneration and *Agrobacterium* Mediated Transformation of Selected Genotypes of Indica Rice **(June 1999 – Dec. 2004)**
21. **Ankur Seeds Ltd**. – Control of Fungal Plant Dieseases by Using Substrate-Based Polyamine Biosynthesis Inhibitors **(June 2001 – May 2004)**
22. **European Commission** – Production of Valuable Breeding Material of Eggplant (*Solanum melongena* L.) Resistant to Fungal and Bacterial Wilts, and Root Knot Nematodes by using Protoplast Fusion. **(Nov 1997 - Oct 2001)** (Six Contractors Sihachakr D (Co-ordiantor), France ; Rotino GL, Italy ; Christine MD, France; Baiquing L, China; **Rajam MV**, India and Ika MSS, Indonesia)
23. **Indian Council of Agricultural Research** – Development of Efficient Plant Regeneration Protocols in Different Genotypes of Indica Rice (*Oryza sativa* L.) **(Sept '1998 - Aug '2001)**
24. **Dabur Research Foundation** - Genetics Transformation of *Taxus spp*. **(Aug 1999 - July 2001)**
25. **Indo–French** – Genetic Engineering of Eggplant for Disease Resistance **(April 1998 - May 2001)** (**P.Is - Rajam MV,** India and Sihachakr D, France)
26. **Department of Biotechnology** – Development of Eggplant Transgenic Plants to Abiotic Stresses by Metabolic Engineering of Polyamine Biosynthesis **(Nov 1997 – Mar. '2001)**
27. **Department of Science and Technology** – Genetic Manipulation of Polyamine and Carbohydrate Metabolism for Osmotic Stress Tolerance in Rice and Eggplant **(Nov 1997 - Oct 2000)**
28. **Department of Science and Technology** – Polyamine Biosynthesis and Regulation of Development and Differentiation (Somatic Embryogenesis) in *In Vitro* Cultures of Eggplant (*Solanum melongena* L.) **(Sept 1993 – Sept 1997)**
29. **University Grants Commission** – Role of Polyamines in the Production of Virus-Free Plants of Red Pepper (*Capsicum spp.*) and Its Regeneration from Callus Cultures via Organogenesis and Somatic Embryogenesis **(Apr 1992 – Mar 1995)**
30. **Council of Scientific and Industrial Research** - Protection of Crop Plants from Phytopathogenic Fungi through Inhibition of Polyamine Biosynthesis **(Dec 1988 – Dec 1992)**

Graduate Students Trained/ Working:

Ph.D

Completed

1. **Sambhavana Chauhan – 2022** Characterization of *Fusarium oxysporum* f. sp. *lycopersici* specific fasciclin-like proteins (FoFLPs) in fungal virulence and development of transgenic tomato resistant to Fusarium wilt (Submitted)
2. **Shipra Saxena - 2021** Development of Transgenic Brinjal (*Solanum melongena* L.) Resistant to Shoot and Fruit Borer Insect Pest (*Leucinodes orbonalis* Guenee) by Using RNAi Strategy
3. **Mahak Sachdev – 2020** Host plant induced RNA silencing of argininosuccinate lyase gene of *Fusarium oxysporum* for resistance against Fusarium wilt in tomato
4. **Sneha Yogindran - 2019** Engineering of tomato for insect resistance by micro RNA interference.
5. **Meenakshi Tetoria - 2018** Development of Tomato Plants for Fungal Resistance by RNA interference
6. **Manish Pareek - 2017** Development of tomato for fungal resistance through RNA and micro RNA interference
7. **Bhawna Israni - 2017** Development of Insect Resistant Cauliflower by RNAi-mediated Knock-down of Important Genes of *Plutella xylostella*
8. **Anamika Upadhyay - 2016** Mechanisms of Zinc Management in Plant Growth Promoting Fluorescent *Pseudomonas* Strains: Psd and PfT-1
9. **Anjali Jaiwal - 2016** Insect resistance in transgenic cotton by plant-mediated RNAi silencing of vital genes of the target insect pest (*Helicoverpa armigera*)
10. **Ami Chaubey - 2016** Functional analysis of polyamines in tobacco by RNAi-mediated down-regulation of polyamine biosynthesis genes
11. **Mamta Koushik - 2015**. Silencing of Chitinase and Cathepsin L Genes in *Helicoverpa armigera* by Host-induced RNAi for Insect Resistance in Tobacco and Tomato
12. **Tamilarasan S - 2014**. RNAi knockdown of acetylcholinesterase gene of *Meloidogyne incognita* for nematode resistance in tobacco and tomato
13. **Ena Dogra (jointly with Prof. P. C. Ghosh, Deptt. of Biochemistry, Univ. of Delhi South Campus) - 2012**. RNAi-mediated silencing of polyamine biosynthesis genes for control of growth of breast and oral cancer cell lines
14. **Arti Gupta – 2012**. Analysis of Fruit Characteristics in Transgenic Tomatoes with RNAi-mediated Silencing of ACC Synthase Genes and Over-expression of Polyamine Biosynthesis Genes
15. **Ranjita Sinha - 2012**. Engineering male sterility in tomato by RNAi- mediated silencing of S-adenosylmethionine decarboxylase genes in tapetal tissue
16. **Neeru Singh – 2012.** Genetic engineering of tomato for Fusarium wilt resistance by *in plant* RNAi- mediated silencing of fungal ornithine decarboxylase gene
17. **Sandeepa Singh – 2011.** Plant regeneration, *Agrobacterium*-mediated transformation and development of transgenic plants with CTV coat protein genes in *Citrus sinensis*
18. **Maneesh Kumar - 2011**. RNAi- mediated Targeting of Acetylcholinesterase Gene of *Helicoverpa armigera* for Insect Resistance in Transgenic Tobacco and Tomato
19. **Brijesh Gupta - 2010**. Development of Tomato Transgenics for Abiotic Stress Tolerance
20. **Vikash Kumar (jointly with Dr. Sunil K. Mukherjee, ICGEB) - 2010**. Mechanism of suppression (AC2) of RNAi from the geminivirus MYMIV and its use in molecular farming through transgenic routes
21. **Pranjal J. Hazarika - 2009**. Development of Transgenic Tomato for Resistance against Fungal Pathogens
22. **Ashwin R. Kashikar - 2007.** Genetic Manipulation of Lipoxygenase Pathway and Its Implications in Fungal Resistance in Transgenic Tomato Plants
23. **Roopali Pandey - 2007.** Transgenic Tomato for Improved Fruit Characteristics through Genetic Manipulation of Polyamine Biosynthesis
24. **Madhulatha P - 2006.** Genetic Modification of Polyamine Metabolism in Tomato for Delayed Ripening and Increased Shelf Life of Fruits

