Applications of Plant Biotechnology: In vitro Propagation, Plant Transformations and Secondary Metabolite Production, 1/e
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About the Book
This book provides a general introduction of plant tissue culture followed by specific applications of biotechnology in regeneration of rice (Oryza sativa), Maize, Eucalyptus, hot pepper, guava (Psidium guajava L.) stone fruit (Pinus pinea) and compares the features of in vitro grown plants to in vivo plants, Transgenic plants production and application, generating marker-free transgenic plants, genetic engineering and metabolic engineering of plants, molecular farming, abiotic stress tolerance, transgenic in floriculture and ornamental plants, celery, Secondary metabolite production with special reference to sennoside, genetic transformation of potato and biosafety concerns, bioinformatics and its application to crop improvement, Intellectual property rights, biotechnological aspects of secondary metabolite production, application of biotechnology in pharmaceutical sciences and production of recombinant proteins, cyclotides, Hypericum perforatum and Gentiana punctata provide a selected survey of key advances in the fascinating field of plant cell and tissue culture as a tool in biotechnology. Besides covering basic techniques employed in leading laboratories worldwide, follows an extended account of important applications in, for example, plant propagation, gene technology and secondary metabolite production. The book will prove useful to both students and researchers of biotechnology, agriculture, horticulture, forestry as well as for the industry.

Salient Features
Salient Features:
- A compilation of 29 articles, the book covers aspects of plant biotechnology, with respect to practical applications.
- The subject matter is divided into three sections – section I deals with in vitro plant regeneration, section II deals with transgenic plants and their applications, and section III deals with secondary metabolites and medical plants.
- Articles are written by 78 leading scientists engaged in the field of plant cell and culture, and biotechnology.
- Provides a selected survey of key advances in the field of plant cell and tissue culture as a tool in biotechnology.

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About the Author

**Ashwani Kumar** - Ashwani Kumar, Professor, Department of Botany, University of Rajasthan, Jaipur, has earned gold medal in M.Sc. and obtained Ph.D. from Rajasthan University. He has also the distinction of being an Alexander Von Humboldt Fellow (Germany). He was the Honorary Director at the School of Life Sciences, University of Rajasthan. The author's repertoire of published works spreads across 150 research articles in various national and international journals. With an experience of over three decades in his field of research, namely, tissue culture and biochemistry, the author has been at the helm of various major projects carried out by USDA-ICAR, U.G.C., M.N.E.S., C.S.I.R and DBT. He has long association with Professor Dr. Karl-Hermann Neumann and subsequently with Professor Dr. Sven Schubert at Institute Für Pflanzenernährung, Justus Liebig Universität, Giessen, Germany, as visiting Humboldt Fellow and visiting Professor at Toyama Medical and Pharmaceutical University, Toyama, Japan. The author is currently engaged in research on salinity tolerance at molecular level in cereals and crops. Recently he has been awarded the prestigious V. Puri Medal 2008.

**Sudhir K. Sopory** - Sudhir K. Sopory, Head of Plant Molecular Biology Division at the International Centre for Genetic Engineering and Biotechnology, New Delhi, is a well-known Plant Biologist who is recognized for his contributions in research and teaching in the field of Molecular Plant Physiology and Plant Biotechnology. He obtained Ph.D. from the University of Delhi. He is a visiting scientist at Max-Planck-Institute, Kolen, and University of Munich, in Germany, and at the University of Texas, Austin and United States Department of Agriculture, Maryland, USA.