

Micropropagation Of Orchids

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Micropropagation of Orchid

Esmeralda Clarkei - Mukti
Ram Paudel 2012-08

The study of in-vitro micropropagation has assumed enormous importance with the tremendous pace of progress in different disciplines of biological sciences. The tissue culture will play an important role in solving the problems of conventional methods for propagation, hybridization, embryo rescue, production of secondary metabolites, production of virus free plants and paternity disputes. This book help the orchid grower to keep themselves abreast of the

latest developments along with methods of mass propagation through various explants as well as conservation of endangered and rare orchids. This book also provide the technique for horticulturist those carries commercial purpose. This book will cater to the immediate needs of students, researcher, faculty members and horticultural industries.

Commercial Orchids -

Lakshman Chandra De
2015-01-29

Orchids account for a large share of global floriculture trade both as cut flowers and

as potted plants, and are estimated to comprise around 10% of international fresh cut flower trade. The average value of fresh cut orchids and buds trade during 2007-2012 was US\$ 483 million. In 2012, there are more than 40 countries exporting orchids and 60 countries importing orchids around the world, with the total size of the global trade equaling US\$ 504 million. In India, about 1350 species belonging to 186 genera represent approximately 5.98% of the world orchid flora and 6.83% of the flowering plants in India. The publication on "Commercial Orchids" is presented in 15 interesting chapters vividly highlighting the global orchid industry, biodiversity, conservation and bio-piracy of genetic resources, morphological and molecular characterization of valuable species, breeding approaches for improved genotypes, production of quality planting materials, physiology of tropical and temperate orchids, climate change and its impact

on orchid productivity, production technology of commercial epiphytic orchids for cut flower, production technology of commercial terrestrial orchids for cut flower, orchids for pot culture, hanging baskets and tree mounting, medicinal and aromatic orchids, post-harvest management of cut flowers of commercial orchids, value addition and marketing.

Micropropagation of Orchids, 2 Volume Set - Joseph Arditti
2008-05-12

This greatly expanded and updated edition of a classic reference work comprises two volumes offering a compendium of methods for multiplying orchids through micropropagation. A detailed collection of procedures and methods for multiplying orchids, including organ, tissue, and cell culture techniques in vitro Presents classic techniques that have been in the forefront of orchid propagation since they were first developed in 1949 Detailed procedures are appended with tables and

complete recipes for a large number of culture media. Includes many illustrations, chemical formulas, historical vignettes, and seldom seen illustrations of people, orchids, apparatus and tools "... an excellent resource like its predecessor, ...both informative and captivating, and served as a reminder of why we go to such extremes in our quest to propagate these plants." American Orchid Society, 2009 "...in the sense of its universal value and importance, this Second Edition will undoubtedly be considered a classic, if only because it will serve as a sole and invaluable resource on the subject." Plant Science Bulletin, 2009

Orchid Biology - J. Arditti
2013-04-17

A Personal Note I decided to initiate *Orchid Biology: Reviews and Perspectives* in about 1972 and (alone or with co-authors) started to write some of the chapters and the appendix for the volume in 1974 during a visit to the Bogor Botanical Gardens in

Indonesia. Professor H. C. D. de Wit of Holland was also in Bogor at that time and when we discovered a joint interest in Rumphius he agreed to write a chapter about him. I visited Bangkok on my way home from Bogor and while there spent time with Professor Thavorn Vajrabhaya. He readily agreed to write a chapter. The rest of the chapters were solicited by mail and I had the complete manuscript on my desk in 1975. With that in hand I started to look for a publisher. Most of the publishers I contacted were not interested. Fortunately Mr James Twigg, at that time editor of Cornell University Press, grew orchids and liked the idea. He decided to publish *Orchid Biology: Reviews and Perspectives*, and volume I saw the light of day in 1977. I did not know if there would be a volume II but collected manuscripts for it anyway. Fortunately volume I did well enough to justify a second book, and the series was born. It is still alive at present - 20 years, seven volumes and three publishers

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later. I was in the first third of my career when volume I was published.

Growing Orchids from Seed - Philip Seaton 2005

Eighty-eight lavishly illustrated pages of coloured drawings and photographs explain everything from selecting the right kit, through to planting your own seed-raised plants in the greenhouse, teaching you step-by-step how to grow orchids confidently, successfully and professionally. Written for the amateur and the professional without access to sophisticated laboratory equipment and chemicals, *Growing Orchids from Seed* contains all you need to know to become an expert.

