

Rohit Joshi (Ph.D.)

Senior Scientist

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Academic Qualifications

Ph.D., Major: Plant Physiology, Minor: Molecular Biology and Biotechnology, (2007)

College of Basic Science and Humanities, G.B. Pant University of Agric. and Tech., Pantnagar, Uttaranchal, India

Thesis title: Physiological and molecular evaluation of field grown rice varieties and *in vitro* developed rice somaclones for aerobic situations

Supervisor: Prof. Alok Shukla (Ph.D.)

- ✓ Qualified National Eligibility Test for the lectureship by **CSIR** (*Life Sciences*)
- ✓ Qualified National Eligibility Test for the lectureship by **ICAR** (*Plant Biochemistry and Plant Physiology*)
- ✓ Qualified National Eligibility Test for the lectureship by **ICAR** (*Basic Plant Sciences*)

M.Sc., Plant Physiology, (2004)

College of Basic Science and Humanities, G.B. Pant University of Agric. and Tech., Pantnagar, Uttaranchal, India

Thesis title: *In-vitro* Selection of low phosphate tolerant lines to improve phosphorus acquisition in maize (*Zea mays* L.)”.

Supervisor: Prof. Alok Shukla (Ph.D.)

- ✓ Qualified Graduate Aptitude Test in Engineering (**GATE**), with 89.85 percentile, organized by Indian Institute of Technology, New Delhi, India

B.Sc., Botany, Chemistry and Zoology, S.S.J. Campus, Kumaon University, Nainital, Uttaranchal, India, 2001

Professional Experience

Senior Scientist	Oct 2019 – Till date Plant Tissue Culture Laboratory, Biotechnology Division, CSIR- Institute of Himalayan Bioresource Technology, Palampur, Himachal Pradesh
Dr D S Kothari PDF	Dec 2016 – Sept 2019 Stress Physiology and Molecular Biology Laboratory, School of Life Sciences, Jawaharlal Nehru University (JNU), New Delhi Prof. Ashwani Pareek (PhD; FNASc; FNAAS)
Research Scientist	Sept 2016 – Nov 2016 Stress Physiology and Molecular Biology Laboratory, School of Life Sciences, Jawaharlal Nehru University (JNU), New Delhi Prof. Ashwani Pareek (PhD; FNASc; FNAAS)
SERB Young Scientist	Sept 2013 – Sept 2016 Plant Stress Biology Group, International Center for Genetic Engineering and Biotechnology, Aruna Asaf Ali Marg, New Delhi-110067 Dr. Sneh Lata Singla Pareek (Ph.D. FNASc; FNAAS)

Research Associate Nov 2012- Sept 2013
Plant Stress Biology Group, International Center for Genetic Engineering and Biotechnology, Aruna Asaf Ali Marg, New Delhi-110067
Dr. Sneha Lata Singla Pareek (Ph.D. FNASc)

Visiting PDF March 2012- October 2012
School of Plant Environment and Soil Sciences,
Sturgis Hall, Baton Rouge, Louisiana, USA-70802
Dr. Niranjana Baisakh (Ph.D.)

Research Associate May 2009- March 2012
Division of Plant Physiology,
Indian Agricultural Research Institute (IARI), New Delhi 110012
Prof. R.K. Sairam (Ph.D.), Head of Division

Research Associate Oct 2007 – April 2009
Stress Physiology and Molecular Biology Laboratory,
School of Life Sciences, Jawaharlal Nehru University (JNU), New Delhi
Prof. Ashwani Pareek (PhD; FNASc; FNAAS)

Patent

1- Pareek, A.; Panjabi-Sabharwal, V.; Kushwaha, H.R.; **Joshi Rohit**; Karan, R.; Kumari, S. and Singla-Pareek, S.L.
Metallothionein polynucleotide from rice conferring abiotic stress tolerance in plants. Indian patent application No. 2437/DEL/2009 A.

Technology Transfer

1- Technical Know-how on “Gerbera, Potato and *Bambusa balcooa* Tissue Culture”, to M/s Pratyaksha Agrotech Pvt. Ltd., ECF: Rs. 2.0 lakhs; Amita Bhattacharya, Sanat Sujat Singh and **Rohit Joshi**

Research Publications (Citations: 1054; h-index: 17; i10-index: 28; Total Impact: 73.885)

1. **Joshi R**, Sahoo KK, Singh AK, Anwar K, Pundir P, Gautam RK, Krishnamurthy SL, Sopory SK, Pareek A and Singla-Pareek SL 2020. Enhancing trehalose biosynthesis improves yield potential in marker-free transgenic rice under drought, saline, and sodic conditions. *Journal of Experimental Botany*. 71(2): 653-668 (IF=5.354)
2. **Joshi R**, Bhattacharya P, Sairam RK, Sathee L and Chinnusamy V 2020. Identification and characterization of NADH kinase-3 from a stress tolerant wild mung bean species [*Vigna luteola* (Jacq.) Benth.] with a possible role in waterlogging tolerance. *Plant Molecular Biology Reporter*. 38: 137-150 (IF=1.604)
3. Sengupta S, Mangu V, Sanchez L, Bedre R, **Joshi R**, Rajasekaran K, Baisakh N 2019. An Actin Depolymerizing Factor from the halophyte smooth cordgrass, *Spartina alterniflora* (*Sa.ADF2*) is superior to its rice homolog (*Os.ADF2*) in conferring drought and salt tolerance when constitutively overexpressed in rice. *Plant Biotechnology Journal*. 17(1): 188-205 (IF=6.840)
4. Wungrampha S, **Joshi R**, Rathore RS, Singla-Pareek SL, Govindjee and Pareek A (2019) CO₂ uptake and

chlorophyll a fluorescence of *Suaeda fruticosa* grown under diurnal rhythm and after transfer to continuous dark. ***Photosynthesis Research***. 142 (2): 211-227. (IF=3.057)