25. **Uma G (jointly with Prof. Indranil Dasgupta, Deptt. of Plant Molecular Biology, Univ. of Delhi South Campus) - 2006**. Development of Transgenic Rice Plants Resistant to Rice Tungro Virus
26. **Shivani Singh – 2005**. Development of Eggplant Transgenic Plants for Abiotic Stress Tolerance by Metabolic Engineering of Polyamines
27. **Deepali Singh** – **2005**. Genetic Engineering of Eggplant for Resistance Against Fungal Pathogens
28. **Chezlyn** – **2005.** Plant Regeneration and Transformation in *Brassica* spp. (**International Supervisor, Durban University, Durban, Africa)**
29. **Deepti Pujni - 2004.** Genetic Engineering for Abiotic Stress Tolerance in Indica Rice
30. **Prabhavathi V - 2003**. Pathway Engineering of Mannitol and Polyamines for Abiotic Stress Tolerance in Eggplant (*Solanum melongena* L.)
31. **Vinod Kumar S** – **2003**. Transgenic Manipulation of Polyamine Biosynthesis in *Solanum melongena* and *Chlamydomonas reinhardtii*
32. **Vivek Kashyap** – **2002**. Morphological and Molecular Characterization of Dihaploids Derived from Somatic Hybrids between Wild Species and Cultivated Eggplant (*Solanum melogena* L.)
33. **Bhavna Waie** – **2001**. Genetic Engineering of Polyamine Metabolism for Osmotic Stress Tolerance in Rice and Tobacco
34. **Ratna Kumria** – **2000**. Modulation of Polyamine Biosynthesis, Plant Regeneration and Stress Responses in Transgenic Rice and Tobacco by Introduction of Ornithine Decarboxylase Gene.
35. **Fouzia Shoeb** – **1999**. Regulation of Plant Regeneration by Modulating Cellular Polyamine Levels in Fresh and Long-Term Callus Cultures of Indica Rice (*Oryza sativa* L.)
36. **Jitender Singh Yadav** – **1998**. Polyamines in the Regulation of Somatic Embryogenesis in Eggplant (*Solanum melongena* L.)
37. **Shavindra Bajaj** – **1996**. Role of Polyamines in *in vitro* Plant Regeneration and Stress Responses in Rice (*Oryza sativa* L.)
38. **Bharti** – **1995**. Inhibition of Fungal Polyamine Biosynthesis and Control of Leaf Rust of Wheat (*Triticum aestivum* L.) : Physiological and Cytogenetical Studies in the Host Plant.
39. **Pankaj Sharma** – **1994**. The Role of Polyamines in the Regulation of Growth and Differentiation in *In Vitro* Cultures of Eggplant (*Solanum melongena* L.)

Working

1. **Aparajita Chaudhury** – Host induced silencing of *Maruca vitrata* genes for insect resistance in cowpea (*Vigna unquiculata*)
2. **Ruby Tiwari** - RNA interference based strategies for engineering abiotic stress tolerance in soybean
3. **Priyanka** – Transgenic approaches for improving rice yield.
4. **Alisha Gupta** - Genetic engineering of Guggulu (*Commiphora wightii*) for enhancement of secondary metabolites

M. Phil – Completed/Working

1. **Shikha Tyagi – 2017** Artificial micro RNA-mediated targeting of ToLCV genes for virus resistance in tomato
2. **Anupriya Chatterjee** – **2015**. Host-induced RNA Silencing of *CAS*1 and *CHS*1 Genes of a Fungal Pathogen (*Colletotrichum gleosporoides*) of Tomato
3. **Priyanka Dey – 2015** Molecular Characterization of Putative Brinjal Transgenic Plants Developed with RNAi Construct of Chitinase Gene from Fruit and Shoot Borer (*Leucinodes orbonalis*)
4. **Vaishali Bhardwaj - 2014** Functional genomics of some vital genes of *Aspergillus fumigates* by using RNAi technology
5. **Rajender Vadlakonda - 2007.** Molecular characterization of transgenic tomato plants expressing human S-adenosylmethionine decarboxylase gene under the control of tapetal-specific promoter (TA29)
6. **Prerna Choudhary - 2004**. Transgenic9 Manipulation of Pollen Development in

Tobacco through Over-Expression of *Datura* Spermidine Synthase Gene

7. **Parul Mittal – 2003.** Genetic Transformation of Tobacco with Sense and Anti-Sense Diamine Oxidase Genes
8. **Namita Kumari** – **1994**. Plant Regeneration and Genetic Transformation in Tomato and Tobacco: Thaumatin, A Pathogenesis-Related Sweet Protein Gene Confers Resistnace to Fungal Pathogens and Osmotic Stresses in Putative Transgenic Tobacco Plants
9. **Madhuri Vajha** – **1992**. Apical Shoot Meristem Culture in Red Pepper (*Capsicum annuum* L.)
10. **Seema Hashim** – **1991**. Isolation and Characterization of Groundnut Callus Lines Tolerant to High Levels of the Diamine Putrescine and an Inhibitor of Polyamine Biosynthesis Difluoromethylarginine.
11. **Vijaya Lakshmi** – **1990**. The Effects of Polyamines and Their Biosynthetic Inhibitions on Growth of Callus Cultures in Red Pepper (*Capsicum annum* L.)

