1. Record Nr. UNINA9910830016503321

Titolo	Molecular breeding for rice abiotic stress tolerance and nutritional quality / / edited by Mohammad Anwar Hossain
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley Blackwell, , [2021] ©2021
ISBN	1-119-63316-8 1-119-63317-6 1-119-63315-X
Descrizione fisica	1 online resource (467 pages)
Disciplina	633.18
Soggetti	Rice - Effect of stress on - Genetic aspects
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Cover -- Title Page -- Copyright -- Contents -- Editor Biographies -- Preface -- List of Contributors -- Chapter 1 Rice Adaptation to Climate Change: Opportunities and Priorities in Molecular Breeding -- Introduction -- Rice Production Scenario and Climate Change -- Prospects of Molecular Breeding for ClimateResilient Rice -- Molecular Breeding in Rice -- Breeding for Abiotic Stress Tolerance -- Drought -- Salinity -- Submergence -- High Temperature -- Low Temperature -- Breeding for Biotic Stress Tolerance -- Diseases -- Pests -- Weed Competitiveness -- Conclusion -- References -- Chapter 2 Molecular Breeding for Improving Salinity Tolerance in Rice: Recent Progress and Future Prospects -- Introduction -- Salt Tolerance Mechanisms -- RootLevel Ion Exclusion -- PlantLevel Compartmentation -- CellLevel Compartmentation -- Natural Variability for Salt Tolerance in Rice Germplasm -- Conventional Tools to Improve Salinity Tolerance -- Conventional Breeding -- Mutation Breeding -- Tissue Culture -- Molecular Tools to Improve Salinity Tolerance -- QTL Mapping -- MarkerAssisted Selection -- Candidate Genes and Allele Mining -- Genetic Engineering to Improve Salt Tolerance -- Novel Tools to Aid in Molecular Breeding -- MultiParental Advanced Generation Intercross Strategy -- Genomic Selection -- Phenomics -- NextGeneration Sequencing -- Genome Editing -- Conclusion and Future prospects --

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	Mechanisms -- Genome Editing Using CRISPRCas9 Technology -- Expressed Sequence Tags (ESTs) -- Gene Networks -- RNASeq Technology -- MicroRNA (miRNA) Technology -- VirusInduced Gene Silencing Machinery -- TILLING (Targeting Induced Local Lesions in Genomes) -- Identification of Superior Alleles or QTLs Associated with Drought Tolerance -- Molecular Mechanism in Tolerant Genotype in Comparison to Sensitive Genotype under Drought. Conclusion and Future Perspectives.
Sommario/riassunto	"The chapters of this book aim to contribute the latest understandings of molecular and genetic bases of abiotic stress tolerance, yield and quality improvement of rice to develop strategies for abiotic stress tolerance and biofortification, which leads to enhanced crop productivity under abiotic stress conditions, as well as better utilization of natural resources to ensure food security through modern breeding. Topics covered include: - Rice adaptation to climate change - Molecular breeding for improving UB-radiation tolerance in rice - Molecular breeding for improving abiotic oxidative stress tolerance in rice - Molecular breeding for grain quality improvement in rice - Application of rapid generation advance system in rice breeding for the development of stress tolerant rice varieties This book will provide comprehensive information on each topic, much needed by scientists and plant breeders for developing new stress tolerant rice varieties"--