5. **Joshi R**, Sahoo KK, Tripathi AK, Kumar R, Gupta BK, Pareek A and Singla-Pareek SL 2018. Knockdown of an inflorescence meristem-specific cytokinin oxidase - OsCKX2 in rice reduces yield penalty under salinity stress condition. ***Plant Cell & Environment*** 41(5): 936-946 (IF=5.624) (Special Issue on Climate Resilient Crops).
6. **Joshi R***, Singh B and Shukla A 2018. Evaluation of elite rice genotypes for physiological and yield attributes under aerobic and irrigated conditions in Tarai areas of western Himalayan region. ***Current Plant Biology***. 13: 45-52. *corresponding author
7. Upadhyay G, Malik J, **Joshi R**, Lakshmayya and Singh UK 2017. Hepatoprotective potential of lyophilized hydro-alcoholic extract of *Roylea elegans* Wall. against CCL4 and PCM induced hepatotoxicity in wistar rats. ***Annals of Pharmacology and Pharmaceutics***. 2(8): 1045.
8. **Joshi R**, Prashat R, Sharma PC, Singla-Pareek SL and Pareek A 2016. Physiological characterization of gamma-ray induced mutant population of rice to facilitate biomass and yield improvement under salinity stress. ***Indian Journal of Plant Physiology***. 21(4): 545-555. (Special Issue: Challenges and Strategies in Plant Biology Research)
9. Kushwaha HR#, **Joshi R#**, Pareek A and Singla-Pareek SL 2016. MATH-domain family shows response towards abiotic stress in Arabidopsis and rice. ***Frontiers in Plant Science***. 7: 923. (IF=4.106) #contributed equally
10. **Joshi R#**, Karan R#, Singla-Pareek SL and Pareek A 2016. Ectopic expression of Pokkali phosphoglycerate kinase-2 (OsPGK2-P) improves yield in tobacco plants under salinity stress. ***Plant Cell Reports*** 35: 27-41. (IF=3.499) #contributed equally
11. Kumari S#, **Joshi R#**, Singh K#, Roy S#, Tripathi AK, Singh P, Singla-Pareek SL and Pareek A 2015. Expression of a cyclophilin OsCyp2-P isolated from a salt tolerant landrace of rice in tobacco alleviates stress via ion homeostasis and limiting ROS accumulation. ***Functional and Integrative Genomics***. 15: 395-412. (IF=2.745) #contributed equally
12. **Joshi R**, Ramanarao, VM, Lee, S; Kato, N and Baisakh, N 2014. Ectopic expression of ADP Ribosylation Factor1 (*SaARF1*) from smooth cordgrass (*Spartina alterniflora*) confers drought and salt tolerance in transgenic rice and *Arabidopsis*. ***Plant Cell Tissue and Organ Culture***. 117: 17-30 (IF=2.200)
13. Upadhyay J, Upadhyay G, **Joshi R** and Juyal V 2014. Effect of rhododendron flower juice on the bioavailability of amlodipine in rats. ***International Journal of Bioassays***. 3: 1734-1737.
14. **Joshi R**, Ramanarao, VM and Baisakh, N 2013. *Arabidopsis* plants constitutively overexpressing a myo-inositol 1-phosphate synthase gene (*SaINO1*) from the halophyte smooth cordgrass exhibits enhanced level of tolerance to salt stress. ***Plant Physiology and Biochemistry***. 65:61-66. (IF=3.404)
15. Kumar P, Pal M, **Joshi R** and Sairam RK 2013. Yield, growth and physiological responses of mung bean [*Vigna radiata* (L.) Wilczek] genotypes to waterlogging at vegetative stage. ***Physiology and Molecular Biology of Plants***. 19(2): 209-220. (IF=1.539)
16. **Joshi R**, Shukla A and Kumar P 2013. *In vitro* water deficit stress induced genotypic alterations in protein profile among aromatic rice varieties. ***Annals of Plant Sciences***. 2: 455-458.
17. Kumar G, Kushwaha HR, Punjabi-Sabharwal V, Kumari S, **Joshi R**, Karan R, Mittal S, Singla-Pareek SL and Pareek A 2012. Clustered metallothionein genes are co-regulated in rice and ectopic expression of *OsMT1e-P* confers multiple abiotic stress tolerance in tobacco via ROS scavenging. ***BMC Plant Biology***. 12: 107. (Highly Accessed). (IF=3.670)

18. Bahuguna RN, **Joshi R**, Pandey M, Shukla A and Kumar J 2012. Thiamine primed defense provides reliable alternative to systemic fungicide carbendazim against sheath blight disease in rice (*Oryza sativa* L.). ***Plant Physiology and Biochemistry***. 57: 159-167. (IF=3.404)
19. Sairam RK, Dharmar K, Chinnusamy V, Lekshmy S, **Joshi R** and Bhattacharya P 2012. The role of non-symbiotic haemoglobin and nitric oxide homeostasis in waterlogging tolerance in *Vigna* species. ***Biologia Plantarum***. 56 (3): 528-536. (IF=1.384)
20. Sairam RK, Chinnusamy V, Arora A, Bhattacharya P, **Joshi R** and Trivedi S 2012. Non-symbiotic hemoglobin and nitrate reductase constitute an alternative to fermentation in waterlogging tolerance of mung bean [*Vigna radiata* (L.) Wilczek]. ***Indian Journal of Plant Physiology***. 17(2): 93-102.
21. Sairam RK, Dharmar K, Chinnusamy V, Lekshmy S, **Joshi R** and Bhattacharya P 2011. NADPH oxidase as the source of ROS produced under waterlogging in roots of mung bean. ***Biologia Plantarum***. 55(4): 741-746. (IF=1.384)
22. **Joshi R***, Shukla A and Sairam RK 2011. *In vitro* screening of rice genotypes for drought tolerance using polyethylene glycol. ***Acta Physiologiae Plantarum***. 33(6): 2209-2217. (IF=1.608) *corresponding author
23. Verma D, **Joshi R**, Shukla A and Kumar P 2011. Protocol for *in vitro* somatic embryogenesis and regeneration of rice (*Oryza sativa* L.). ***Indian Journal of Experimental Biology***. 49(12): 958-963. (IF=0.934)
24. Bahuguna RN, **Joshi R**, Singh G, Shukla, A, Gupta R and Bains G 2011. Micropropagation and total alkaloid extraction of *Rauwolfia serpentina*: An important anti-hypersensitive medicinal shrub. ***Indian Journal of Agricultural Sciences***. 81(12): 1124–1129. (IF=0.253)
25. **Joshi R**, Shukla A and Kumar P 2010. Interactive effect of GA₃ and polyamines on *in vitro* somatic embryogenesis from immature embryos in maize (*Zea mays* L.). ***Maydica***. 55: 111-119. (IF=0.578)
26. **Joshi R**, Shukla A, Mani SC and Kumar P 2010. Hypoxia induced non-apoptotic cellular changes during aerenchyma formation in rice (*Oryza sativa* L.) roots. ***Physiology and Molecular Biology of Plants***. 16(1): 99-106. (IF=1.539)
27. **Joshi R**, Shukla A and Kumar P 2010. *In vitro* selection of hill maize (*Zea mays* L.) hybrids for low phosphate tolerance. ***Indian Journal of Plant Physiology***. 15(2): 159-163.
28. **Joshi R**, Shukla A and Kumar P 2009. *In vitro* flowering in hill maize: A novel technique for future. ***Indian Journal of Plant Physiology***. 14(3): 299-302.