Micropropagation - P. Debergh 2012-12-06

Micropropagation is a technology that has developed within the past 30 years. Earlier overviews of plant tissue culture have reviewed micropropagation as just one of many tissue culture procedures in use. Since the applications of this technology have multiplied so rapidly in recent

years, we decided that a specific overview of the technology was now appropriate. Our book begins with a review of the general principles of tissue culture as applied to micropropagation. This review is concise since the general topic has been covered in numerous other books and reviews. The basic principles of laboratory design and construction are summarized in the second chapter. Common problems encountered in micropropagation, both during and after culture, are examined in detail in four chapters. As micropropagation developed from a laboratory curiosity to a commercial industry, different considerations became important. These are discussed in two chapters. An attempt has been made to assess the current status of commercial production around the world. This has been difficult because commercial production figures are often closely guarded and little has been done to collect statistics on this growing industry. Applications to a broad range of crops are

discussed in a series of chapters. These try to report the state of the art in each area, but since applications for some crops are much more advanced than for others, the focus of these chapters varies depending upon the progress that has been made.

Handbook of Vanilla Science and Technology - Daphna

Havkin-Frenkel 2018-09-24

An updated guide to the production, science, and uses of vanilla Vanilla is a flavor and fragrance in foods, cosmetics, pharmaceuticals, and a wealth of other products. Now in its second edition, the Handbook of Vanilla Science and Technology provides a comprehensive and updated review of the science and technology used in these items' production and supply.

Featuring contributions from an international range of experts, this revised edition covers a multitude of topics, including agricultural production, global markets, analytical methods, sensory analysis, food and fragrance applications, organic farming

and fair trade, botanical diseases, and novel uses. The Handbook of Vanilla Science and Technology, Second Edition is a vital resource for producers, distributors, and scientists involved in vanilla's growth and utilization, and offers readers: A guide to the cultivation, extraction, analysis, DNA sequencing, and marketing of vanilla

Information on the production of vanilla in a range of countries such as Mexico, Australia, Costa Rica, and India Guidelines on the quality control of vanilla beans and extracts Information on fair trade and the future of vanilla

Growing Hardy Orchids -

Philip Seaton 2011

Focusing on the cultivation of orchids in greenhouses, pots and gardens, a well-researched and practical step-by-step guide highlights more than 150 species of hardy orchids in North America, Europe and Australia that will thrive in temperate climates with little or no protection. Original.

Micropropagation of Orchids, 2 Volume Set - Joseph Arditti

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2008-05-12

This greatly expanded and updated edition of a classic reference work comprises two volumes offering a compendium of methods for multiplying orchids through micropropagation. A detailed collection of procedures and methods for multiplying orchids, including organ, tissue, and cell culture techniques in vitro Presents classic techniques that have been in the forefront of orchid propagation since they were first developed in 1949 Detailed procedures are appended with tables and complete recipes for a large number of culture media Includes many illustrations, chemical formulas, historical vignettes, and seldom seen illustrations of people, orchids, apparatus and tools "... an excellent resource like its predecessor, ...both informative and captivating, and served as a reminder of why we go to such extremes in our quest to propagate these plants." American Orchid Society, 2009 "...in the sense of

its universal value and importance, this Second Edition will undoubtedly be considered a classic, if only because it will serve as a sole and invaluable resource on the subject." Plant Science Bulletin, 2009

Micropropagation of Orchids - Joseph Arditti
2009-01-26

This greatly expanded and updated edition of a classic reference work comprises two volumes offering a compendium of methods for multiplying orchids through micropropagation. A detailed collection of procedures and methods for multiplying orchids, including organ, tissue, and cell culture techniques in vitro Presents classic techniques that have been in the forefront of orchid propagation since they were first developed in 1949 Detailed procedures are appended with tables and complete recipes for a large number of culture media Includes many illustrations, chemical formulas, historical vignettes, and seldom seen

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Orchid Biotechnology -

Hong-Hwa Chen 2007-08
The diversity and specialization in orchid floral morphology have fascinated botanists and collectors for centuries. In the past 10 years, the orchid industry has been growing substantially worldwide. This interesting book focuses on the recent advances in orchid biotechnology research since the last 10 years in Taiwan. To advance the orchid industry, enhancement of basic research as well as advanced

biotechnology will provide a good platform to improve the flower quality and breeding of new varieties. Important topics covered include the new knowledge of basic genome, through floral morphogenesis, floral ontology, embryogenesis, micropropagation, to functional genomics such as EST, virus-induced gene silencing, and genetic transformation.

