Preface

In 2010, the global area of transgenic crops reached 148 million hectares, an 87-fold increase since 1996, the first year of planting. This makes such technology the most rapidly adopted one in the history of modern agriculture.

This success has been based on the scientific foundation developed in many international laboratories since the 1980s, and it is the purpose of the present volume to provide access to the continuous improvements being made for the production and analysis of transgenic plants. Importantly, this volume is designed to complement and extend the information published in this same series *Transgenic Plants: Methods and Protocols* in 2005.

The present collection of novel methods is divided into eight parts which cover a range of protocols for both model and crop species. The first part covers various methods for the selection and detection of transgenic plants, and this is followed by a series of sections that describe specific methods for algae and then for higher plants. These latter sections are divided into those devoted to monocots, with an emphasis on rice, and then to dicots such as plum, grape, and cotton. Part VI covers a rapidly growing area of research, namely, the specific targeting and directed silencing of plant genes. Many of these technologies will cause considerable debate among the various regulatory regimes as they are not always detectable by molecular methodology and therefore are indistinguishable from mutations produced either spontaneously or by other methods. Part VII describes a range of applied examples to generate plants with modified metabolism or the production of pharmaceuticals. Finally, Part VIII describes the experience gained from the growth of transgenic Arabidopsis in the field.

Throughout the preparation of this volume, stimulated by the enthusiasm of the series editor John Walker, we have been aided by the continual high quality input from the large number of authors and we thank them all for their respective contributions.

Reading, UK

Jim M. Dunwell
Andy C. Wetten