Review articles

1. Wungrampha S, **Joshi R**, Singla-Pareek SL and Pareek A 2019. How to survive in salty desert: An adventure study with *Suaeda fruticosa*. ***The Journal of Plant Science Research***. 35(2): 257-261. (Letter to the Editor)
2. **Joshi R**, Singla-Pareek SL and Pareek A 2018. Engineering abiotic stress response in plants for biomass production. ***Journal of Biological Chemistry***. 293: 5035-5043. (IF=4.106).
3. Wani SH, Tripathi P, Zaid A, Challa GS, Kumar A, Kumar V, Upadhyay J, **Joshi R** and Bhatt M 2018. Transcriptional Regulation of Osmotic Stress Tolerance in Wheat (*Triticum aestivum* L.). ***Plant Molecular Biology***. 97(6): 469-487 (IF=3.928)
4. Wungrampha S, **Joshi R**, Singla-Pareek SL and Pareek A 2018. Photosynthesis and salinity: are they mutually exclusive? ***Photosynthetica***. 56(1): 366-381. (IF=2.365).
5. **Joshi R**, Gupta P, Singla-Pareek SL and Pareek A 2017. Biomass production and salinity response in plants: role

of MicroRNAs. *Indian Journal of Plant Physiology*. 22: 448-457. (Special Issue: Small RNAs: Regulators of plant development and climate resilience)

6. **Joshi R**, Wani SH, Singh B, Bohra A, Dar ZA, Lone AA, Pareek A and Singla-Pareek SL 2016. Transcription factors and plant response to drought stress: Current understanding and future directions. *Frontiers in Plant Science*. 7: 1029. (IF=4.106)
7. Bohra A, Sahrawat KL, Kumar S, **Joshi R**, Parihar AK, Singh U, Singh D and Singh NP 2015. Genetics and genomics based interventions for nutritional enhancement of grain-legume crops: Status and outlook. *Journal of Applied Genetics*. 56: 151-161. (IF=1.384)
8. Singh B, Bohra A, Mishra S, **Joshi R** and Pandey S 2015. Embracing new-generation 'omics' tools to improve drought tolerance in cereal and food-legume crops. *Biologia Plantarum*. 59 (3): 413-428. (IF=1.384).
9. **Joshi R** and Kumar P 2013. Regulation of somatic embryogenesis in crops: A review. *Agricultural Reviews*. 34(1): 1-20.
10. **Joshi R** and Kumar P 2012. Lysigenous aerenchyma formation involves non-apoptotic programmed cell death in rice roots. *Physiology and Molecular Biology of Plants*. 18(1): 1-9. (IF=1.539)
11. **Joshi R** and Kumar P 2012. Aerobic Rice: An option for growing rice under limited water availability. *Indian Farming*. 62(2): 11-14.
12. **Joshi R**, Nailwal TK, Tewari LM and Shukla A 2010. Exploring biotechnology for conserving himalayan biodiversity. *Life Science Journal*. 7(3): 20-28.
13. **Joshi R***, Mani SC, Shukla A and Pant RC 2009. Aerobic rice: water use sustainability. *Oryza*. 46(1): 1-5.
*corresponding author

Other Publications

1. **Joshi R** 2020. Flow Cytometer: applications in immunophenotyping. *Medical Buyer magazine*. XVIII (5): 53 Second Opinion.
2. **Joshi R** 2019. Some like it hot: DNA amplification using thermal cyclers. *Medical Buyer magazine*. XVII (9): 63 Second Opinion.
3. **Joshi R** 2019. Electrophoresis: State of art technology for Past, Present and Future. *Medical Buyer magazine*. XVII (5): 55. Second Opinion.
4. **Joshi R** 2018. DNA Microarray Technology: Beyond Molecular Profiling. *Medical Buyer magazine*. XVI (11): 75. Guest Column.
5. **Joshi R** 2018. Polymerase Chain Reaction: A Revolutionary Invention. *Medical Buyer magazine*. XVI (9): 70. Guest Column.
6. Kumar P and **Joshi R** 2011. वायवीय (ऐरोबिक) धान: जल की अपर्याप्तता में धान की खेती का विकल्प। प्रसार दूत। 15(1): 17-19.

Book Chapters

1. Upadhayay J, Rana M, Juyal V, Bisht SS, **Joshi R*** 2020. Impact of pesticide exposure and associated health effects. In: Srivastava PK, Singh VP, Singh A, Tripathi DK, Singh S, Prasad SM, Chauhan DK (Eds.)

Pesticides in Crop Production: Physiological and Biochemical Action. John Wiley & Sons, USA. Pp 69-88. (ISBN: 978-1-119-43219-7). *** Corresponding Author**