Postdoctoral and Visiting Fellows - Trained

1	Dr. Ranjeet Kaur (UGC Kothari Fellowship)	2019 - 2021
2	Dr.Vartika Sinha (DST PDF)	2016 - 2019
3	Dr. Bhuphinder Dhar (UGC Kothari Fellowship)	2014 - 2017
4	Dr. Anuj Rana (UGC Kothari Fellowship)	2014 - 2017
5	Dr. Abhinav Kumar (Res. Assoc. in a Research Project)	2012
6	Dr. Manoj Goel (Res. Assoc. in a Research Project)	2009 - 2010
7	Dr. Riffat John (DST – Young Scientist)	2005 - 2007
8	Dr. Esha Bhattacharya (DST-Young Scientist)	2005 - 2007
9	Dr. V. Prabhavathi (DST-Young Scientist)	2004 - 2007
10	Dr. Soumen Nandy (DST-Young Scientist)	2004 – 2007
11	Dr. S. Vinod Kumar (V. N. Bakshi PDF)	2004 - 2006
12	Dr. Deepika Saraswat (DBT PDF)	2004
13	Mr. Joseph Job (Teacher trainee)	2003
14	Dr. Ratna Kumria (Res. Assoc. in Research project)	2000 - 2001
15	Ms. Sandra Morel, France (Internship)	2000 - 2001
16	Dr. Sumita Pal (Res. Assoc. in a Research Project)	2000 - 2001
17	Dr. Saiprasad Goud (Res. Assoc. in a Research Project)	1999 – 2001
18	Dr. Sarabjeet Singh Suri (Res. Assoc. in a Research Project)	1998 - 2000
19	Dr. Pradeep K. Chand (DST Visiting Fellow)	1999 - 2000
20	Dr. Pradeep Chand (INSA Visiting Fellow)	1998 - 1999
21	Dr. Anil Choudhary (Res. Assoc. in a Research Project)	1997 - 2000
22	Dr. Kalyani Krishna (DBT National Associate)	1997 – 1998
23	Dr. Asif (Res. Assoc. in a Research Project)	1998-2000
24	Dr. G. U. Rao (Res. Assoc. in a Research Project)	1997 - 1999
25	Dr. D. Rajyalakshmi Rao (UGC Res. Assoc.)	1993 - 1995
26	Dr. Malaya Das (CSIR Pool Officer)	1993 – 1994
27	Dr. T. Christopher (CSIR Res. Assoc.)	1990 – 1995

Other Trainees: ~ 150 Trainees (mainly Summer Trainees) - 1988 - 2020

National and International Research Collaborations:

1 Universite de Paris Sud XI, Orsay-Paris, France
2 Instituto Spermantale per L Orticulatura, Montanaso, Italy
3 University of New Hampshire, USA
4 Durban University, Durban, Africa
5 International Centre for Genetic Engineering & Biotechnology, New Delhi
6 Tata Institute of Fundamental Research, Mumbai
7 University of Hyderabad, Hyderabad
8 National Centre for Plant Biotechnology, IARI, New Delhi
9 Centre for Biotechnology, Hamdard University, New Delhi
10 Deptt. of Plant Molecular Biology, University of Delhi - South Campus, New Delhi

Member of Professional Organizations:

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

Research Collaborations with Industries:

1 Dabur Research Foundation, Noida
2 Ankur Seeds Ltd., Nagpur
3. Bejo Sheetal Seeds Ltd., Jalna
4. Sri Biotech Laboratory India Ltd., Hyderabad

Foreign Scientists Visit to the Lab

Prof. Subhash C. Minocha, Department of Plant Biology, University of New Hampshire, Durham, New Hampshire, USA had visited the lab under TOKTEN (Transfer of Knowledge Through Expatriate Nationals) programme of the Council of Scientific and Industrial Research, Government of India, Program of the United Nations for a visit to Delhi University, Dabur Research Foundation and SPIC Research Foundation; Oct. 15-Nov. 17, 1998.

Dr. Robert Haicour and Ms. Annick Ambroise, University of Paris Sud XI had visited three times under EU joint project.

Heba A. Mahfouze and Sherin A. Mahfouze, Genetics and Cytology Department, Genetic Engineering and Biotechnology Research Division, National Research Centre, Dokki, 12622, Egypt, visited for 6 months to perform a project work.

Visits Abroad:

1984–85	One Year PDF (**Yale Univ., New Haven & Cornell Univ., Ithaca, USA**)
1997	7 Days Malacca, Malaysia (**Intern. Rice Biotech. Meeting**)
1998	10 Days Beijing, China (**EC project meeting at the Insti. of Vegetables & Flowers**)
1999	1 Month Orsay-Paris, France (**Visit to Univ. of Paris under Indo-French project**)
2000	10 Days Bogor, Indonesia (**EC proj. meeting at Res. Inst. For Food Crop Biotech**)
2000	15 Days Milan, Italy (**Visit to Insti. Spermimentale per L'Orticoltura, Montanaso, and Univ. of Verona and Univ. of Milano**)
2000	7 Days Nijhmegen, The Netherlands (**Attended Solanaceae conf. under EC proj**.)
2000	7 Days Monpellier, France; Barcelona, Spain (**Visit to Insti. Nat. De La Recherde Agronomique, Montfavet under EC proj & Univ. of Barcelona**)
2000	15 Days Orsay-Paris, France (**Visit to Univ. of Paris under EC project**)
2001	15 Days Orsay-Paris, France (**Visit to Univ. of Paris under Indo-French project**)
2001	10 Days Orsay-Paris, France (**Visit to Univ. of Paris under EC project**)

Meetings Organized:

1. Workshop on Plant Genetic Engineering, October 22-23, 1998.
2. EC Research Partners 2nd Annual Meeting, May 1999.
3. Symposium on "Biotechnology Approaches for Plant Protection", February 10, 2000.
4. 24th Annual Meeting of Plant Tissue Culture Association (India) and National Symposium on Plant Biotechnology and Molecular Biology, October 12-14, 2001.
5. One day workshop on Patenting Awareness (sponsored by the DST) October 15, 2001
6. One day seminar on GM Crops for Sustainable Agriculture (sponsored by the UGC under Special Assistance Programme), April 8, 2006.