The Orchid Thief - Susan

Orlean 2011-07-20

NEW YORK TIMES

BESTSELLER • A NEW YORK

TIMES NOTABLE BOOK A

modern classic of personal

journalism, The Orchid Thief is Susan Orlean's wickedly funny, elegant, and captivating tale of an amazing obsession.

Determined to clone an endangered flower—the rare

ghost orchid *Polyrrhiza lindenii*—a deeply eccentric and oddly attractive man

named John Laroche leads Orlean on an unforgettable

tour of America's strange flower-selling subculture,

through Florida's swamps and beyond, along with the

Seminoles who help him and

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the forces of justice who fight him. In the end, Orlean—and the reader—will have more respect for underdog determination and a powerful new definition of passion. In this new edition, coming fifteen years after its initial publication and twenty years after she first met the “orchid thief,” Orlean revisits this unforgettable world, and the route by which it was brought to the screen in the film *Adaptation*, in a new retrospective essay. Look for special features inside. Join the Random House Reader’s Circle for author chats and more. Praise for *The Orchid Thief* “Stylishly written, whimsical yet sophisticated, quirkily detailed and full of empathy . . . The Orchid Thief shows [Orlean’s] gifts in full bloom.”—The New York Times Book Review “Fascinating . . . an engrossing journey [full] of theft, hatred, greed, jealousy, madness, and backstabbing.”—Los Angeles Times “Orlean’s snapshot-vivid, pitch-perfect prose . . . is fast becoming one of our national

treasures.”—The Washington Post Book World “Orlean’s gifts [are] her ear for the self-skewing dialogue, her eye for the incongruous, convincing detail, and her Didion-like deftness in description.”—Boston Sunday Globe “A swashbuckling piece of reporting that celebrates some virtues that made America great.”—The Wall Street Journal

Modern Applications of Plant Biotechnology in

Pharmaceutical Sciences -

Saurabh Bhatia 2015-07-22

Modern Applications of Plant Biotechnology in

Pharmaceutical Sciences

explores advanced techniques in plant biotechnology, their applications to pharmaceutical sciences, and how these methods can lead to more effective, safe, and affordable drugs. The book covers modern approaches in a practical, step-by-step manner, and includes illustrations, examples, and case studies to enhance understanding. Key topics include plant-made

pharmaceuticals, classical and

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non-classical techniques for secondary metabolite production in plant cell culture and their relevance to pharmaceutical science, edible vaccines, novel delivery systems for plant-based products, international industry regulatory guidelines, and more. Readers will find the book to be a comprehensive and valuable resource for the study of modern plant biotechnology approaches and their pharmaceutical applications. Builds upon the basic concepts of cell and plant tissue culture and recombinant DNA technology to better illustrate the modern and potential applications of plant biotechnology to the pharmaceutical sciences. Provides detailed yet practical coverage of complex techniques, such as micropropagation, gene transfer, and biosynthesis. Examines critical issues of international importance and offers real-life examples and potential solutions.

Plant Cell Culture in Crop Improvement - Kenneth Giles

2013-11-11

The current and potential importance of plant tissue culture techniques in crop improvement is hard to overemphasize. There are few areas where these techniques will have more possible impact than in tropical agriculture, where the availability of high productivity varieties is sadly lacking in many species. The potential for the rapid, clonal propagation of elite individuals and the use of controlled multiline planting could have a major effect on crop yield and disease resistance in many areas of the world. This volume is a collection of papers presented at the Conference on "Crop Improvement Through Tissue Culture", held at the Base Institute, Calcutta, India in December 1981. It attempts to bring together local research workers, familiar with the agricultural resources of the area and tissue culture and molecular level workers. It was the hope of the conference that the "cross fertilization" of ideas would lead to new approaches

and activity in this area. The editors trust that this collection of papers will stimulate interest and research in the tissue culture and improvement of crop plants everywhere. v

ACKNOWLEDGEMENTS The symposium from which the papers in this book are drawn was held at Bose Institute, Calcutta on December 6 to December 10, 1981.