2. **Joshi R.**, Gupta BK, Pareek A, Singh MB, Singla-Pareek SL 2019. Functional genomics approach towards dissecting out abiotic stress tolerance trait in plants. In: Rajpal V., Sehgal D., Kumar A., Raina S. (eds) Genetic enhancement of crops for tolerance to abiotic stress: Mechanisms and approaches, Vol. I. Sustainable development and biodiversity, vol 20. Springer, Cham. Pp 1-24. (ISBN: 978-3-319-91956-0).
3. **Joshi R**, Dkhar J, Singla-Pareek SL and Pareek A 2019. Molecular mechanism and signaling response of heavy metal stress tolerance in plants. In: Srivastava S., Srivastava A., Suprasanna P. (eds) Plant-Metal Interactions. Springer, Cham. Pp 29-47 (ISBN: 978-3-030-20731-1).
4. Singh B, Mishra S, Bohra A, **Joshi R*** and Siddique KHM 2018. Crop phenomics for abiotic stress tolerance in crop plants. In: Biochemical, physiological and molecular avenues for combating abiotic stress tolerance in plants. Wani SH (Ed.), Academic Press, USA. Pp 277-296. (ISBN: 9780128130667). *** Corresponding Author**
5. **Joshi R***, Singh B and Chinnusamy V 2018. Genetically engineering cold stress-tolerant crops: Approaches and challenges. In: Cold tolerance in plants: Physiological, molecular and genetic perspectives. Wani SH and Herath V (Eds.), Springer, Switzerland. Pp 179-195. (ISBN: 978-3-030-01414-8). *** Corresponding Author**
6. **Joshi R**, Anwar K., Das P, Singla-Pareek SL, Pareek A 2017. Overview of methods for assessing salinity and drought tolerance of transgenic wheat lines. In: Bhalla P., Singh M. (eds) Wheat Biotechnology. Methods in Molecular Biology, vol 1679. Humana Press, New York, NY. Pp 83-95. (ISBN: 978-1-4939-7337-8). **(IF= 10.71)**
7. Bohra A, Pareek S, Jha R, Saxena RK, Singh IP, Pandey G, Mishra RK, Singh F, Kaashyap M, **Joshi R** and Varshney RK 2017. Modern Genomic Tools for Pigeonpea Improvement: Status and Prospects. In: Varshney RK., Saxena RK., Jackson SA. (eds) The Pigeonpea Genome. Compendium of Plant Genomes. Springer, Cham. Pp 41-54. (ISBN: 978-3-319-63797-6).
8. Upadhyay J, **Joshi R**, Singh B, Bohra A, Vijayan R, Bhatt M, Bisht SPS and Wani SH 2017. Application of bioinformatics in understanding of plant stress tolerance. In: Plant Bioinformatics: Decoding the phyta, Hakeem, K; Malik, A., Vardar-Sukan, F. and Ozturk, M. (Eds.), Springer, Cham. Pp 347-374. (ISBN 978-3-319-67155-0).
9. Gupta BK, **Joshi R**, Pareek A and Singla-Pareek SL 2017. Transgenic Approaches to Improve the Crop Productivity via Phytohormonal Research: A Focus on Mechanism of Phytohormone Action. In: Mechanism of Plant Hormone Signaling under Stress: A Functional Genomic Frontier, 2nd Volume, Pandey, GK (Ed.), John Wiley & Sons, Inc., Hoboken, NJ, USA. Pp 533-567. (ISBN- 9781118889022).
10. **Joshi R***, Pareek A and Singla-Pareek SL 2016. Plant Metallothioneins: Classification, distribution, function and regulation. In: Plant Metal Interaction: Emerging Remediation Technologies. Ahmad, P. (Ed.), Elsevier USA. Pp 239-262. (ISBN: 978-0-12-803158-2). ***corresponding author**
11. **Joshi R***, Singh B, Bohra A and Chinnusamy V 2015. Salt stress signalling pathways: specificity and crosstalk. In: Managing salinity tolerance in plants: molecular and genomic perspectives. Wani SH and Hossain MA (Eds.), CRC Press, Boca Raton, FL 33487, USA. Pp 51-78 (ISBN: 9781482245134). ***corresponding author**
12. **Joshi R**, Ramanarao MV, Bedre R, Sanchez L, Pilcher W, Zandkarimi H and Baisakh N 2015. Salt adaptation mechanisms of halophytes: Improvement of salt tolerance in crop plants. In: Elucidation of abiotic stress signaling in plants: Functional genomics perspectives, Vol 2. Pandey, GK (Ed.), Springer, New York. Pp 243-280. (ISBN: 978-1-4939-2539-1).

13. Gupta BK, Tripathi AK, **Joshi R**, Pareek A and Singla-Pareek SL 2015. Designing climate-smart future crops employing signal transduction components. In: Elucidation of abiotic stress signaling in plants: Functional genomics perspectives, Vol 2. Pandey, GK (Ed.), Springer, New York. Pp 393-414. (ISBN: 978-1-4939-2539-1).
14. **Joshi R*** and Chinnusamy V. 2014. Antioxidant enzymes: Defense against high temperature stress. In: Oxidative damage to plants: antioxidant networks and signaling. Ahmad, P. (Ed.), Elsevier USA. Pp 369-396. (ISBN: 978-0-12-799963-0). ***corresponding author**
15. **Joshi R** and Karan R. 2014. Physiological, biochemical and molecular mechanisms of drought tolerance in plants. In: Molecular approaches in plant abiotic stress. Gaur, R.K. and Sharma, P. (eds.), CRC Press, Boca Raton, FL 33487, USA. Pp 209-231. (ISBN 9781466588936)
16. **Joshi R**, Karan R, Singla-Pareek SL and Pareek A 2012. Microarray technology. In: Biotechnology in Medicine and Agriculture: Principles and Practices. A.K. Gupta, A. Pareek, S.M. Gupta (eds.), IK International Publishing House Pvt. Ltd., India. Pp 273-296. (ISBN-13: 978-9381141403).
17. **Joshi R**, Shankhadhar SC, Shankhadhar D, Bains G, Guru SK, Shukla A and Singh M 2007. Laboratory manual for post graduates plant physiology. Deptt of Plant Physiology, College of Basic Sciences and Humanities, G.B.P.U.A&T., Pantnagar, Uttarakhand.

Sequences submitted to NCBI

Accession numbers: JQ345701; JX134602; JX426616; KU891669; KU891670; KU891671; KU891672; KU891673