7. International Conference on Plant Biotechnology and Molecular Biology, Kakatiya University, Warangal, August 15-17, 2008 (one of the conveners and member of the organizing committee).
8. One day seminar on 'RNA Rules' , 25th October 2008 at UDSC
9. The 6th Solanaceae Genome Workshop, New Delhi, November 8-13, 2009 (Convener for one session and member of the organizing committee).
10. One day seminar on 'Biology and Applications of RNA interference' at UDSC, 26th October 2010.
11. 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 (Convener for one session and member of the organizing committee).
12. Seminar to celebrate the 'Fascination of Plants Day', May 18, 2012 at UDSC.
13. Coordinator for Three weeks Refresher Course in Life Sciences – organized in association with CPDHE (UGC-ASC) – Feb. 25 – Mar. 16, 2013.
14. Organized a seminar to celebrate the 'Fascination of Plants Day', May 18, 2013 at UDSC.
15. Organizing an International Conference on 'Plant Biotechnology, Molecular Medicine and Human Health', October 18-20, 2013.
16. Organized a seminar to celebrate the 'Fascination of Plants Day', May 18, 2015 at UDSC.
17. 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 (Member of the organizing committee).
18. Organized a seminar to celebrate the 'Fascination of Plants Day' (18th May), May 24, 2018 at UDSC.

LIST OF PUBLICATIONS

(i) Research Articles in Peer Reviewed Journals:

1. Chauhan S & **Rajam MV. 2022.** RNAi-mediated down-regulation of fasciclin-like proteins (FoFLPs) in *Fusarium oxysporum* f. sp. *lyucopersici* results in reduced pathogenity and virulence. **Microbiol. Res.**, 260: 127033. doi.org/10.1016/j.micres.2022.127033 (**Impact Factor: 5.415**).
2. Saxena S, Reddy KRK & **Rajam MV**. **2022.** dsRNA-mediated silencing of chitin synthase A (CHSA) affects growth and development of *Leucinodes orbonalis*, brinjal fruitand shoot borer. J. Asia-Pacific Entomol**.** 25(2): 101908. doi.org/10.1016/j.aspen.2022.101908 (**Impact Factor: 1.303**).
3. Chauhan A, Modgil M & **Rajam MV. 2021.** Establishment of *Agrobacterium tumefaciens*-mediated genetic transformation of apple pathogen *Marssonina coronaria* using marker genes under the control of CaMV 35S promoter. **Microbiol. Res.** 253:126878. doi: 10.1016/j.micres.2021.126878 (**Impact Factor: 5.415**).
4. Yogindran S & **Rajam MV**. **2021**. Host-derived artificial miRNA-mediated silencing of ecdysone receptor gene provides enhanced resistance to *Helicoverpa armigera* in tomato. **Genomics,** 113: 736-747. doi.org/10.1016/j.ygeno.2020.10.004 **(Impact Factor 5.736)**.
5. Tetorya M and **Rajam MV. 2021.** RNAi-mediated silencing of *PEX6* and *GAS1 g*enes of *Fusarium oxysporum* f.sp. *lycopersici* confers resistance against Fusarium wilt in tomato. **3 Biotech** 11: 443. doi.org/10.1007/s13205-021-02973-8 **(Impact Factor 2.406)**.
6. Gulzar B, Mujib A, **Rajam MV**, Zafar N, Mamgain J, Malik M & Syeed R. **2021**. Shotgun label-free proteomic and biochemical study of somatic embryos (cotyledonary and maturation stage) in *Catharanthus roseus* (L.) G. Don. **3 Biotech**. 11: 86. doi.org/10.1007/s13205-021-02649-3 **(Impact Factor 2.406)**.
7. Singh N, Mukherjee SK & **Rajam MV**. **2020**. Silencing of the ornithine decarboxylase gene of *Fusarium oxysporum* f. sp. lycopersici by host-induced RNAi confers resistance to Fusarium wilt in tomato. **Plant Mol. Biol. Rep**. 38(3): 419-429. doi.org/10.1007/s11105-020-01205-2 **(Impact Factor 1.595)**.

