

PLANT TISSUE CULTURE

The present book is an endeavour to make comprehensive, authentic and standard study material related to Plant Tissue Culture, accessible to the readers. This book has been assembled to accomplish the needs of undergraduate and post-graduate students of Plant Tissue Culture. Aspirants for the Civil Services and other competitive examinations too will surely gain advantage by this book.

The book is divided into twenty chapters which deal with Basic Equipment and Facilities for Plant Tissue Culture, Media Composition, Tissue Culture Techniques, Plant Cell Culture, Protoplast Isolation and Culture, Somatic Hybridization, Somatic Embryogenesis, Synthetic Seed, Micropropagation, Haploid and Triploid Production, Embryo Culture, etc. Many recent techniques are also provided such as Germplasm Storage, Genetic Transformation, Genetically Modified (GM) Plants with their Risks and Benefits, Metabolic Engineering, Useful Genes in Plant Genetic Engineering, Terminator Technology and Molecular Markers and their applications.

The primary aim of this book is to provide all relevant information covering both conventional and modern aspects of Plant Tissue Culture at one place.

Vinay Sharma, PhD (CCS University), Professor and Head of Department and Coordinator of the DBT sponsored M.Sc. Biotechnology programme and Bioinformatics Centre at Banasthali Vidyapith, has vast experience of teaching and research in Plant Sciences at IIT Roorkee during 1986-96 and then at Banasthali from 1996 onwards. He has over 200 research publications in prestigious international journals and has supervised 45 PhD. He is accredited with many educational innovations and has been honored by several prestigious fellowships and awards in India and abroad including Young Scientist Award by ISCA, Zahoor Qasim gold medal by Society of Biosciences and Distinguished Scientist Award by Society for Plant Research. He has been a Visiting Professor in Germany and USA. He has successfully handled several research projects funded by different scientific agencies including DST, DBT, ICAR, UGC and DAAD. He is currently supervising several young scientists for innovative plant biotechnology research.

Afroz Alam, Associate Professor, Department of Bioscience and Biotechnology, Banasthali Vidyapith, Rajasthan, obtained his PhD in Botany (Bryophyta) from the University of Lucknow in 2006. His area of specialization is bryophytes' systematics and bryodiversity. He was awarded JRF and SRF in 'All India Coordinated Project on Taxonomy of Bryophytes' (AICOPTAX) sponsored by the Ministry of Environment & Forests, New Delhi at Bryology Unit, Department of Botany, University of Lucknow. Dr. Alam has collected over 3000 accessions of bryophytes during plant collection trips to different parts of the country, including some arduous and treacherous terrains of Nilgiri and Palni Hills of Southern Peninsula, Eastern and Western Himalayas and Rajasthan.

He has guided several students for their PhDs. He has over 50 research publications in prestigious international and national journals, two monographs and a textbook, *Economic Botany*. He is a life member of Association of Plant Taxonomy (APT), India, and Indian Bryological Society (IBS).



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