
Contents

<i>Preface</i>	<i>v</i>
<i>Contributors</i>	<i>ix</i>
1 Advances in Plant Genotyping: Where the Future Will Take Us	1
<i>Dhwani A. Patel, Manuel Zander, Jessica Dalton-Morgan, and Jacqueline Batley</i>	
2 Molecular Marker Applications in Plants	13
<i>Alice C. Hayward, Reece Tollenaere, Jessica Dalton-Morgan and Jacqueline Batley</i>	
3 Bioinformatics: Identification of Markers from Next-Generation Sequence Data	29
<i>Pradeep Ruperao and David Edwards</i>	
4 Molecular Marker Databases	49
<i>Kaitao Lai, Michał Tadeusz Lorenc, and David Edwards</i>	
5 Plant Genotyping Using Fluorescently Tagged Inter-Simple Sequence Repeats (ISSRs): Basic Principles and Methodology	63
<i>Linda M. Prince</i>	
6 SSR Genotyping	77
<i>Annaliese S. Mason</i>	
7 Genotyping Analysis Using an RFLP Assay	91
<i>Shutao Dai and Yan Long</i>	
8 DNA Barcoding for Plants	101
<i>Natasha de Vere, Tim C.G. Rich, Sarah A. Trinder, and Charlotte Long</i>	
9 Multiplexed Digital Gene Expression Analysis for Genetical Genomics in Large Plant Populations	119
<i>Christian Obermeier, Bertha M. Salazar-Colqui, Viola Spamer, and Rod Snowdon</i>	
10 SNP Genotyping by Heteroduplex Analysis	141
<i>Norma Paniego, Corina Fusari, Verónica Lia, and Andrea Puebla</i>	
11 Application of the High-Resolution Melting Technique for Gene Mapping and SNP Detection in Plants	151
<i>David Chagné</i>	
12 Challenges of Genotyping Polyploid Species	161
<i>Annaliese S. Mason</i>	
13 Genomic Reduction Assisted Single Nucleotide Polymorphism Discovery Using 454-Pyrosequencing	169
<i>Peter J. Maughan, Joshua A. Udall, and Eric N. Jellen</i>	

14	Inter-SINE Amplified Polymorphism (ISAP) for Rapid and Robust Plant Genotyping	183
	<i>Torsten Wenke, Kathrin M. Seibt, Thomas Döbel, Katja Muders, and Thomas Schmidt</i>	
15	Screening of Mutations by TILLING in Plants	193
	<i>Nian Wang and Lei Shi</i>	
16	Gene Analysis Using Mass Spectrometric Cleaved Amplified Polymorphic Sequence (MS-CAPS) with Matrix-Assisted Laser Desorption Ionization Time-of-Flight Mass Spectrometry (MALDI-TOF).	205
	<i>Hideyuki Kajiwara</i>	
17	Quantitative SNP Genotyping of Polyploids with MassARRAY and Other Platforms	215
	<i>Marcelo Mollinari and Oliver Serang</i>	
18	SNP Genotyping Using KASPar Assays	243
	<i>Scott M. Smith and Peter J. Maughan</i>	
19	Skim-Based Genotyping by Sequencing.	257
	<i>Agnieszka A. Golicz, Philipp E. Bayer, and David Edwards</i>	
20	The Restriction Enzyme Target Approach to Genotyping by Sequencing (GBS)	271
	<i>Elena Hilario</i>	
21	Methods for the Design, Implementation, and Analysis of Illumina Infinium™ SNP Assays in Plants	281
	<i>David Chagné, Luca Bianco, Cindy Lawley, Diego Micheletti, and Jeanne M.E. Jacobs</i>	
22	Use of the Illumina GoldenGate Assay for Single Nucleotide Polymorphism (SNP) Genotyping in Cereal Crops	299
	<i>Shiaoman Chao and Cindy Lawley</i>	
	<i>Index</i>	313

Plant Genotyping

Methods and Protocols

Batley, J. (Ed.)

2015, XI, 315 p. 55 illus., 34 illus. in color., Hardcover

ISBN: 978-1-4939-1965-9

A product of Humana Press