Fundamentals of Orchid Biology - Joseph Arditti
2007-01-01

Flowers for Trade -

V.L.Sheela 2008-03-05

The book is a classic covering flowers used in decoration of houses, offices, restaurants, hospitals and private places of rest and relaxation. For nature lovers, it is a paradise of colours, forms and shapes. Fragrant flowers, flowers for bouquet making, flowers for essences and bonsai are narrated to the enchantment of students and scholars as well. There are 21 chapters dealing with general topics in flower trade, standards, markets and

global demand and supply. The specific chapters deal elaborately anthuriums, carnations, china aster, chrysanthemums, gerbera, gladiolus, heliconias, jasmine, marigold, orchids, roses and tube roses. An exhaustive chapter on new cut flowers narrates recent introductions. The Japanese Bonsai is dealt in exquisite style. Research and development in this sector are separately dealt with. Future prospects, trends and globalised flower marketing are written for use of floriculturists. Modern technology of protected growing of flowers is informative. All the flowers indicated in the book are presented in colour photographs as well.

Orchid Biology: Recent Trends & Challenges - Shaik

Mahammad Khasim 2020-01-31

This book on "Orchid Biology: Recent Trends & Challenges" reviews the latest strategies for the preservation and conservation of orchid diversity and orchid germplasm. It is an outcome of the Proceedings of

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the International Symposium on “Biodiversity of Medicinal Plants & Orchids: Emerging Trends and Challenges” held on 9-11 February 2018 at Acharya Nagarjuna University, India. In addition, eminent orchid experts from around the globe were invited to contribute to this book. All chapters were peer-reviewed by international experts. The Orchidaceae are one of the largest families of flowering plants, comprising over 700 genera and 22,500 species and contributing roughly 40 percent of monocotyledons. They also represent the second-largest flowering plant family in India, with 1,141 species in 166 genera, and contribute roughly 10% of Indian flora. Orchids comprise a unique group of plants and their flowers are among the most enchanting and exquisite creations of nature. Phylogenetically and taxonomically, the Orchidaceae are considered to be a highly evolved family among angiosperms. They show incredible diversity in terms of

the shape, size and colour of their flowers, and are of great commercial importance in floriculture markets around the globe. Millions of cut flowers of Cymbidium, Dendrobium, Cattleya, Paphiopedilum, Phalaenopsis, Vanda etc., besides potted orchid plants, are sold in Western Countries and thus, the orchid cut flower industry has now become a multimillion-dollar business in Europe, the USA and South East Asia. Besides their ornamental value, orchids hold tremendous pharmaceutical potential. Root tubers of *Habenaria edgeworthii* form an important component of the ‘Astavarga’ group of drugs in Ayurvedic medicine. It is an established fact that tubers of some terrestrial orchids have been used to treat diarrhoea, dysentery, intestinal disorders, cough, cold and tuberculosis. Some orchids, particularly those belonging to the genera *Aerides*, *Arachnis*, *Cattleya*, *Cymbidium*, *Dendrobium*, *Epidendrum*, *Oncidium*, *Paphiopedilum*, *Phalaenopsis*, *Renanthera*, *Vanda* etc. have

been extensively used to produce internationally acclaimed hybrids. Yet paradoxically, Indian orchids are victims of their own beauty and popularity. As a result, their natural populations have been declining rapidly because of unbridled commercial exploitation in India and abroad. In fact, some orchids are now at the verge of extinction, e.g. *Renanthera imschootiana*, *Diplomeris hirsuta*, *Paphiopedilum fairrieanum*, *Cypripedium elegans*, *Taeniophyllum andamanicum* etc. Given the global importance of orchids in terms of securing human health and wealth, this comprehensive compilation, prepared by international experts, is highly topical. Its content is divided into five main sections: (I) Cryopreservation & Biotechnology, (II) Orchid Biodiversity & Conservation, (III) Anatomy & Physiology, (IV) Pollination Biology and (V) Orchid Chemicals & Bioactive Compounds. All contributions were written by eminent orchid

experts/professors from around the world, making the book a valuable reference guide for all researchers, teachers, orchid enthusiasts, orchid growers and students of biotechnology, botany, pharmaceutical sciences and ethnomedicine. It will be equally valuable for readers from the horticultural industry, especially the orchid industry, agricultural scientists and policymakers.

