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Nota di contenuto	Contents; Contributors; Foreword; Preface; 1 Vignettes of the History of Genetics; Section I Genomics, Quantitative Trait Loci and Tissue Culture; 2 Quantitative Genetics, Genomics and the Future of Plant Breeding; 3 Why Quantitative Geneticists should Care about Bioinformatics; 4 QTL Analysis: Problems and (Possible) Solutions; 5 Association Mapping in Plant Populations; 6 Integrating Molecular Techniques into Quantitative Genetics and Plant Breeding; 7 Use of Molecular Markers in Plant Breeding: Drought Tolerance Improvement in Tropical Maize; 8 Explorations with Barley Genome Maps 9 Global View of QTL: Rice as a Model10 Marker-assisted Back-cross Breeding: a Case-study in Genotype-building Theory; 11 Complexity, Quantitative Traits and Plant Breeding: a Role for Simulation Modelling in the Genetic Improvement of Crops; 12 Linking Biophysical and Genetic Models to Integrate Physiology, Molecular Biology and Plant Breeding; 13 Tissue Culture for Crop Improvement; 14 Transferring Genes from Wild Species into Rice; Section II Genotype-Environment Interaction and Stability Analysis; 15 Genotype-Environment Interaction: Progress and Prospects

16 Analysing QTL-Environment Interaction by Factorial Regression, with an Application to the CIMMYT Drought and Low-nitrogen Stress Programme in Maize; 17 Elements of Genotype-Environment Interaction: Genetic Components of the Photoperiod Response in Maize; 18 Mechanisms of Improved Nitrogen-use Efficiency in Cereals; 19 Biplot Analysis of Multi-environment Trial Data; 20 Linear-Bilinear Models for the Analysis of Genotype-Environment Interaction; 21 Exploring Variety-Environment Data Using Random Effects AMMI Models with Adjustments for Spatial Field Trend: Part 1: Theory; 22 Exploring Variety-Environment Data Using Random Effects AMMI Models with Adjustments for Spatial Field Trend: Part 2: Applications; 23 Applications of Mixed Models in Plant Breeding; 24 Defining Adaptation Strategies and Yield-stability Targets in Breeding Programmes; Index

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Sommario/riassunto

This text provides an overview of the rapidly developing integration and interdependence of quantitative genetics, genomics, and bioinformatics, and their application to plant breeding. Authors include international authorities from around the world.

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