
Dr. Riffat John. PhD

Plant Molecular Biology Lab

Department of Botany, University of Kashmir, Srinagar – 190 006

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**EDUCATION**

Indian Institute of Technology (IIT), Delhi

2005

Ph.D. Plant Molecular Biology/Plant Genetics

Jamia Hamdard, Hamdard University, New Delhi

2000

M.Sc., Botany with Molecular and Cell Biology; Plant Genetics

Environmental stress; Plant physiology and metabolism

PROFESSIONAL EXPERIENCE

Assistant professor (Plant Molecular Biology and Genetics)

2011-till present

University of Kashmir, Srinagar

Assistant professor

2009-2011

Govt. Degree College for Boys, Anantnag

Young Scientist (Molecular and Cell Biology)

2005-2008

ICGEB, New Delhi and South Campus, University of Delhi

FELLOWSHIPS/AWARD

- ✓ Indo-U.S. Genome Engineering and Editing Technology (GETin) Overseas Fellowship 2017
- ✓ Selected for INSA (Indian National Science Academy) International Bilateral Scientist Exchange Program to Hungary – 2016
- ✓ Member of the Indian National Young Academy of Science (INYNAS): 2016 – 2021
- ✓ Young Scientist Award by J & K State Science and Technology Council – 2015
- ✓ INSA Visiting Fellowship - 2013

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- ✓ Junior Research Fellowship (among top 20%) awarded by Council for Scientific and Industrial Research, New Delhi – India
 - ✓ GATE – General Aptitude Test in Engineering (All India Rank- 37th with 97.55 percentile)
 - ✓ Outstanding Speaker Award: “Management of Solid Wastes in Delhi”, Seminar held at India Habitat Centre, New Delhi – India
 - ✓ 3rd Prize: “National Seminar on Environmental Awareness” at Jamia Hamdard, Hamdard University, New Delhi - India.

RESEARCH GRANTS/FUNDED PROJECTS

Projects Completed:

1. “Gene Stacking in Transgenic Tomato for Abiotic Stress (Drought and Salinity) Tolerance” (Funded by Department of Science and Technology (DST), Govt. of India)
2. Developing Cold Tolerant Transgenic Tomato by Overexpression of Novel cold Induced Gene from *Brassica oleracea* (Funded by Department of Biotechnology (DBT))
3. “Biochemical and Proteomic Analysis of Cold Tolerant Plants of Kashmir Himalayan Region” (Funded by SERB, DST, Govt. of India.

Ongoing Projects:

4. Antioxidant and Metabolomic Changes in *Digitalis purpurea* in response to Abiotic Stress (Funded by DST)
5. Characterization of crp gene from cabbage (*Brassica oleracea*) in *Arabidopsis thaliana*

PROFESSIONAL ACTIVITIES

- Organized National Science Day – 2013 with focal theme “Genetically Modified Crops and Food Security” (Supported by Council for Science and Technology, J and K State Government)
- Member of Department Research Committee University of Kashmir
- Member of anti-ragging and discipline committee for women students at Degree College

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- Member of Career Counselling for College and University students
 - Warden Rabia Basria Hostel, University of Kashmir

PROFESSIONAL ASSOCIATIONS

- Life member of Proteomic Society of India
- Life member of Society for Plant Biochemistry and Biotechnology, New Delhi, India
- Life Member of Indian Women Scientists' Association

INVITED LECTURES

- ✓ Global Food Security and Role of GM Crops, INSA-GBM (Indian National Science Academy, General Body Meeting), 2016, NISER, Bhubaneswar, India.
- ✓ "Genetically Modified Crops: A Boon or a Bane", Academic Staff College, Summer School Programme (2015), University of Kashmir, Srinagar.

LIST OF PUBLICATIONS

1. Majeed U, Yaqoob U, Qazi HA, Ahmad S and John R. CRISPR/Cas System as an Emerging Technology to Enhance Plant Viral Immunity. *Physiological and Molecular Plant Pathology* 103, 107-113.
2. Nelofer Jan, Umer Majeed Wani, Khurshid Iqbal Andrabi and Riffat John (2018). Cold Stress Modulates Osmolytes and Antioxidant System in *Calendula officinalis*. *Acta Physiologiae Plantarum*, 40:73.
3. Mudasir Ahmad Mir, Riffat John, Mohammed Nasser Alyemini, Parvej Alam and Parvaiz Ahmad (2018) Jasmonic acid ameliorates alkaline stress by improving growth performance, ascorbate glutathione cycle and glyoxylase system in maize seedlings. *Scientific Reports*, 8 (2831).
4. Nelofer Jan, Khurshid Iqbal Andrabi and Riffat John (2017) *Calendula officinalis* - An Important Medicinal Plant with Potential Biological Properties. *Proceedings of Indian National Science Academy*, 83 (4), 769-787.
5. Vaseem Raja, Umer Majeed, Hunseung Kang, Khursheed Iqbal Andrabi and Riffat John (2017) Abiotic Stress: Interplay between ROS, Hormones and MAPKs. *Environmental and Experimental Botany*, 137, 142-157.