Orchids Phytochemistry, Biology and Horticulture -

Jean-Michel Mérillon

2022-03-17

This reference work provides an authoritative and comprehensive review of the latest developments in orchids' biology, biotechnology and phytochemistry, and it also explores the applications of orchids in medicinal chemistry, nutrition and cosmetics industry. Chapters from expert contributors are organised into six sections and cover the entire gamut of orchid research and uses. In this work, readers will learn about topics such as biogeography and diversity of orchids, their

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biology and environmental factors, their horticulture and phytochemistry, and their use in agri-food, medicinal and perfumery industries. This book will appeal to graduate students, scholars, researchers interested in botany, agriculture, pharmacy, biotechnology and phytochemistry. Industrial scientists and those involved in marketing flowers and phytochemicals, plants and their extracts will also understand the importance of this reference work.

Medicinal Orchids of Asia -

Eng Soon Teoh 2016-08-30

This unique book brings together a wealth of data on the botanical, ethno-medicinal and pharmacological aspects of over 500 species of Asian medicinal orchids. It starts off by explaining the role and limitations of complimentary and herbal medicines, and how traditional Asian medicine differs from Western, "scientific" medicine. The different Asian medical traditions are described, as well as their modes of

preparing herbal remedies. The core of the book presents individual medicinal orchid species arranged by genera. Each species is identified by its official botanical name, synonyms, and local names. Its distribution, habitat and flowering season, uses and pharmacology are described. An overview sums up the research findings on all species within each genus. Clinical observations are discussed whenever available, and possible therapeutic applications are highlighted. The book closes with chapters on the conservation of medicinal orchids and on the role of randomized clinical trials.

Orchid Propagation: From Laboratories to

Greenhouses—Methods and Protocols - Yung-I Lee

2019-05-23

The orchid family is one of the largest families of flowering plants known for their beauty and economic importance. This work provides information in key areas of research that are important to both scientists

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and commercial growers alike. The main purposes of this book are to provide key practical areas of research, such as, germination, micropropagation, traditional and current techniques related to plant improvement; document methods that ensure survival of plants from laboratories to greenhouses; promote communication between scientists and growers, so that their combined expertise on these areas will lead to the successful growth of orchids in their natural habitats or commercial greenhouses. This book can serve as reference for laymen with an interest in orchid growing. This book is divided into 5 parts. The first part emphasizes propagation methods using seeds and related techniques that are important to plant conservation and improvement. Successes in asymbiotic and symbiotic seed germination are keys to orchid conservation and their propagation. The second part summarizes micropropagation methods, common media, and

newer methods of micropropagation such as the bioreactor culture procedures. The third part focuses on techniques related to the manipulation of explants in an in vitro environment. The fourth part covers cell biological methods and transformation techniques. Since the successes in a laboratory setting do not guarantee plant survival and propagation in greenhouses and in the natural environment, it discusses greenhouse propagation techniques that are essential to the survival of plants generated from a laboratory setting. The fifth part showcases recent successes on orchid propagation by documenting sample publications and how to present orchids in an artistic fashion for one's enjoyment.

Orchid Biology VIII - T. Kull
2013-03-14

This is the eighth volume in a 25-year-old series that has become the cornerstone review publication of orchid science. It presents authoritative reviews on different areas of orchid

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science and historical accounts by major orchid authorities, providing information for botanists, orchid scientists, and growers.

In Vitro Embryogenesis in Higher Plants - Maria Antonietta Germanà
2015-12-02

This volume presents an overview of recent advances, innovative applications, and future prospects of in vitro embryogenesis in higher plants. The book's chapters are divided into five parts: Part I contains reviews on general topics (microspore; zygotic and somatic embryogenesis; in vitro and in vivo asexual embryogenesis; advances on the genetic, physiological, and proteomic knowledge of somatic embryo formation; role of apoptosis and mitochondria in somatic embryogenesis; and innovation in the use of bioreactors). The remaining four parts discuss step-wise protocols on somatic embryogenesis in selected horticultural plants (Part II); forest trees (Part III); gametic embryogenesis (Part IV); and

pivotal topics, such as the detection of epigenetics modifications during microspore embryogenesis, the in vitro embryogenesis and plant regenerations from isolated zygotes, the synthetics seed production, the induction and maturation of somatic embryos, and the cryostorage of embryogenic cultures (Part V). Written in the highly successful *Methods in Molecular Biology* series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and tips on troubleshooting and avoiding known pitfalls. Authoritative and thorough, *In Vitro Embryogenesis in Higher Plants*, is a useful source of information and ideas for plant tissue culturists, cell biologists, embryologists, horticulturists, and operators of commercial nurseries. This book will introduce the fascinating work in in vitro embryogenesis in higher plants to students and

young scientists.

