

Bhojwani, S.S., Razdan, M.K.: **Plant Tissue Culture: Theory and Practice, a Revised Edition.** (Studies in Plant Science. Vol. 5). - Elsevier, Amsterdam - Lausanne - New York - Oxford - Shannon - Tokyo 1996. 767 pp. US \$ 309.50. ISBN 0-444-81623-2.

Since the publication of the first edition of this well-known monograph in 1983, several new and exciting developments have taken place in plant biotechnology. Therefore everybody interesting in this field will certainly welcome this book that presents updated information on the theoretical, practical and applied aspects of plant tissue culture based on more than 2500 references. Individual chapters have been deeply revised and three new chapters have been added.

The book is introduced by a historical chapter and by survey of laboratory requirements and general techniques including culture media. The following chapters are devoted to cell culture and cellular totipotency. The chapter "Somatic embryogenesis" concerns not only on development of embryos in different plant species but also on production of synthetic seeds. The significance of haploids in plant breeding and the techniques for production of haploids and triploids are the topics of the chapters 7 and 8. The advantages and disadvantages of numerical and structural changes in the chromosomes, gene mutations, gene expression and gene amplification induced by tissue culture conditions are evaluated in the chapter 9. The chapters 10 and 11 deal with *in vitro* pollination and fertilization and culture of zygotic embryos. The isolation and culture of protoplasts and the somatic hybridization and cybridization are the topics of the chapters 12 and 13. One of the new chapters in this book surveys the techniques of genetic engineering and evaluates the theoretical and practical significance of transgenic organisms. From the commercial viewpoint, clonal propagation (which is described in the chapter 16) is the most important aspect of plant tissue culture as 350 million plants are produced annually through micropropagation. Practically important fields of tissue culture are also the production of pathogen-free plants (chapter 15) and the production of secondary metabolites (chapter 17). The last chapter is addressed to long-term germplasm storage for conservation of plant diversity.

Each chapter is written in lucid language and illustrated with explanatory diagrams and nice photographs. It contains theoretical introduction to the respective problem, description of methods, survey of investigated plant species and examples of detailed protocols. The glossary of terms used in plant tissue culture and the subject and plant index are added. Therefore the book can serve as textbook for undergraduate and postgraduate students as well as an excellent manual of methods for everybody interested in plant tissue culture.

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