8. Mahto BK, Singh A, Pareek M, **Rajam MV**, Dhar RS & Reddy PM. **2020**. Host-induced silencing of the *Colletotrichum gloeosporioides* conidial morphology 1 gene (*CgCOM1*) confers resistance against Anthracnose disease in chilli and tomato. **Plant Mol. Biol.** doi.org/10.1007/s11103-020-01046-3 **(Impact Factor 4.076)**.
9. Jaiwal A, Natarajaswamy K & **Rajam MV**. **2020**. RNA silencing of hormonal biosynthetic genes impairs larval growth and development in cotton bollworm, *Helicoverpa armigera*. **J. Biosci.** 45:109. DOI: 10.1007/s12038-020-00079-6 **(Impact Factor 1.826)**.
10. Ismail S, Tulsi Naik KS, **Rajam MV** & Mishra RK. **2020**. Targeting genes involved in nucleopolyhedrovirus DNA multiplication through RNA interference technology to induce resistance against the virus in silkworms. **Mol. Biol. Rep**. 47(7):5333-5342. DOI.org/10.1007/s11033-020-05615-z **(Impact Factor 2.3162).**
11. Pandey N, Tyagi G, Kaur P, Pradhan S, **Rajam MV** & Srivastava T. **2020.** Allicin Overcomes Hypoxia Mediated Cisplatin Resistance in Lung Cancer Cells through ROS Mediated Cell Death Pathway and by Suppressing Hypoxia Inducible Factors. **Cell Physiol. Biochem.** 54, 748-766. Doi.org/10.33594/000000253 **(Impact Factor 4.644).**
12. Gupta A, Pandey R, Sinha R, Chowdhary A, Pal RK & **Rajam MV**. **2019**. Improvement of post-harvest fruit characteristics in tomato by fruit specific over-expression of oat arginine decarboxylase gene. **Plant Growth Regul.** 88, 61-71. doi.org/10.1007/s10725-019-00488-0 **(Impact Factor 3.412).**
13. Gulzar B, Mujib A, **Rajam MV**, Frukh A & Zafar N. **2019**. Identification of somatic embryogenesis (SE) related proteins through label-free shotgun proteomic method and cellular role in *Catharanthus roseus* (L.) G. Don. **Plant Cell, Tiss, Org. Cult.** 137, 225-237. doi.org/10.1007/s11240-019-01563-0 **(Impact Factor 2.711).**
14. Gulati P, Kaur P, **Rajam MV**, Srivastava T, Mishra P & Islam SS. **2019** Vertically aligned multi-walled carbon nanotubes based flexible immunosensor for extreme low level detection of multidrug resistant leukemia cells. **Sensors and Actuators B: Chemical** 301, 127047. DOI:10.1016/j.snb.2019.127047 **(Impact Factor 7.460).**
15. Gulati P, Kaur K, **Rajam MV**, Srivastava T, Ali MA, Mishra P & Islam SS. **2018**. Leukemia biomarker detection by using photoconductive response of CNT electrode: Analysis of sensing mechanism based on charge transfer induced Fermi level fluctuation. **Sensors Actuators B: Chemical** 270: 45-55 doi.org/10.1016/j.snb.2018.05.019 **(Impact Factor 7.460).**
16. Choubey A & **Rajam MV**. **2018** RNAi-mediated silencing of spermidine synthase gene results in reduced reproductive potential in tobacco. **Physiol. Mol. Biol. Plants** 24 (6), 1069-1081 10.1007/s12298-018-0572-x **(Impact Factor 2.391).**
17. Gulati P, Kaur P, **Rajam MV**, Srivastava T, Mishra P & Islam SS. **2018.** Single-wall carbon nanotube based electrochemical immunoassay for leukemia detection. **Anal. Biochem.** 557, 111-119 doi.org/10.1016/j.ab.2018.07.020 **(Impact Factor 2.877).**
18. Marri S, Kakkerla R, Krishna MPS & **Rajam MV**. **2018.** Synthesis and antimicrobial evaluation of isoxazole-substituted 1, 3, 4-oxadiazoles. **Heterocyclic Commun.** 24 (5), 285-292 DOI:10.1515/hc-2018-0137 **(Impact Factor 1.120).**
19. Kakkerla R, Marri S, Krishna MPS & **Rajam MV**. **2018**. A facile and simple synthesis of novel isoxazolyl benzo[*f*][1,4]oxazepin-3-(2*H*)-ones and their antimicrobial activity. **Indian J. Chem. (Impact Factor 0.592).**
20. Tetorya M & **Rajam MV**. **2017**. RNA silencing of PEX6 gene causes decrease in pigmentation, sporulation and pathogenicity of *Fusarium oxysporum.* **Plant Pathol.** 67: 67-75, Doi: 10.1111/ppa.12712 **(Impact Factor 2.590).**
21. Pareek M & **Rajam MV**. **2017.** RNAi-mediated silencing of MAP kinase signalling genes (*Fmk1*, *Hog1* and *Pbs2*) n *Fusarium oxysporum* reduces pathogenesis on tomato plants. **Fungal Biol. 121: 775-784** doi: 10.1016/j.funbio.2017.05.005 **(Impact Factor 3.099).**
22. Choubey A & **Rajam MV**. **2017.** Transcriptome response and developmental implications of RNAi-mediated ODC knockdown in tobacco. **Funct. Integr. Genomics** 17(4): 399-412. DOI 10.1007/s10142-016-0539-3 **(Impact Factor 3.410).**
23. 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 *Plutella xylostella* and *Helicoverpa armigera*. **Insect Mol. Biol. 26(2): 164-180.** doi: 10.1111/imb.12277 **(Impact Factor 3.585).**

