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Titolo	The Barley Genome / / edited by Nils Stein, Gary J. Muehlbauer
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Descrizione fisica	1 online resource (XVIII, 394 p. 79 illus., 70 illus. in color.)
Collana	Compendium of Plant Genomes, , 2199-4781
Disciplina	581.35
Soggetti	Plant genetics Plant breeding Agriculture Plant Genetics and Genomics Plant Breeding/Biotechnology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Economic/academic importance of barley, Background history of the national and international genome initiatives -- Taxonomy and botanical descriptions -- Cytogenetics and genetic stocks for physical mapping and sequencing -- Chromosomal genomics of barley and wild relatives -- Physical and optical mapping -- Sequencing, assembly & state of the art of available sequences -- Gene Annotation -- Expressed portion of the barley genome -- Sequence diversity and structural variation -- The repetitive sequences of barley -- Comparative genomics of barley and related species -- Molecular mapping and cloning of genes and QTLs -- Genomics approaches to mining barley germplasm collections & Genome sequence-based enabling tools -- Genetics and genomics of barley inflorescence architecture -- Genetics and genomics of whole plant morphology and architecture -- Genomic view of biotic stress resistance -- Genomic view of abiotic stress resistance -- Genomics based barley breeding -- Barley domestication, adaptation and population genomics -- The genomics of the secondary and tertiary genepools of barley -- Barley genome and proteomics -- Organellar genomes of barley -- Bioinformatic resources for the barley genome -- Future prospects.

Sommario/riassunto

This book presents an overview of the state-of-the-art in barley genome analysis, covering all aspects of sequencing the genome and translating this important information into new knowledge in basic and applied crop plant biology and new tools for research and crop improvement. Unlimited access to a high-quality reference sequence is removing one of the major constraints in basic and applied research. This book summarizes the advanced knowledge of the composition of the barley genome, its genes and the much larger non-coding part of the genome, and how this information facilitates studying the specific characteristics of barley. One of the oldest domesticated crops, barley is the small grain cereal species that is best adapted to the highest altitudes and latitudes, and it exhibits the greatest tolerance to most abiotic stresses. With comprehensive access to the genome sequence, barley's importance as a genetic model in comparative studies on crop species like wheat, rye, oats and even rice is likely to increase. .
