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Titolo	Somatic Embryogenesis: Fundamental Aspects and Applications // edited by Víctor M Loyola-Vargas, Neftalí Ochoa-Alejo
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Descrizione fisica	1 online resource (VIII, 506 p. 61 illus., 50 illus. in color.)
Disciplina	571.2
Soggetti	Plant physiology Plant breeding Agriculture Plant anatomy Plant development Cell culture Plant Physiology Plant Breeding/Biotechnology Plant Anatomy/Development Cell Culture
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Somatic Embryogenesis. An Overview -- The History of Somatic Embryogenesis -- The Many Ways of Somatic Embryo Initiation -- Transcriptome Profile of Somatic Embryogenesis -- Transcription Factors in the Regulation of Somatic Embryogenesis -- Epigenetic Advances in Somatic Embryogenesis in Sequenced Genome Crops -- The Current Status of Proteomic Studies in Somatic Embryogenesis -- Plant Fidelity in Somatic Embryogenesis-Regenerated Plants -- The Relationship Between Stress and Somatic Embryogenesis -- The role of the auxins during somatic embryogenesis -- Somatic embryogenesis in Arabidopsis -- Maize Somatic Embryogenesis: Agronomic Features for Improving Crop Productivity -- Somatic Embryogenesis in Annatto (Bixa orellana L.) -- Somatic Embryogenesis in Capsicum spp. -- Somatic Embryogenesis in Coffea spp. -- Somatic Embryogenesis in Agave spp.

-- Somatic Embryogenesis in Agave: an overview -- Somatic Embryogenesis in *Cocos nucifera* L. -- Somatic embryogenesis for more effective breeding and deployment of improved varieties in *Pinus* spp.: bottlenecks and recent advances -- Direct and indirect somatic embryogenesis in mango ginger (*Curcuma amada* Roxb.) -- Somatic Embryogenesis in Banana, *Musa* ssp. -- Somatic embryogenesis in *Jatropha curcas* -- The Uses of Somatic Embryogenesis for Genetic Transformation -- Somatic embryogenesis in Temporary Immersion Bioreactors -- Application of Somatic Embryogenesis to Secondary Metabolite-Producing Plants -- Histology and Histochemistry of Somatic Embryogenesis -- Laser Assisted Microdissection to Study Global Transcriptional Changes During Plant Embryogenesis.

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Sommario/riassunto

This book discusses basic and applied aspects of somatic embryogenesis, one of the most powerful tools in plant biotechnology. It is divided into three parts; Part I includes topics such as the history of this research field, how differentiated plant cells can (re)acquire totipotency, molecular features, as well as the epigenetics and proteomics of somatic embryogenesis. Part II covers the somatic embryogenesis of different crops, such as *Agave* spp. maize, *Cocos nucifera*, *Bixa orellana*, *Capsicum* spp., *Coffea* spp., *Musa* spp., *Pinus* spp., and *Arabidopsis thaliana*. Various applications, like scale-up propagation and genetic engineering are discussed in detail in Part III. The book will appeal to plant scientists, plant breeders and experts working in industry. .

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