

Rajesh Kalladan

Assistant Professor, Plant Physiology,
Regional Agricultural Research Station
(RARS),
Pilicode-671310.
Kasarkode, Kerala.

Address:

Hrudyam, Meengoth, Ambalathara,
Pullur, kasarkode-571531.

E mail: rajesh.kalladan@kau.in
kalladanrajesh@gmail.com

RESEARCH INTEREST

My research interest includes crop yield/productivity in general and also under various abiotic stresses, especially drought. I am also interested in utilizing genetic diversity for enhancing yield traits in rice.

RESEARCH EXPERIENCE

Assistant Professor- Plant Physiology, Kerala Agriculture University	Since 2021
Assistant Professor- Plant Physiology (contract)- RARS, Pilicode-	2018- 2020
Postdoctoral fellow	
1. Institute of Plant and Microbial Biology, Academia Sinica, Taipei	2013-2017
2. Stress Genomics Group, Department of Molecular Genetics, IPK, Germany.	2012
Senior Research Fellow	2007
Department of Plant Molecular Biology, International Centre for Genetic Engineering and Biotechnology, New Delhi, India.	
Junior Research Fellow	2004-2007
Department of Microbiology, Central Food Technological Research Institute, Mysore, India.	

EDUCATION**PhD in Plant Biology- 2013**

Institute of Plant Genetics and Crop Plant Research (IPK), Gatersleben, Germany.

Master in Crop Physiology- 2004.

University of Agricultural Sciences (UAS), Bangalore, India.

Bachelor in Agriculture- 2001

Pandit Jawaharlal Nehru College of Agriculture and Research Institute, Karaikal, India.

AREA OF SPECIALIZATION

Crop yield, drought

RESEARCH PROJECTS

SRG-SERB-2022. Understanding the molecular mechanism of dwarfism in the cashew variety, Nihara using Bulk segregant RNA sequencing.

PUBLICATIONS

Rajesh Kalladan, Jesse R. Lasky, Sandeep Sharma, M. Nagaraj Kumar, Thomas E. Juenger, Paul E. Verslues. Natural variation in 9-cis-epoxycartenoid dioxygenase 3 (NCED3) and ABA accumulation. *Plant Physiology*. 2019. DOI: <https://doi.org/10.1104/pp.18.01185>.

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Rajesh Kalladan, Jesse R. Lasky, Trent Z Chang, Sandeep Sharma, Thomas E. Juenger, Paul E. Verslues. Natural variation and new regulatory genes controlling drought-induced Absciscic Acid accumulation in *Arabidopsis thaliana*. *Proceedings of the National Academy of Sciences of the United States of America*, 114:11536-11541, 2017. <https://doi.org/10.1073/pnas.170588411> ISSN-0027-8424.

K. Rajesh, S. Worch, H. Rolletschek, V.T. Harshavardhan, L. Kuntze, C. Seiler, N. Sreenivasulu, M.S. Röder. Identification of quantitative trait loci contributing to yield and seed quality parameters under terminal drought in advanced backcross barley lines. *Molecular Breeding*, 32:71-90, 2013. <https://doi.org/10.1007/s11032-013-9853-9> 1572-9788

S. Worch, **K. Rajesh**, V.T. Harshavardhan, C. Pietsch, V. Korzun, L. Kuntze, A. Borner, U. Wobus, M.S. Roder and N. Sreenivasulu. Haplotyping, linkage mapping and expression analysis of barley genes regulated by terminal drought stress influencing seed quality. *BMC Plant Biology*, 11: 1, 2011. <https://doi.org/10.1186/1471-2229-11-1> 1471-2229

C. Seiler, V.T. Harshavardhan, **K. Rajesh**, M. Strickert, H. Rolletschek, U.Scholz, U., Wobus and N.Sreenivasulu. ABA biosynthesis and degradation contributing to ABA homeostasis during barley seed development under control and terminal drought stress conditions. *Journal of Experimental Botany*, 62: 2615-2632, 2011. <https://doi.org/10.1093/jxb/erq446> 1460-2431

Christiane Seiler, Vokkaliga T. Harshavardhan, Palakolanu S. Reddy, Götz Hensel, Jochen Kumlehn, Gopalan Selvaraj, Lennart Eschen-Lippold, **Kalladan Rajesh**, Viktor Korzun, Ulrich Wobus, Justin Lee and Nese Sreenivasulu. Absciscic acid flux alterations result in differential ABA signalling responses and impact assimilation efficiency in barley under terminal drought stress. *Plant Physiology*, 164: 1677-1696, 2014. 10.1104/pp.113.229062 1532-2548

Raorane, M.L., Pabuayon, I.M., Miro, B., **Kalladan, R.**, Reza-Hajirezai, M., Oane, R.H., Kumar, A., Sreenivasulu, N., Henry, A., and Kohli, A. Variation in primary metabolites in parental and near-isogenic lines of the QTL qDTY 12.1: altered roots and flag leaves but similar spikelets of rice under drought. *Molecular Breeding* 35, 1-25, 2015. 10.1007/s11032-015-0322-5 1572-9788

Book chapter

Kavi Kishor P B, **K. Rajesh**, Reddy P S, Seiler C, Sreenivasulu N. Drought stress tolerance mechanisms in barley and its relevance to cereals. In: Kumlehn J, Stein N (Eds.):

Biotechnology in agriculture and forestry, Vol. 69. Biotechnological approaches to barley improvement. Springer-Verlag, Berlin Heidelberg. (2014). 10.1007/978-3-662-44406-1_9 978-3-662-44406-1

Vokkaliga T Harshavardhan, Geetha Govind, **Rajesh Kalladan**, Nese Sreenivasulu, Chwan-Yang Hong. Cross-protection by oxidative stress: improving tolerance to abiotic stresses including salinity. Salinity Responses and Tolerance in Plants, Volume 1, 283-305. https://doi.org/10.1007/978-3-319-75671-4_11 978-3-319-75671-4