Orchids - IUCN/SSC Orchid Specialist Group 1996

This action plan chronicles the threats faced by wild orchids, but more importantly to critical habitats that host extraordinarily high orchid diversity and endemism. It explores and recommends specific ways that national and local government, legislators, scientists and orchid conservationists as well as growers can all help to reverse present trends. The facts and viewpoints presented in this comprehensive document update and supplement the information available to conservation organizations and agencies through the world so that they can lobby their appropriate government offices more effectively.

Culture of Orchids - David Lumsden 1941

Plant Embryo Culture - Trevor A. Thorpe 2016-08-23

A great fascination for biologists, the study of embryo development provides indispensable information

concerning the origins of the various forms and structures that make up an organism, and our ever-increasing knowledge gained through the study of plant embryology promises to lead to the development of numerous useful applications. In Plant Embryo Culture: Methods and Protocols, expert researchers from the field provide a ready source of information for culturing zygotic embryos for different types of studies, both theoretical and practical. The book's main sections examine a wide range of related topics, including the culture of zygotic embryos for developmental studies, the application of embryo culture techniques focusing on embryo rescue methods, cryopreservation of zygotic embryos, the use of zygotic embryos as explants for somatic embryogenesis and organogenesis, as well as transformation protocols using zygotic embryos as starting material. Written in the highly successful Methods in Molecular Biology™ series format, the detailed chapters

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include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and vital notes on troubleshooting and avoiding known pitfalls. Authoritative and convenient, *Plant Embryo Culture: Methods and Protocols* serves as a key reference that can be used by scientists of all backgrounds to help develop their own customized methods for many different species and for a variety of purposes.

Applied and Fundamental Aspects of Plant Cell, Tissue, and Organ Culture -

Jakob Reinert 2013-04-17
Progress in the field of plant cell and tissue culture has made this area of research one of the most dynamic and promising not only in plant physiology, cell biology and genetics but also in agriculture, forestry, horticulture and industry. Studies with plant cell cultures clearly have bearing upon a variety of problems as yet unsolved in basic and applied

research. This was the compelling reason for assembling such a comprehensive source of information to stimulate students, teachers, and research workers. This book comprises 34 articles on regeneration of plants, vegetative propagation and cloning; haploids; cytology, cytogenetics and plant breeding; protoplasts, somatic hybridization and genetic engineering; plant pathology; secondary products and a chapter on isoenzymes, radiobiology, and cryobiology of plant cells. Particular attention has been paid to modern, fast-growing and fascinating disciplines - e.g. the induction of haploids, somatic hybridization and genetic manipulation by protoplast culture, which possess an enormous potential for plant improvement.

Microorganisms in Plant Conservation and Biodiversity - K.

Sivasithamparam 2007-05-08
Plant conservation is increasingly recognised as an

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outstanding global priority, yet despite considerable efforts over the last few decades, the number of threatened species continues to rise. The practice of plant conservation has for too long been a rather hit-or-miss mixture of methods. While microorganisms have been recognised as a crucial and essential element in supporting the lifecycles of plant species, there has been limited recognition of the relationships between macro level conservation facilitating ecosystem functioning at the micro level. This book addresses the role of microorganisms in conservation - both their support functions and deleterious roles in ecosystem processes and species survival. Importantly, a number of authors highlight how microbial diversity is, itself, now under threat from the many and pervasive influences of man. What is clear from this volume is that like many contemporary treatments of plant and animal conservation, the solution to mitigate the

erosion of biodiversity is not simple. This book represents an attempt to bring to the fore the ecological underwriting provided by microorganisms. **Orchid Biotechnology II** - Hong-Hwa Chen 2011 Orchid Biotechnology II presents a series of recent works on both basic and applied researches in biotechnology progress for Phalaenopsis and Oncidium orchids. These include the development of flower, ovule, gynostemium and perianth, the discovery of new orchid-infecting viruses and virus movement, secondary metabolites, technology of DNA endoduplication and genetic transformation, growth regulation by micronutrition and orchid mycorrhiza, and plant growth substances for flowering. The diversity and specialization in orchid floral morphology have fascinated botanists and collectors for centuries. The orchid industry has been growing substantially in the past ten years worldwide. This book focuses on the recent advances in the

research of orchid biotechnology from the past ten years in Taiwan. To advance the orchid industry, enhancement of basic research as well as advanced biotechnology will provide a good platform to improve flower quality and breeding of new varieties.