24. Upadhyay A, Kochar M, **Rajam MV** & Srivastava S. **2017.** Unraveling the role of expolysaccharides in Zinc biosorption by fluorescent *Pseudomonas* strain Psd. **Frontiers in Microbiology**. 8:284 doi 10.3389/fmicb.2017.00284 **(Impact Factor: 5.640)**.
25. 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 doi: 10.1016/j.micres.2016.12.006 **(Impact Factor: 5.415)**.
26. Yogindran S & **Rajam MV**. **2016**. Artificial miRNA-mediated silencing of ecdysone receptor (*EcR*) affects larval development and oogenesis in *Helicoverpa armigera*. **Insect Biochem. Mol. Biol**. 77: 21-30 doi.org/10.1016/j.ibmb.2016.07.009 **(Impact Factor: 4.714)**.
27. 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. **Front Plant Sci.** 7: 1-9 doi.org/10.3389/fpls.2016.01280 **(Impact Factor: 5.753)**.
28. Koul A, Yogindran S, Sharma D, Kaul S, **Rajam MV** & Dhar MK. **2016**. Carotenoid profiling, *in silico* analysis and transcript profiling of miRNAs targeting carotenoid biosynthetic pathway genes in different developmental tissues of tomato. **Plant Physiol. Biochem**. 108: 412-421 doi: 10.1016/j.plaphy.2016.08.001 **(Impact Factor: 4.270)**.
29. Mamta, Reddy KRK & **Rajam MV**. **2016**. Targeting chitinase gene of *Helicoverpa armigera* 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: 4.076)**.
30. Pandey R, Gupta A, Chowdhary A, Pal RK & **Rajam MV**. **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. DOI10.1007/s11103-014-0273-y **(Impact Factor: 4.076)**.
31. 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.** 37(1):1159-71 DOI 10.1007/s13277-015-3912-2 **(Impact Factor: 3.048)**.
32. Singh D, Haicour R, Sihachakr D & **Rajam MV**. **2015**. Expression of rice chitinase gene in transgenic eggplant confers resistance to fungal wilts. **Indian J. Biotechnol.** 14: 233-240 (**Impact Factor: 0.414**).
33. 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** 20:143-50 DOI: 10.1007/s12298-014-0225-7 (**Impact Factor: 2.391**)
34. 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: 1.175**).
35. Natarajaswamy K, Naorem A & **Rajam MV**. **2013.** Targeting fungal genes by diced siRNAs: A rapid tool to decipher gene function in *Aspergillus nidulans*. **PLoS ONE** 8 (10): e75443 doi: 10.1371/journal.pone.0075443 (**Impact Factor: 3.240**).
36. 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 DOI 10.1007/s11103-013-0051-2 (**Impact Factor: 3.302**).
37. Gupta A, 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 doi: 10.1016/j.jplph.2013.02.003 (**Impact Factor: 3.549**).
38. Rajanarendar E, Govardhan Reddy K, Rama Krishna S, Shireesha B, Reddy YN & **Rajam MV 2013**. Design, synthesis, antimicrobial, anti-inflammatory, and analgesic activity of novel dihydrobenzo furo[3,2-e]isoxazolo[4,5-b] azepin-5(5aH)-ones. **Med. Chem. Res.** 22: 6143-6153 doi.org/10.1007/s00044-013-0598-0 (**Impact Factor: 1.783**).
39. Chandna P, 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.** 64: 571–580| DOI 10.1007/s13213-013-0690-1 (**Impact Factor: 1.528)**.

40. Gupta B & **Rajam MV**. **2013**. Marker-free transgenic tomato with engineered mannitol accumulation confers tolerance to multiple abiotic stresses. **OMICS: Cell Dev. Biol.** 2 (2) 1000113 DOI:10.4172/2168-9296.1000113 (Invited Article).
41. Singh N & **Rajam MV**. **2013.** A simple and rapid glass bead transformation method for a filamentious fungus *Fusarium oxysporum*. **OMICS: Cell Dev. Biol.** 2 (2) 1000115 DOI:10.4172/2168-9296.1000115 (Invited Article).
42. 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 DOI: 10.4172/2168-9296.1000117 (Invited Article).
43. Rajanarendar E, Nagi Reddy M, Rama Krishna S, Govardhan Reddy K. Reddy YN & **Rajam MV. 2012**. Design, synthesis, *in vitro* antimicrobial and anticancer activity of novel methylenebis-isoxazolo[4,5-b]azepines derivates. **European J. Med. Chem**. 50: 344-349 (**Impact Factor: 5.572)**.
44. 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 isoxazolyl pyrimido[4,5,*b*]quinolines and isoxazolyl chrommeno[2,3-*d*]pyrimidin-4-ones. **European J. Med. Chem**. 55: 273-283 (**Impact Factor: 5.572**).
45. Hazarika P & **Rajam MV. 2011.** Biotic and abiotic stress tolerance in transgenic tomatoes by constitutive expression of S-adenosylmethionine decarboxylase gene. **Physiol. Mol. Biol. Plants** 17: 115-128 DOI:10.1007/s12298-011-0053-y (**Impact Factor: 2.391**).
46. Singh A, Nirala NK, Das S, Narula A, **Rajam MV** & Srivastava PS. **2011**. Overexpression of odc (ornithine decarboxylase) in *Datura innoxia* enhances the yield of scopolamine. **Acta Physiol. Plant**. 33: 2453-2459 doi.org/10.1007/s11738-011-0787-8 (**Impact Factor: 2.354)**.
47. Singh S & **Rajam MV**, **2010**. Highly efficient and rapid plant regeneration in *Citrus sinensis*. **J. Plant Biochem. Biotechnol.** 19: 195-202 doi.org/10.1007/s11738-011-0787-8 (**Impact Factor: 1.175**).
48. Uma Ganesan, Suri SS, Rajasubramaniam S, **Rajam MV** & Dasgupta I. **2009**. Transgenic expression of coat protein gene of *Rice tungro bacilliform virus* in rice reduces the accumulation of viral DNA in inoculated plants. **Virus Genes**, 39: 113-119 doi: 10.1007/s11262-009-0359-9 (**Impact Factor: 2.332**).
49. Kumar M, Gupta GP & **Rajam MV. 2009.** Silencing of acetylcholinesterase gene of *Helicoverpa armigera* by siRNA affects larval growth and it doi: 10.1007/s11262-009-0359-9 s life cycle**. J. Insect Physiol**. 55: 273-278 (**Impact Factor: 2.353**).
50. Mishra SN, Lakra N, Tomar PC, Makkar K & **Rajam MV**. 2009. Salinity stress mitigation in *B. juncea* by putrescine: a pleiotropic effect. **Indian J. Plant Physiol.** 14: 239-249. DOI:10.1016/j.jplph.2004.08.008 (**Impact Factor: 0.810**).
51. Tyagi H, Rajasubramaniam, **Rajam MV** & Dasgupta I. 2008. RNA-interference in rice against Rice tungro bacilliform virus results in its decreased accumulation in inoculated rice plants. **Transgenic Res**. 17: 897-904 doi: 10.1007/s11248-008-9174-7 (**Impact Factor: 2.788**).
52. Khatri M & **Rajam MV**. **2007**. Targeting polyamines of *Aspergillus nidulans* by siRNA specific to fungal ornithine decarboxylase gene. **Med. Mycol.** 45: 211-220. doi: 10.1080/13693780601158779 (**Impact Factor: 4.076**).
53. Prabhavathi V & **Rajam MV**. **2007**. Mannitol accumulating transgenic eggplants exhibit enhanced resistance to fungal wilts. **Plant Sci.** 173: 50-54. doi.org/10.1016/j.plantsci.2007.04.004 (**Impact Factor: 4.729**).
54. Prabhavathi V & **Rajam MV**. **2007**. Polyamine accumulation in transgenic eggplant enhances tolerance to multiple abiotic stresses and fungal resistance. **Plant Biotechnol**. 24: 273-282. DOI:10.5511/plantbiotechnology.24.273 (**Impact Factor: 1.133**).
55. **Rajam MV**, Chandola N, Saiprasad Goud P, Singh D, Kashyap V, Choudhary ML & Sihachakr D. **2007**. Thaumatin gene confers resistance to fungal pathogens as well as tolerance to abiotic stresses in transgenic tobacco plants. **Biol. Plant.** 51: 135-141. doi.org/10.1007/s10535-007-0026-8 (**Impact Factor: 1.747**).
56. Kumar SV & **Rajam MV**. **2007**. Induction of *Agrobacterium tumefaciens vir* genes by the green alga – *Chlamydomonas reinhardtii*. **Curr. Sci.** 92: 1727-1729 (**Impact Factor: 1.102**).

