

Preface

Molecular Markers in Plants

Plants are fundamental to life, being the basis of our food production and an essential part of the global ecosystem on which life on earth depends. Plants have been used as a source of a wide range of materials, but the threat of exhaustion of fossil oil supplies has resulted in a renewed evaluation of plants as a source of energy and biomaterials. Molecular analysis of plants has found many applications in plant improvement, in the management of plant production, and the conservation of plant resources. Molecular markers are routinely used to identify plants for forensic or intellectual property applications. Molecular tools have become key contributors to the management of wild plant populations helping to conserve biodiversity. The relentless need for the continuous development of genetically improved crops to satisfy the demands of a global human population growing in number and affluence is now strongly supported by molecular marker technology.

Recent dramatic advances in DNA sequencing are now providing cost-effective options for the discovery of very large numbers of markers for any plant species. These developments significantly change the approach to marker discovery and analysis in plants and greatly expand the potential range of applications. This book outlines the technologies for molecular analysis of plants in support of plant breeding, production, and conservation. The techniques that have been used in the past are reviewed in relation to recent developments and future potential. This book updates earlier volumes on this topic featuring significant advances in both the technology and application of markers.

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