Dr T. R. Sharma

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Executive Director
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Dr. T. R. Sharma, Executive Director, National Agri-Food Biotechnology Institute (NABI) (An autonomous Institute of Department of Biotechnology, Govt. of India), Mohali, Punjab did his Ph D from HP Agricultural University, Palampur. He has done his Post Doctorates, one from the University of Alberta, Edmonton, Canada & two from Cold Spring Harbor Laboratory, NY,USA. Before joining NABI, Dr. Sharma was Project Director at the ICAR- National Research Centre on Plant Biotechnology, Pusa Campus, New Delhi (April 2014-January 7, 2017) and OSD of the ICAR- Indian Institute of Agricultural Biotechnology, Ranchi (June 2015 –January7,2017).

For his outstanding research contributions Dr. Sharma has been Awarded various awards like; University Gold Medal and Certificate of Honour in Ph.D, 1990, Young Scientist Award, NAAS, 1998; ICAR Young Scientist Award (Crop Sciences), 1999; Prof. Umakant Sinha Memorial Award in Biochemistry, Biophysics and Biotechnology, Indian Science Congress Association, 2001; International World Technology Award for Biotechnology (jointly to Int. Rice Genome Sequencing Team) in 2003, DBT National Bioscience Award for Career Development, 2007. NAAS Recognition Award 2008; VASVIK Award 2011, Rafi Ahmed Kidwai Award-ICAR, 2011, NASI-Reliance Industries Platinum Jubilee Award, 2013, J C Bose National Fellowship, 2013 and Prof MGK Menon Lecture Award (NASI) 2016.

He is the fellow of Indian National Science Academy, National Academy of Sciences and National Academy of Agricultural Sciences.

His major research interests are in the areas of Genomics and plant disease resistance. Dr. Sharma has contributed extensively to the improvement of rice for over 25 years. His most significant contributions include, identification, mapping, positional cloning & functional validation of a new Rice blast (*Magnaporthe oryzae*) resistance gene *Pi-k*^{h} (*Pi54*) from a unique source, which provides resistance to major isolates of *M. oryzae*. This gene activates complex defense mechanism as demonstrated by by his group using microarray analysis. He has also mined new alleles *Pi54rh and Pi54of,* from wild rice species which are resistant to the blast fungus. Dr. Sharma has

also developed robust DNA makers tightly linked to *Pi54* gene which are being used extensively in India to improve rice varieties. The blast resistance lines of mega rice varieties, Pusa Basmati -1, Swarna and BPT5204 developed by eh plant breeders are at different stages of their commercial release. He has also successfully mapped a novel QTL *qSBR11-1* for sheath blight resistance in rice, which has been transferred to Basmati type varieties by the rice breeders. Besides, he was Co-PI of the International Rice, Tomato and Pigeonpea, Genome Projects and has contributed extensively to the sequencing, genome assembly and annotation of the genomes of these crops. He coordinated the project on decoding the genome sequence of 15 strains of wheat rust fungus *Puccinia graminis tritici*, *P.striiformis* and rice blast fungus *Magnaporthe oryzae*. Dr. Sharma has filed six Indian patents and associated in the development of two new rice varieties, Pusa 1637 and HPR2880.

During the past few years Dr. Sharma has received funding for more than 25 Research Grants as Principal Investigator and coordinator. He has published more than 110 Research papers in different national and international journals on various aspects of Molecular Biology, Genomics and Plant Disease Resistance. He is also the Chief Editor of the Journal of Plant Biochemistry and Biotechnology.

Dr. Sharma was teaching Genomics, Molecular Markers and Introduction to Bioinformatics to M Sc and Ph D students at PG School IARI, New Delhi. He has guided 14 PhD and 8 M Sc in molecular biology and biotechnology.

Dr. Sharma has visited 12 countries such as USA, Canada, Australia, UK, Switzerland, Japan, Thailand, The Philippines, The Netherlands, Spain Iran and Brazil for Post- doctoral training, to attend conferences/ workshops and as one of the members of different scientific delegations.

Selected publications

Publication
Research Articles **(*Corresponding author)**
Kiran, K., Rawal, H. C., Dubey, H., Jaswal, R, Bhardwaj, S. C., Prasad P., Pal D, Devanna BN, **Sharma, T. R.** (2017) Dissection of genomic features and variations of three pathotypes of *Puccinia striiformis* through whole genome sequencing . Scientific Rep (2017). SREP-16-33142A. in press
Ray S., P.K. Singh, DK. Gupta, A. K. Mahato[1], C. Sarkar, R. Rathour, N.K. Singh and **T. R. Sharma** (2016). Analysis of *Magnaporthe oryzae* genome reveals a fungal effector, which is able to induce resistance

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