Oral Presentations

1. **Joshi R** 2020. Plant stress physiology: Paving the way of life for abiotic stress tolerance. National Symposium on Trends in Plant Biotechnology & Agriculture and 41st Annual Meeting of Plant Tissue Culture Association of India. 6-8th February, Thapar institute of Engineering and Technology, Patiala, Punjab. **[Member PTCA(I) presentation]**
2. **Joshi R**, Singla-Pareek SL and Pareek A 2019. Learning lessons from traditional rice Pokkali: How to detoxify inside when there is so much toxicity outside. European Molecular Biology Organization (EMBO) symposium on "Sensing and signalling in plant stress response". 15-17th April, Jawaharlal Nehru University, New Delhi, India. **[Lightning Talk, Third Prize]**
3. **Joshi R**, Singla-Pareek SL and Pareek A 2019. Unleashing the potential of pokkali metallothionein gene: lessons to combat climate change. ICGEB workshop on "Plant Stress Biology and Food Security". 18-20th April, International Centre for Genetic Engineering and Biotechnology, New Delhi, India. **[Young Investigator Presentation]**
4. **Joshi R**, Singla-Pareek SL and Pareek A 2019. Molecular characterization of metallothionein gene and its promoter for sustainable biosaline farming. Biosparks 2019. 10th March, Jawaharlal Nehru University, New Delhi, India.
5. **Joshi R**, Singla-Pareek SL and Pareek A 2018. Functional dissection of a multi-stress inducible gene OsMT1e-P and its promoter to divulge complex stress tolerance mechanism in plants. 4th Worldwide Universities Network on Climate resilient open partnership for food security (CROP-FS). 7-8th December, Jawaharlal Nehru University, New Delhi, India. P-11. **[Invited Talk]**
6. **Joshi R**, Singla-Pareek SL and Pareek A 2017. Functional dissection of a multiple stress inducible metallothionein gene and its promoter from a naturally salt tolerant rice. 5th National Seminar on Climate Resilient Saline

- Agriculture: Sustaining Livelihood Security, 21-23 January, Swami Keshwanand Rajasthan Agricultural University, Bikaner (Rajasthan), India [**Young Scientist Presentation, ISSWQ**].
7. **Joshi R**, Singla-Pareek SL and Pareek A 2016. Molecular cloning and characterization of metallothionein gene promoter from *Oryza sativa* cv. Pokkali (OsMT1e-P). National Conference of Plant Physiology on Challenges in Crop Physiology Research: from Molecular to Whole Plant, 8-10th December. Department of Crop Physiology, University of Agricultural Sciences, Bengaluru, India. [**Young Scientist Award, ISPP**]
 8. **Joshi R**, Sairam RK, Bhattacharya P, Lekshmy S and Chinnusamy V 2011. Expression of antioxidant defence genes in mung bean (*Vigna radiata* L.) roots under water-logging is associated with hypoxia tolerance. National Seminar on sustainable crop productivity through physiological intervention; 24-26 november. Ramnarain Ruia College, Matunga, Mumbai. Pp.171. [**Young Scientist Presentation, ISPP**]
 9. **Joshi R**, Shukla A and Sairam RK 2009. *In vitro* screening of rice genotypes for drought tolerance by polyethylene glycol induced stress. National conference on frontiers in Plant Physiology towards sustainable agriculture. 5-7 November, Assam Agriculture University. Jorhat. P-260. [**Young Scientist Presentation, ISPP**]
 10. **Joshi R**, Shukla A and Pant RC 2004. Electrophoretic analysis of phosphorus deprived proteins in maize (*Zea mays* L.) through *in vitro* culture. National Seminar on Plant Physiology, Dec. 27-29. Pune University P.70.

Poster presentations at Conferences/Seminars/Symposiums

1. **Joshi R**, Singla-Pareek SL and Pareek A 2019. Rice MATH domain containing protein (MDCP) functions as a positive regulator of biotic and abiotic stress response. National Conference of Plant Physiology “Plant productivity and stress management”, 19-25th December. Kerela Agricultural University, Thrissur, Kerela. P-134.
2. Wungrampha S, Rathore R, **Joshi R**, Dkhar J, Singla-Pareek SL and Pareek A 2019. How to survive in a salty desert? European Molecular Biology Organization (EMBO) symposium on “Sensing and signalling in plant stress response”. 15-17th April, Jawaharlal Nehru University, New Delhi, India.
3. Gupta BK, **Joshi R**, Pareek A and Singla-Pareek SL 2019. Closing Yield Gaps: How Sustainable Can We Be? European Molecular Biology Organization (EMBO) symposium on “Sensing and signalling in plant stress response”. 15-17th April, Jawaharlal Nehru University, New Delhi, India.
4. Wungrampha S, Dkhar J, **Joshi R**, Singla-Pareek SL and Pareek A 2019. Salt; to combat, adapt and survive. ICGEB workshop on “Plant Stress Biology and Food Security”. 18-20th April, International Centre for Genetic Engineering and Biotechnology, New Delhi, India. P-21
5. Gupta BK, **Joshi R**, Pareek A and Singla-Pareek SL 2019. Tailoring rice for higher yield and stress tolerance. ICGEB workshop on “Plant Stress Biology and Food Security”. 18-20th April, International Centre for Genetic Engineering and Biotechnology, New Delhi, India. P-36
6. **Joshi R**, Singla-Pareek SL and Pareek A 2020. Molecular characterization of metallothionein gene and its promoter for sustainable biosaline farming. BIOSPARK. Jawaharlal Nehru University, New Delhi, India.
7. Wungrampha S, Dkhar J, **Joshi R**, Singla-Pareek SL and Pareek A 2019. Suaeda fruticosa; amultitasker stress tolerant plant. BIOSPARK. Jawaharlal Nehru University, New Delhi, India.
8. **Joshi R**, Singla-Pareek SL and Pareek A 2018. Functional characterization of a stress-associated gene OsMT1e-P and its promoter to delineate multiple abiotic stress tolerance mechanism in plants. 4th International Plant Physiology Congress, 2-5th December. CSIR-NBRI, Lucknow.
9. **Joshi R**, Kushwaha HR, Pareek A and Singla-Pareek SL 2018. Genome-wide identification, characterization and expression profile analysis of MDCP family in Arabidopsis and Rice. 4th International Plant Physiology Congress, 2-5th December. CSIR-NBRI, Lucknow.
10. Rathor RS, Gaba Y, **Joshi R**, Mishra M, Gupta B, Pareek A and Singla-Pareek SL 2018. “HEADING” towards climate-smart agriculture and sustainable food security. 4th International Plant Physiology Congress, 2-5th December. CSIR-NBRI, Lucknow.

