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| Note generali | Description based upon print version of record. |
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| Nota di contenuto | Preface -- 1. Use of alien genetic variation for wheat improvement; P.K. Gupta -- 2. Quantitative trait loci mapping in plants: concepts and approaches; D. Sehgal -- 3. Developing and deploying abiotic stress tolerant maize varieties in the tropics: challenges and opportunities; B. M. Prasanna -- 4. Harnessing apomixes for heterosis breeding in crop improvement; V. Bhat -- 5. Status and opportunities of molecular breeding approaches for genetic improvement of tea; R. Kumar Sharma -- 6. Molecular cytogenetic approaches in exploration of important chromosomal landmarks in plants; Y. Mukai -- 7. Technological advances in studying gene pool diversity and its exploitation; S. Goel -- 8. Introgression and exploitation of QTL for yield and yield components from related wild species into rice cultivars; K. Neelam -- 9. A molecular phylogenetic framework for Timothy (Phleum pratense L.) |

improvement; A. Stewart -- 10. Genetic improvement of basmati rice – The journey from conventional to molecular breeding; A.K. Singh -- 11. Genetic diversity and coffee (*Coffea* sps) improvement in India; R.K. Aggarwal -- 12. Introgression and exploitation of biotic stress tolerance from related wild species in wheat cultivars; P. Chhuneja -- 13. Genetic improvement of sugarcane through conventional and molecular approaches; S. Kumar -- 14. Germline transformation for crop improvement; R. Tandon -- 15. Advances in molecular breeding of pearl millet; D. Sehgal -- 16. Molecular marker-based selection tools in spring bread wheat improvement: CIMMYT experience and prospects; S. Dreisigacker -- Index. .

Sommario/riassunto

Molecular Breeding for Sustainable Crop Improvement, Volume 2 focuses on integration of advances in genetics, cytogenetics, molecular biology and biotechnology aimed at alien gene introgression for genetic improvement of major crop species at molecular level to help overcome the limitations associated with conventional plant breeding. This book includes articles on the availability and application of modern genomic approaches, tools, and resources in a precision breeding approach. The contributions involve the use of molecular markers and linkage, QTL and association mapping of agronomic traits to identify candidate genes and to design functional markers for marker assisted selection (MAS), gene pyramiding using MAS coupled with marker assisted back cross breeding (MABB), next generation sequencing (NGS) to generate genome wide markers and screen new alleles, and targeting induced local lesions in genomes (TILLING) or ecotype TILLING (EcoTILLING) for the screening of either mutant or natural germplasm collections to integrate genomic information into directional and selective breeding in crops to maximize genetic gains. Breeders, taxonomists, geneticists, cytogeneticists, molecular biologists and biotechnologists are going to greatly benefit from this book. We sincerely hope that this book will serve as a milestone in the precision breeding of crops to achieve meaningful plant genetic improvement.