57. Pujni D, Chaudhary A & **Rajam MV**. **2007**. Increased tolerance to salinity and drought in transgenic indica rice by mannitol accumulation. **J. Plant Biochem. Biotechnol**. 16: 1-7. DOI:10.1007/BF03321921 (**Impact Factor: 1.175**).
58. Madhulatha P, Pandey R, Hazarika P & **Rajam MV**. **2007**. High transformation frequency in *Agrobacterium*-mediated genetic transformation of tomato by using polyamines and maltose in shoot regeneration medium. **Physiol. Mol. Biol. Plants** 13: 191-198 (**Impact Factor: 2.391**).
59. Madhulatha P, Pandey R, Hazarika P & **Rajam MV**. **2006**. Polyamines and maltose significantly enhace shoot regeneration in tomato. **Physiol. Mol. Biol. Plants** 12: 295-301 (**Impact Factor: 2.391**).
60. Kumar SV & **Rajam MV**. **2006**. Modulation of polyamine levels influence growth and cell division in *Chlamydomonas reinhardtii*. **Physiol. Mol. Biol. Plants** 12: 53-58 (**Impact Factor: 2.391**).
61. Kumar SV & **Rajam MV**. 2005. Polyamines enhance *Agrobacterium tumefaciens* vir-gene induction and T-DNA transfer. **Plant Sci**. 168: 475-480. doi.org/10.1016/j.plantsci.2004.09.018 (**Impact Factor: 4.729**).
62. Kumar SV & **Rajam MV**. 2005. Enhanced induction of *Vir*-genes results in the improvement of *Agrobacterium*-mediated transformation of eggplant. **J. Plant Biochem. Biotechnol.** 14: 59-64. DOI:10.1007/BF03263234 (**Impact Factor: 1.175**).
63. Narula A, Kumar SV, Pande D, Srivastava PS & **Rajam MV**. 2004. *Agrobacterium*-mediated transfer of arginine decarboxylase and ornithine decarboxylase genes to *Datura innoxia* enhances shoot regeneration and hyoscyamine biosynthesis. **J. Plant Biochem. Biotech.** 13: 127-130. DOI:10.1007/BF03263207 (**Impact Factor: 1.175**).
64. Kumar, S.V, Mosquitta, R, Reddy, V.S, Rao, B.J. & **Rajam, M.V. 2004**. Genetic transformation of the green alga - *Chlamydomonas reinhardtii* by *Agrobacterium tumefaciens.* **Plant Sci**., 166: 731-738 (**I.** doi.org/10.1016/j.plantsci.2003.11.012 **(Impact Factor: 4.729**).
65. Waie, B. & **Rajam, M.V. 2003**. Effect of increased polyamine biosynthesis on stress responses in transgenic tobacco by introduction of human S-adenosylmethionine gene**. Plant Sci.,** 164: 727-734. doi.org/10.1016/S0168-9452(03)00030-X (**Impact Factor: 4.729**).
66. Prabhavathi S, Yadav JS, Kumar PA & **Rajam MV. 2002.** Abiotic stress tolerance in transgenic eggplant (*Solanum melongena* L.) by introduction of bacterial mannitol phospho dehydrogenase gene. **Molecular Breed.,** 9: 137-147. DOI:10.1023/A:1026765026493 (**Impact Factor: 2.589**).
67. Kumria R & **Rajam MV**. **2002.** Alteration in polyamine titers during *Agrobacterium*-mediated transformation of indica rice with ornithine decarboxylase gene affects plant regeneration potential. **Plant Sci.**, 162: 769-777. doi.org/10.1016/S0168-9452(02)00020-1 (**Impact Factor: 4.729**).
68. Kumria R & **Rajam MV. 2002.** Ornithine decarboxylase transgene in tobacco affects polyamines, *in vitro* morphogenesis and response to salt stress. **J. Plant Physiol.,** 159: 983-990. doi.org/10.1078/0176-1617-00822 (**Impact Factor: 3.549**).
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(v) General/Popular articles:

1. Upadhyay A Upadhyay A, Singhania A & **Rajam MV**. 2019. Cleaning Heavy-metal Polluted Environments: The Microbe Way. Sci. Rep., NISCAIR-CSIR
2. Kumar M & **Rajam MV. 2006**. Spider SilK: The Magic Fibre of the Future. Proc. A.P. Akademi of Sci., 10: 37-45.
3. **Rajam MV**. **1998.** Polyamine biosynthetic pathway: a potential target for plant chemotherapy. **Curr. Sci.,** 74: 729-731 (**Impact Factor: 1.102**).
4. **Rajam MV. 1993**. Artificial seeds and the future. **Everyman's Sci.,** XXVIII: 151-155.
5. **Rajam MV**. **1987**. Inhibition of polyamine biosynthesis: A new approach for disease prevention. **Sci. Reptr.,** 24: 652-655.