11. Gupta BK, **Joshi R**, Pareek A and Singla-Pareek SL 2018. Tailoring Rice for Higher Yield and Stress Tolerance. 4th Worldwide Universities Network on Climate resilient open partnership for food security (CROP-FS). 7-8th December, Jawaharlal Nehru University, New Delhi, India. P-20
12. Lakra N, **Joshi R**, Wungrampha S, Singla Pareek SL and Pareek A 2018. From “Meta-OMICS” to “allele mining” for improving stress tolerance in rice. 87th Annual Conference of Society of Biological Chemists (Genome Biology in Health and Disease), 25-27th November, School of Life Sciences, Manipal Academy of Higher Education, Manipal.
13. Gupta BK, **Joshi R**, Pareek A and Singla-Pareek SL 2018. Closing Yield Gaps: How Sustainable Can We Be? 4th India International Science Festival 2018. 5-8th October, Indira Gandhi Pratishthan, Lucknow. P-49
14. Gupta BK, **Joshi R**, Pareek A and Singla-Pareek SL 2018. Designing climate smart rice with higher yield. National Conference on Impact of Climate Change on Indian Agriculture and Plant Productivity. 23-24th March. School of Life Sciences, Jawaharlal Nehru University, New Delhi. P-22.
15. Wungrampha S, **Joshi R**, Singla-Pareek SL and Pareek A 2018. Photosynthesis and salinity: from halophytes to crop plants. National Conference on Impact of Climate Change on Indian Agriculture and Plant Productivity. 23-24th March. School of Life Sciences, Jawaharlal Nehru University, New Delhi. P-46.
16. Gupta BK, **Joshi R**, Pareek A and Singla-Pareek SL 2018. Tailoring rice for higher yield and stress tolerance. National Conference on Impact of Climate Change on Indian Agriculture and Plant Productivity. 23-24th March. School of Life Sciences, Jawaharlal Nehru University, New Delhi. P-55.
17. **Joshi R**, Singla-Pareek SL and Pareek A 2018. Functional evaluation of a multiple stress inducible metallothionein gene and its promoter from naturally salt tolerant rice. National Symposium of Plant Biotechnology & 38th Annual Meeting of the Plant Tissue Culture Association (India), 16-18 February. Arid Forest Research Institute, Jodhpur. P-70. [**Best Poster Award**]
18. Gupta BK, **Joshi R**, Pareek A and Singla-Pareek SL 2017. Enhancing grain yield by silencing cytokinin oxidase. 86th Conference of Society of Biological Chemists, “Emerging discoveries in health and agricultural sciences”. 16-19 November, Jawaharlal Nehru University, New Delhi. P-362.
19. Sahoo KK, Gupta BK, **Joshi R**, Tripathi AK, Pareek A and Singla-Pareek SL 2015. Tailoring rice plants for higher yield via genetic manipulation for ion partitioning, cellular detoxification and cytokinin metabolism. Concurrent session-II. 3rd International Plant Physiology Congress: Challenges and strategies in plant biology research. 11-14 December. Jawaharlal Nehru University, New Delhi, India. P-27.
20. Gupta BK, **Joshi R** and Singla-Pareek SL 2015. Enhancing grain yield by silencing cytokinin oxidase. ISIN-2017, In-House symposium of ICGEB, New Delhi. 18 July.
21. **Joshi R**, Sahoo KK, Tripathi AK, Pareek A and Singla-Pareek SL 2015. Silencing of *O_sCKX2* enhances panicle branching resulting in improved grain yield in rice under both normal and salinity stress conditions. 3rd International Plant Physiology Congress: Challenges and strategies in plant biology research. 11-14 December. Jawaharlal Nehru University, New Delhi, India. P-281.
22. Mangu V, Timm LS, **Joshi Rohit**, Bedre R and Baisakh N (2014). Translation of halophyte transcriptome resources to improve salt and drought stress tolerance in rice. American Society of Agronomy, Crop Science Society of America, Soil Science Society of America International Annual Meeting, “Grand Challenges-Great Solutions”. 2-5 November. Long Beach, CA, USA. (C07 Genomics, Molecular Genetics & Biotechnology). O-126-4
23. **Joshi R**, Sahoo KK, Tripathi AK, Kumar R, Teotia PS, Pareek A and Singla-Pareek SL 2013. Knockdown of a floral meristem specific cytokinin oxidase - *O_sCKX2* in rice reduces yield penalty under abiotic stress conditions. 11th ISRFG, International Symposium on Rice Functional Genomics: Sustaining Food and Nutritional Security. 20-23 November. National Institute of Plant Genome Research, New Delhi, India. PII-68 (Architecture & Development); P-85.
24. **Joshi R**, Shukla A and Kumar P 2012. Combined effect of polyamines and GA3 on *in vitro* somatic embryogenesis in maize (*Zea mays* L.). International Conference on Plant Biotechnology for Food Security:

- New Frontiers; 21-24 February. National Agriculture Science Centre Pusa, New Delhi, India. P-29.
25. Bhattacharya P, **Joshi R**, Sairam RK, Chinnusamy V and Lekshmy S 2012. Identification and characterization of NADH kinase with a possible role in water-logging tolerance. International Conference on Plant Biotechnology for Food Security: New Frontiers; 21-24 February. National Agriculture Science Centre Pusa, New Delhi, India. P-105.
 26. **Joshi R**, Shukla A and Kumar P 2011. Non-Apoptotic Programmed Cell Death in Rice (*Oryza sativa* L.) root during Aerenchyma Formation. National Seminar on sustainable crop productivity through physiological intervention; 24-26 november. Ramnarain Ruia College, Matunga, Mumbai. Pp.143.
 27. **Joshi R**, Kumar P and Shukla A 2011. Identification of low phosphate tolerant maize hybrids *in vitro* for north western Himalaya. National symposium on advances in biotechnological research in agri-horticultural crops for sustaining productivity, quality improvement & food security. 14-16 September. Sardar Vallabhbhai Patel University of Agri. & Tech., Meerut (U.P.). P-97
 28. **Joshi R**, Kumar P and Shukla A 2011. *In vitro* flowering in hill maize (*Zea mays* L.): An innovative tools for basic and applied research in future. National symposium on advances in biotechnological research in agri-horticultural crops for sustaining productivity, quality improvement & food security. 14-16 September. Sardar Vallabhbhai Patel University of Agri. & Tech., Meerut (U.P.). P-96
 29. Bhattacharya P, **Joshi R**, Sairam RK, Lekshmy S and Chinnusamy V 2011. NADPH oxidase as the source of ROS produced under waterlogging in roots of mung bean (*Vigna radiata* L.). National Seminar on sustainable crop productivity through physiological intervention; 24-26 november. Ramnarain Ruia College, Matunga, Mumbai. Pp. 32.
 30. **Joshi R**, Bhattacharya P, Sairam RK, Lekshmy S and Chinnusamy V 2011. Non-symbiotic haemoglobin and nitric oxide homeostasis as an alternative to fermentation for waterlogging tolerance in *Vigna sps*. National Seminar on sustainable crop productivity through physiological intervention; 24-26 november. Ramnarain Ruia College, Matunga, Mumbai. Pp. 66.
 31. **Joshi R**, Shukla A and Kumar P 2011. Aerobic rice technology assessment: A way forward for changing climate scenario. Zonal seminar on plant stress physiology in perspectives of agri-horticulture and climate change. 25th February. SKN college of Agriculture, Jobner, India. P-21.
 32. Kumar P, Sharma RK, Prasad NK and **Joshi R** 2010. Photosynthetic and yield response of rice genotypes to varying N levels under low temperature conditions in hills. 5th International Nitrogen Conference 2010. 3- 7 December. New Delhi, India.
 33. **Joshi R**, Bhattacharya P, Lekshmy S and Sairam RK 2010. Physiological traits to screen mungbean genotypes for waterlogging tolerance in a subtropical environment. National conference of Plant Physiology on physiological and molecular approaches for crop improvement under changing environment. 25-27 November. Banaras Hindu University, Uttar Pradesh, India. P-125.
 34. Karan R, **Joshi R**, Singla-Pareek SL and Pareek A 2010. OsPGK2 is regulated by salinity stress and its overexpression improves salinity tolerance in tobacco. Indo-US bilateral workshop on plant genomics in crop improvement with reference to biotic and abiotic stresses. 25- 27 February. Department of Biotechnology and Molecular Biology. CCSHAU, Hisar. Pp.31-32.
 35. **Joshi R**, Shukla A and Kumar P 2009. Physiological evaluation of rice genotypes for aerobic conditions in foot hills. Zonal seminar on abiotic stress tolerance in plants-physiological and biotechnological approaches. (Eco-physiological process in stress management). 05 December. CCSHAU, Hisar. P-53.
 36. **Joshi R**, Shukla A, Mani SC and Pant RC 2007. Physiological and biochemical evaluation of hybrid rice varieties under aerobic conditions. National symposium on research priorities and strategies in rice production system for second green revolution, November 20-22. CRRI, Cuttack, Orissa. P. 124.
 37. **Joshi R**, Shukla A and Pant RC 2006. Is it feasible for rice to grow as aerobic rice. International meeting on biotic and abiotic stress responses in plants, December 11-13. International Center for Genetic engineering and Biotechnology, New Delhi P.22.

38. **Joshi R**, Shankhadhar SC, Shukla A and Pant RC 2006. Physiological effect of water on different cultivars of rice (*Oryza sativa* L.). National Seminar on Plant Physiology (Physiological and Molecular Approaches for the improvement of agricultural, horticultural and forestry crops). College of Horticulture, Kerala Agricultural University, Vellanikkara, Thrissur. P. 218 (11-10).
39. **Joshi R**, Shukla A and Pant RC 2004. *In-vitro* involvement of GA and polyamines in triggering shoot clones in maize (*Zea mays* L.). 73rd Annual Meeting of Society of Biological Chemists (India), Nov. 21-24. G.B. Pant University of Agriculture and Technology, Pantnagar. P-161.
40. Bhandari K, Mehra N, **Joshi R**, Tewari SK, Shukla A and Pant RC 2004. *In vitro* regeneration in Bamboo (*Dendrocalamus strictus*). 73rd Annual Meeting of Society of Biological Chemists (India), Nov. 21-24. G.B. Pant University of Agriculture and Technology, Pantnagar. P-179.
41. Verma N, Gomathi KA, **Joshi R**, Shukla A and Pant RC 2004. Use of Random Amplified Polymorphic DNA (RAPD) markers to reveal genetic diversity of *in vitro* and field grown varieties of sugarcane (*Saccharum officinarum* L.). 73rd Annual Meeting of Society of Biological Chemists (India), Nov. 21-24. G.B. Pant University of Agriculture and Technology, Pantnagar. P-168.
42. Verma N, **Joshi R**, Shukla A and Pant RC 2004. Effect of polyamines on *in vitro* studies in sugarcane (*Saccharum officinarum* L.). 73rd Annual Meeting of Society of Biological Chemists (India), Nov. 21-24. G.B. Pant University of Agriculture and Technology, Pantnagar. P-178.
43. **Joshi R**, Shukla A and Pant RC 2003. *In-vitro* morphogenetic response of hill varieties of maize (*Zea mays* L.). National Symposium on “Improving crop productivity in an eco-friendly environment: Physiological and molecular approaches”, Oct 15-17. G. B. Pant University of Agriculture & Technology. Pantnagar: P/V/15 (Plant, Growth and Development) P-98. [**Best Poster Award**]

Workshops and Trainings

- 1- Workshop on “Plant Stress Biology and food security”, organized by Plant Stress Biology Group, International Center for Genetic Engineering and Biotechnology, New Delhi, from 18-20th April, 2019.
- 2- 4th Worldwide Universities Network (WUN) on “Climate resilient open partnership for food security (CROP-FS)”, organized by Jawaharlal Nehru University and International Center for Genetic Engineering and Biotechnology, New Delhi, from 7-8th December, 2018.
- 3- Global Initiative of Academic Networks (GIAN) course “Food for Healthy Planet” organized at JNU, New Delhi, by IIT-Kharagpur and Ministry of Human Resource Development, from 2nd–7th April 2018.
- 4- National Conference on “Impact of climate change on Indian agriculture and plant productivity” at School of Life Sciences, JNU, New Delhi and The Society for science of climate change and sustainable environment and Prof H.S. Srivastava Foundation and SEARCH Foundation and GRC India, from 23rd-24th march, 2018.
- 5- National Symposium on Photosynthesis at Bioenergetics and biotechnology laboratory, Mohanlal Sukhadia University, Udaipur, 8th-9th December, 2017.
- 6- A seminar cum workshop on “Hands on training on a LIMS based portal for plant metabolomics, CCPM ver3.4” organized by JNU, New Delhi and IIT-Hyderabad, on 21st April 2015.
- 7- National seminar on “Innovative saline agriculture in changing environment” organized by Indian Society of Soil Salinity and Water Quality, Karnal, at Gwalior from December 12-14th 2014.
- 8- National conference on “Science of omics for agricultural productivity: future prospects” organized by Department of Molecular Biology and Genetic Engineering, College of Basic Sciences and Humanities, G.B. Pant University of agriculture and Technology, Pantnagar, Uttarakhand from March, 4-6th 2014.
- 9- Workshop on “Creation and management of biological databases” at G.B.P.U.A.&T., Pantnagar from 22-24th Feb., 2007.
- 10- National seminar on “Biotechnology innovation systems of India: Policy measures and support mechanisms” at Department of Biotechnology Kumaon University, Nainital from 6-7th Oct, 2006.
- 11- Workshop on “Bio safety issues in the management of genetically modified crops” at G.B.P.U.A.&T., Pantnagar from 3-10th July, 2006.