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6. **John R**, Anjum NA, Sopory SK, Akram NA and Ashraf M (2016) Some Key Physiological and Molecular Processes of Cold Acclimation. *Biologia Plantarum*, 60(4), 603–618.
 7. **John R**, Ganeshan U, Singh B N, Kaul T, Reddy MK, Sopory SK and Rajam MV (2016) Over-expression of Topoisomerase II Enhances Salt Stress Tolerance in Tobacco. *Frontiers in Plant Science*, 7, 1280.
 8. Singh BN, Mudgil Y, **John R**, Acharya MM, Tripathy MK, Sopory SK, Reddy MK and Kaul T (2015) Cell cycle stage-specific differential expression of Topoisomerase I in tobacco BY-2 cells and its ectopic overexpression and knockdown unravels its crucial role in plant morphogenesis and development. *Plant Science*, 240, 182–192.
 9. Ahmad P, Hashem A, Fathi Abd-Allah E, Alqarawi A, **John R**, Egamberdieva D and Gucel S (2015) Role of *Trichoderma harzianum* in mitigating NaCl stress in Indian mustard (*Brassica juncea* L) through antioxidative defense system. *Frontiers in Plant Science*, 6, 868.
 10. Hashmi U, Shafqat S, Khan F, Majid M, Hussain H, Kazi A G, **John R**, Ahmad P (2015) Plant exomics: Concepts, applications and methodologies in crop improvement. *Plant signaling & behavior* 10 (1).
 11. **John R**, Pandey R, Sopory S K and Rajam M V (2010) Engineering Antioxidant Enzymes for Abiotic Stress Tolerance in Plants. *Journal of Plant Biology*, 37 (3), 1–18.
 12. **John R**, Ahmad P, Gadgil K and Sharma S (2009) Effect of cadmium and lead on growth, biochemical parameters and uptake in *Lemna polyrrhiza* L. *Plant Soil Environment*, 54 (6): 262–270.
 13. **John R**, Ahmad P, Gadgil K and Sharma S (2009) Heavy metal toxicity: Effect on plant growth, biochemical parameters and metal accumulation by *Brassica juncea* L. *International Journal of Plant production*, 3(3): 65-76.
 14. **John R**, Ahmad P, Gadgil K and Sharma S (2009) Cadmium and lead-induced changes in lipid peroxidation, antioxidative enzymes and metal accumulation in *Brassica juncea* L. at three different growth stages. *Archives of Agronomy and Soil Science*, 55(4), 395–405.

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15. Ahmad P, **R John**, Sarwat M and Umer S (2008) Responses of proline, lipid peroxidation and antioxidative enzymes in two varieties of *Pisum sativum* L. under salt stress. *International Journal of Plant production* 2(4):353-366.
 16. **John R**, Ahmad P, Gadgil K and Sharma S. (2007) Response of *Lemna polyrrhiza* L. to Cd Induced Oxidative Stress. *International Journal of Environmental Biology*, 28 (2).
 17. Ahmad P **and John R** (2005) Effect of salt stress on growth and biochemical parameters of *Pisum sativum* L. *Archives of Agronomy and Soil Science*, 51(6); 665-672.
 18. **John R**, Gadgil K and Sharma S (2005) Resistance Mechanisms of Plants against Cadmium. *Asian Journal of Chemistry*, Vol. 17, pp, 1363-1370.

Book Chapters:

Jan N., Qazi H.A., Ramzan S., John R. (2018) Developing Stress-Tolerant Plants Through In Vitro Tissue Culture: Family Brassicaceae. In: Gosal S., Wani S. (eds) *Biotechnologies of Crop Improvement*, Volume 1. Springer, Cham

John R, Raja V, Ahmad M, Jan N, Majeed U, Ahmad S, Yaqoob U, Kaul T (2017) Trehalose: Metabolism and Role in Stress Signalling in Plants. *Stress Signaling in Plants: Genomics and Proteomics Perspective*, Volume 2 pp 261-275.

Latef, A. A. H. A., Jan, S., Abd-Allah, E. F., Rashid, B., John, R. and Ahmad, P. (2016) Soybean under abiotic stress, in *Plant-Environment Interaction: Responses and Approaches to Mitigate Stress* (eds M. M. Azooz and P. Ahmad), John Wiley & Sons, Ltd, Chichester, UK. doi: 10.1002/9781119081005.ch2

Raja V, Ahmad Wani M. A., Wani U. M., Jan N., and John R. (2016) Understanding Abiotic Stress Tolerance in Plants by Proteomics Approach. *Plant OMICS and Crop Breeding* (eds S. M. Zargar, V. Rai) November 30, 2016 (Forthcoming) by Apple Academic Press.

CONFERENCES AND ORAL PRESENTATIONS AND PAPERS PRESENTED

1. Participated in the Brainstorming session on “Technical Workshop on Practical Considerations of Application of Genome Editing” by Department of Biotechnology and

Biotech Consortium of India Limited on September 23rd, 2016 at Hotel Mercure, Hyderabad.

2. **John R** (2015) Engineering Plant Genome for Cold Tolerance. 7th Indo-Global Summit and Expo on Food & Beverages October 08-10, 2015 New Delhi, India.
3. **John R**, Gadgil K and Sharma S (2013) "Asian Congress on Biotechnology Bioprocessing for Sustainable Development" Dec 15-19, New Delhi, India
4. **John R** (2014) Cold Resistance in Plants of Himalayan Region". National Conference on Climate Change, Environmental and Sustainable Development, 9th-10th December, New Delhi, India.
4. **John R** (2006) "Developing Stress Tolerant Tomato Transgenic by Modifying Polyamine Pathway". International Workshop on Tomato Genomics 13-15 December, Hyderabad, India.
5. **John R** and Rehman M (2001) "*In Vitro* Study of Effect of Cd on *Dracena draco* L". Proceedings of National Symposium on Biochemical Engineering and Biotechnology, IIT - Delhi.
6. **John R**, Gadgil K and Sharma S. (2002) "Phytoremediation in Removal of Heavy Metals". Proceedings of International Conference WAPDEC, New Delhi, 11-13 Dec.
7. **John R**, Ahmad P, Gadgil K and Sharma S. (2004) "Effect of Cd and Pb on Growth and Biochemical Parameters of *L. polyrrhiza*". Proceedings of International Conference on Emerging Technologies, Bhubneshwar, Orissa, 22-24 Dec.