(vi) Text Book Chapters:

1. **Rajam MV. 2002-03.** Written Chapters for CBSE Class XI & XII Biotechnololgy Text Books, and Practicals for Lab Manuals for these courses (Genetics and Molecular Biology – Unit 5, Chapters 1, 2 & 3, and Plant Cell Technology – Unit 3, Chapter 2**). All these books were revised and I was Convenor, Editor and Author for the revised books.**
2. **Rajam MV**. Genetic engineering. Unit 2- **Biology Supplement Text Book for 10+2 Students of CBSE pattern.**

(vii) Edited Books

1. **Rajam MV** (Guest Editor). **2020**. Special Issue **"Genetic Intervention in Plants: Mechanisms and Benefits**". **J. Biosci.** 45.
2. Kavi Kishor PB, **Rajam MV**, Pullaiah T (Eds). **2020**. **Genetically Modified Plants – Current Strategy, Prospects and Challenges**, Vol. I. Springer Nature, Singapore.
3. Kavi Kishor PB, **Rajam MV**, Pullaiah T (Eds). **2020**. **Genetically Modified Plants – Current Strategy, Prospects and Challenges**, Vol. II. Springer Nature, Singapore.
4. Bir Bahadur, **Rajam MV**, L Sahijram, KV Krishnamurthy. **2015**. **Plant Biology and Biotechnology, Vol. I: Plant Diversity, Organization, Function and Improvement**. Springer, New Delhi.
5. Bir Bahadur, **Rajam MV**, L Sahijram, KV Krishnamurthy. **2015**. **Plant Biology and Biotechnology, Vol. II: Plant Genomics and Biotechnology**. Springer, New Delhi.

Papers Presented/Invited Lectures Delivered or Participation at the International and National Conferences/Symposia/Seminars/Workshops

(58 International and 120 National Meetings Attended)

Conferences attended and delivered talks during the last 5 years

1. Panelist, Session 3, Panel 5: Advancements in Agri Biotech and Agrichem in a meeting on "Global Dialogue on Innovating at the Frontier from Agriculture to Agribusiness", organized by CII, December 15, 2021.
2. Delivering a talk in the webinar to be organized by Maharani Lakshmi Ammanni College for Women (Autonomous), Department of Biotechnology and Biochemistry on 2nd June 2021 **(This webinar in sponsored by three academies – IAS, INSA & NASI and I am convener of this meeting.**
3. Delivered a lecture on the webinar organized by the Dept of Biotechnology, IILM-CET, Greater Noida. Topic Bioescalator: Insights in to Biotechnology, Plant Science and Bioinformatics, May 11, 2020
4. Delivered a lecture on the webinar organized by Chaitanya Deemed to be University, Warangal – 2020
5. Delivered a lecture on the webinar organized by Punjab Agriculture University, Ludiana dates. 2020

6. Delivered a talk in "Professor Satish Maheshwari Memorial Web Conference : Harnessing Green Technology: In Harmony with Nature" on 12th June 2020
7. 41 Annual Meeting of the Plant Tissue Culture Association (India) and International Conference, Indian Institute of Agricultural Biotechnology, 2020.
8. 40th Annual Meeting of the Plant Tissue Culture Association (India) and International Symposium, Thapar Institute of Engineering & Technology, 2018.
9. 39th Annual Meeting of the Plant Tissue Culture Association (India) and National Symposium on 'Plant Biotechnology', Arid Forest Research Institute (AFRI), Jodhpur, March 16-18, 2018.
10. International Conference on 'Environmental Changes and Their Impact on Plants and Human Health', St. Wilfred's P. G. College, Jaipur. January 15-17, 2018.
11. 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
12. National Seminar on 'Genetically Modified Food and Food Security (GMFFS) – 2017, Shree M. and N. Virani Science College, Rajkot, February 10-11, 2017
13. International Symposium on 'Plant Biotechnology for Crop Improvement', Indian Institute of Technology Guwati, Guwati. January 20-22, 2017
14. VIROCON 2016 and International Conference on "Global Perspectives in Virus Disease Management", ICAR-Indian Institute of Horticultural Research, Bengaluru, December 7-10,, 2016.
15. 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
16. 8th International Geminivirus Symposium & 6th International ssDNA Comparative Virology Workshop, November 7-10, 2016, New Delhi
17. 2nd International Conference on Plant Genetics & Genomics – AgriGenomics India, New Delhi August 19-20, 2016
18. National Conference on Recent Advances in Biological Sciences, Biotechnology & Sustaible Development, March 18-19, 2016, Mohanlal Sukhadia University, Udaipur.
19. 37th Annual Meeting of PTCA (I) and a National Symposium on 'Plant Biotechnology for Crop Improvement', 25th -27th February 2016, at CSIR-NBRI, Lucknow.
20. International Conference on 'Emerging Biotechnologies', January 28-30, 2016, Kakatiya University, Warangal.
21. 8th RNA Group Meet at the Centre for Cellular and Molecular Biology (CCMB) during 8th-10th January 2016.
22. 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
23. 2015 NextGen Genomics, Biology, Bioinformatics and Technologies, October 1-3, 2015, HICC, Hyderabad.
24. 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.
25. 36th Annual Meeting and National Symposium of The Plant Tissue Culture Association (India) (PTCA-2015), Mangalore, January 29-31, 2015
26. 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.

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