- 12- Workshop on “Watershed management for sustainable production, livelihood and environmental security (WAMSP-2005)” at G.B.P.U.A.&T., Pantnagar from 19-21st May, 2005.
- 13- Workshop on “Intellectual Property Rights” at G.B.P.U.A.&T., Pantnagar from 5-6th Aug., 2005.
- 14- Workshop on “Linux for biotechnological applications” at G.B.P.U.A.&T., Pantnagar from 30-31st March, 2005.
- 15- Workshop on “Gene Mining from Genomics” at G.B.P.U.A.&T., Pantnagar from 2-4th Sep., 2004.

Awards, Scholarships and Professional affiliation

- 1- **Assistant Professor** (Biological Sciences) in Academy of Scientific and Innovative Research (ACSIR) (2020).
- 2- Member of “CSIR Integrated Skill Initiative” committee, CSIR-IHBT (2019-20)
- 3- Member of “DBT Skill Vigyan Program” committee, CSIR-IHBT (2020)
- 4- Photo credit in **Journal of Experimental Botany** editorial 71(2):451-456 (2020)
- 5- NTA Observer for online CSIR-NET exam at Himachal Institute of Engineering and Technology, Shahpur, Kangra on 15th December 2019.
- 6- Member of Institutional screening cum selection committee (Biological Sciences) for PhD admissions in ACSIR (2019)
- 7- **Third Prize** in the Lightning Talk session of India-EMBO symposium 2019 entitled “Sensing and signaling in plant stress response”. New Delhi.
- 8- **Designed the cover page** of Journal of Biological Chemistry, 293(14) (2018)
- 9- **R.D. Asana Gold Medal Award** (2018) awarded by Indian Society for Plant Physiology, IARI, New Delhi.
- 10- **Dr. D.S. Kothari Post Doctoral Fellowship** (2016) awarded by University Grants Commission (UGC), Government of India.
- 11- **Start-Up Research Grant (Young Scientists)-Life Sciences** (2013) awarded by Science and Engineering Research Board, Government of India.
- 12- Visiting postdoctoral researcher in **National Science Foundation** funded project 2012 (to work at Louisiana State University, Baton Rouge, LA, USA)
- 13- **Young Scientist Award** (2016), Indian Society for Plant Physiology, IARI, New Delhi
- 14- **Best Poster Award** (2018), National Symposium of Plant Biotechnology & 38th Annual Meeting of the Plant Tissue Culture Association (India), February 16-18. Arid Forest Research Institute, Jodhpur. P-70.
- 15- **Best Poster Award** (2003), National Symposium on “Improving crop productivity in an eco-friendly environment: Physiological and molecular approaches”, Oct 15-17. G. B. Pant University of Agriculture & Technology, Pantnagar: P/V/15 (Plant, Growth and Development) P-98.
- 16- **Merit-Cum-Mean Fellowship** by G. B. Pant University of Agriculture and Technology, Pantnagar, India, from August 2004 to August 2007 during Ph.D.
- 17- **1st position** in science quiz organized by Govt. Inter College, Almora, 1997

Society Membership

- 1- Life Member of Indian Society for Plant Physiology, New Delhi, India
- 2- Life Member of The Horticultural Society of India, New Delhi, India
- 3- Life Member of Society for Plant Biochemistry and Biotechnology, New Delhi, India (No. L-606)
- 4- Life Member of Indian Science Congress Association, Kolkata, India (No. L15234)
- 5- Life Member of Society for Plant Physiology and Biochemistry, New Delhi, India
- 6- Life Member of Indian Society of Soil Science and Water Quality, CSSRI, Karnal, India
- 7- Life Member of Association of Rice Research Workers, ICAR-NRRI, Cuttack, India
- 8- Life Member of Society of Biological Chemists, IISc, Bangalore, India
- 9- Life Member of Global Initiative of Academic Networks (GIAN), Ministry of Human Resource Development

- 10- Life Member of Alumni Almamater Advancement Association (4A), G. B. Pant Univ. of Agric. and Tech., Pantnagar, Uttarakhand, India
- 11- Member of American Society of Plant Biologists, USA
- 12- Member of American Association for the Advancement of Science, USA

Editor/ Reviewer

- 1- **Editor**, Frontiers in Plant Science, Plant Abiotic Stress section.
- 2- **Editor**, International Journal of Agricultural Science and Food Technology (ISSN: 2455-815X).
- 3- **Reviewer** of “Scheme for Promotion of Academic and Research Collaboration (SPARC)” projects, Ministry of Human Resource Development (MHRD), India.
- 4- **Reviewer** in peer reviewed journals:

Acta Physiologiae Plantarum	Scientific Reports
Plos One	Academia Journal of Food Research
Indian Journal of Plant Physiology	African Journal of Agricultural Research
International Journal of Biological Macromolecules	Algal Research
Plant Physiology and Biochemistry	Comprehensive Reviews in Food Science and Food Safety
Current Plant Biology	Ecotoxicology and Environmental Safety
BMC Plant Biology	Environmental Toxicology and Pharmacology
Biomass and Bioenergy	Frontiers in Microbiology
Photosynthetica	Functional Plant Biology
Plant Cell, Tissue and Organ Culture	Indian Journal of Genetics and Plant Breeding
Agronomy Journal	Journal of Crop Improvement
Brazilian Journal of Pharmaceutical Sciences	Journal of Photochemistry and Photobiology B: Biology
Caryologia	Journal of Plant Biochemistry and Biotechnology
Frontiers in Genetics	Plant Breeding
Gene	Plant Gene
Journal of Plant Growth Regulation	Plant Molecular Biology Reporter