

Preface

Plant tissue culture is a specific science which is a collection of techniques used to keep or cultivate plant cells, tissues or organs under sterilized conditions on a nutrient culture medium of predefined composition. In recent years, plant biotechnology has created unprecedented opportunities for the manipulation of plants through genetic engineering for improved traits and molecular farming and has certainly emerged as one of the most exciting science of twenty-first century. However, success in plant biotechnology is dependent on proper use and exploitation of plant tissue culture techniques which have become indispensable tool for the production of new plants with manipulated genes. Thus, plant tissue culture has emerged as an indispensable discipline of modern plant science across the globe and hence has become an essential course in UG and PG syllabi of all universities. The present book is an effort to make available standard and authentic study material related to this immensely useful and challenging technique of modern plant science.

The present book is a humble attempt to integrate and provide a comprehensive account of plant tissue culture in a lucid language and abundantly illustrated manner for better understanding. The book is divided into twenty chapters which will be helpful to students to know and grasp the basic concepts and applications of plant tissue culture including important biotechnological approaches. Glossary of important terms is also provided at the end. During our teaching experience of various bioinformatics courses at the undergraduate and postgraduate levels, we noted that there is hardly any book which can coherently assimilate both conventional and modern components of plant tissue culture. This prompted us to undertake this project keeping in view the requirements of the readers as well as incorporating the syllabi requirements of the universities.

We claim no originality as we have also consulted various sources of information in order to give the readers, the best. We would like to thank Prof. Aditya Shastri, Vice Chancellor, Banasthali University for providing necessary conditions for the completion of this work. We also thankfully acknowledge all those who were directly or indirectly involved in bringing out this book.

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