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Nota di contenuto	Preface -- 1. Historical Sketch -- 2. General Requirements and Techniques.-3. Culture Media -- 4.Tissue and Cell Culture -- 5. Cytodifferentiation. 6.Cellular Totipotency -- 7.Somatic Embryogenesis -- 8.Androgenesis -- 9.Gynogenesis -- 10. Triploid Production -- 11. Zygotic Embryo Culture -- 12. Somaclonal Variation -- 13. In vitro Fertilization -- 14. Parasexual Hybridization -- 15. Genetic Engineering -- 16. Production of Virus-free Plants -- 17. Micropropagation -- 18. Production of Industrial Phytochemicals -- 19. Conservation of Biodiversity -- Subject Index.
Sommario/riassunto	Plant tissue culture (PTC) is basic to all plant biotechnologies and is an exciting area of basic and applied sciences with considerable scope for further research. PTC is also the best approach to demonstrate the totipotency of plant cells, and to exploit it for numerous practical applications. It offers technologies for crop improvement (Haploid and Triploid production, In Vitro Fertilization, Hybrid Embryo Rescue, Variant Selection), clonal propagation (Micropropagation), virus elimination (Shoot Tip Culture), germplasm conservation, production of industrial phytochemicals, and regeneration of plants from genetically manipulated cells by recombinant DNA technology (Genetic Engineering) or cell fusion (Somatic Hybridization and Cybridization). Considerable work is being done to understand the physiology and genetics of in vitro embryogenesis and organogenesis using model systems, especially Arabidopsis and carrot, which is likely to enhance

the efficiency of in vitro regeneration protocols. All these aspects are covered extensively in the present book. Since the first book on Plant Tissue Culture by Prof. P.R. White in 1943, several volumes describing different aspects of PTC have been published. Most of these are compilation of invited articles by different experts or proceedings of conferences. More recently, a number of books describing the Methods and Protocols for one or more techniques of PTC have been published which should serve as useful laboratory manuals. The impetus for writing this book was to make available a complete and up-to-date text covering all basic and applied aspects of PTC for the students and early-career researchers of plant sciences and plant / agricultural biotechnology. The book comprises of nineteen chapters profusely illustrated with self-explanatory illustrations. Most of the chapters include well-tested protocols and relevant media compositions that should be helpful in conducting laboratory experiments. For those interested in further details, Suggested Further Reading is given at the end of each chapter, and a Subject and Plant Index is provided at the end of the book.
