

Contents

Contributors vii

1 **Biotechnologies for the Management of Genetic Resources for Food and Agriculture** 1

Preetmoninder Lidder and Andrea Sonnino

- I. Introduction 6
- II. Biotechnologies Applied to the Characterization, Conservation, and Utilization of Genetic Resources for Food and Agriculture 8
- III. Current Status of Biotechnologies for the Management of Crop Genetic Resources 28
- IV. Current Status of Biotechnologies for the Management of Forest Genetic Resources 49
- V. Current Status of Biotechnologies for the Management of Animal Genetic Resources 60
- VI. Current Status of Biotechnologies for the Management of Aquatic Genetic Resources 77
- VII. Current Status of Biotechnologies for the Management of Microbial Genetic Resources 94
- VIII. Conclusions and Outlook 110
- Acknowledgments 112
- References 112

2 **Transposable Elements and Insecticide Resistance** 169

Wayne G. Rostant, Nina Wedell, and David J. Hosken

- I. Introduction 170
- II. Transposable Elements 172
- III. Effects of TEs on Host Fitness and Evolution 175
- IV. Insecticide Resistance 179
- V. TEs Conferring Insecticide Resistance 182
- VI. Sex-Specific Effects of TEs Independent of DDT Resistance 188

VII. Ongoing and Future Research 189

Acknowledgments 193

References 193

Index 203