

# Molecular Breeding

## for Rice Abiotic Stress Tolerance and Nutritional Quality

Edited by

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# **Molecular Breeding for Rice Abiotic Stress Tolerance and Nutritional Quality**

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**Dr. Lutful Hassan** is a Professor in the Department of Genetics and Plant Breeding, BAU, Mymensingh, Bangladesh. Currently he is the Vice-Chancellor of BAU, Bangladesh. He obtained his BSc Agriculture and MSc in Genetics and Plant Breeding from BAU and his PhD in Plant

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and stagnant flooding tolerant, deep-water tolerant, water-saving, irrigated, and premium quality rice varieties utilizing breeding and biotechnological tools. He has published 60 full-length scientific papers, five books/book chapters and six bulletins/proceeding papers.



**Dr. Arvind Kumar** is the Director of the International Rice Research Institute, South Asia Regional Centre, Varanasi, India. Dr. Kumar has twenty-six years of experience in rice research in South Asia and Southeast Asia. From breeding lines developed by him, 65 rice varieties have been released in 10 different countries. He successfully introgressed drought grain yield QTLs in popular high-yielding varieties following marker-assisted breeding (MAB) and has developed drought-tolerant improved

versions of several popular varieties as well as varieties tolerant to multiple abiotic and biotic stresses. Dr. Kumar has identified 14 QTLs for grain yield under drought. Identified QTLs are being used on a large scale in marker-assisted breeding programs all over the world to develop rice varieties with improved yield under drought. Dr. Kumar also has identified seven genes for resistance against rice gall midge, which are used in breeding programs across the world, as well as QTLs for traits enhancing rice adaptability to dry direct-seeded situations. He has implemented 28 research projects, supervised more than 30 scholars, and published more than 30 chapters and 143 research manuscripts. For his varietal development work, he was awarded with the highest award for contribution to Indian agriculture, the Rafi Ahmed Kiwi Award by the Indian Council of Agricultural Research (ICAR), Government of India in 2014. The Nepal Council of Agricultural Research (NARC), Government of Nepal recognized him with honor in 2016 for his contribution to agriculture in Nepal for development of drought-tolerant varieties.





**Professor Robert Henry** conducts research on the development of new products from plants. His research targets improved understanding of the molecular basis of the quality of products produced from plants and genome analysis to capture novel genetic resources for diversification of food and energy crops. He is the Professor of Innovation in Agriculture and Foundation Director of the Queensland Alliance for Agriculture and Food Innovation, an Institute of the University of Queensland in partnership with the Queensland Government. He was previously director of the Centre for Plant Conservation Genetics at Southern Cross University and Research Program Leader in the Queensland Agricultural Biotechnology Centre. He has been involved in establishing several Cooperative