Vanilla Orchids - Ken Cameron
2012-01-06

With more than 30,000 known species, orchids represent the largest family of plants. But only one genus has agricultural value—the Vanilla orchid.

Leading orchid expert Ken Cameron covers the natural history of the world's most popular flavor and fragrance and provides an introduction to the pollination, biology, structure, evolution, and diversity of Vanilla and related orchids. *Vanilla Orchids* also features methods for bean harvest, curing, and processing for enthusiasts who want to try it at home.

Tissue Culture as a Plant Production System for Horticultural Crops - Richard H. Zimmerman
1986-07-31

Conference on Tissue Culture as a Plant Production System for Horticultural Crops, Beltsville, MD, October 20-23, 1985

Recent Advances in Plant in vitro Culture - Annarita Leva
2012-10-17

The purpose of this book is to provide the advances in plant in vitro culture as related to perennial fruit crops and medicinal plants. Basic principles and new techniques, now available, are presented in detail. The book will be of use to researchers, teachers in biotechnology and for individuals interested to the commercial application of plant in vitro culture.

Plant Tissue Culture, Development, and Biotechnology - Robert N. Trigiano
2016-03-30

Under the vast umbrella of Plant Sciences resides a plethora of highly specialized fields. Botanists, agronomists, horticulturists, geneticists, and physiologists each employ a different approach to the study of plants and each for a different end goal. Yet all will

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find themselves in the laboratory engaging in what can broadly be termed biotechnol

Plants from Test Tubes -

Lydiane Kyte 1987

Acclaimed as the most practical guide to plant tissue culture, the book is now even better and introduces new developments in biotechnology, such as genetic engineering and cell culture.

Flowers For Trade - Sheela V L
2020-09-25

The book is a classic covering flowers used in decoration of houses, offices, restaurants, hospitals and private places of rest and relaxation. For nature lovers, it is a paradise of colours, forms and shapes.

Fragrant flowers, flowers for bouquet making, flowers for essences and bonsai are narrated to the enchantment of students and scholars as well.

There are 21 s dealing with general topics in flower trade, standards, markets and global demand and supply. The specific s deal elaborately anthuriums, carnations, china aster, chrysanthemums,

gerbera, gladiolus, helicones, jasmine, marigold, orchids, roses and tube roses. An exhaustive on new cut flowers narrates recent introductions .The Japanese Bonsai is dealt in exquisite style. Research and development in this sector are separately dealt with. Future prospects, trends and globalised flower marketing are written for use of floriculturists. Modern technology of protected growing of flowers is informative. All the flowers indicated in the book are presented in colour photograph forms as well.

The Genera and Species of Orchidaceous Plants - John Lindley 1840

Light Emitting Diodes for Agriculture -

S Dutta Gupta
2017-10-25

This book presents a comprehensive treatise on the advances in the use of light-emitting diodes (LEDs) for sustainable crop production and describes the latest photomorphogenesis research findings. It introduces readers

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to the fundamentals and design features of LEDs applicable for plant growth and development and illustrates their advantages over the traditional lighting systems, including cost analyses. Further, it discusses a wide range of applications covering diverse areas of plant sciences relevant to controlled environment agriculture and in vitro plant morphogenesis. The chapters have been written by a team of pioneering international experts, who have made significant contributions to this emerging interdisciplinary field. The book will serve a valuable resource for graduate students, instructors, and researchers in the fields of horticulture, agricultural biotechnology, cell and developmental biology, and precision agriculture. It will also serve well professionals engaged in greenhouse and vertical farming.

Micropropagation of Orchids - Tim Wing Yam 2017-07-05
Divided into three volumes, Micropropagation of Orchids Third Edition retains the exhaustive list of

micropropagation protocols for many genera and updates each section to include new and/or revised information about:
Culture media and vessels
Techniques and procedures for both orchids which were previously cultured and for those which were not
Plant hormones and growth regulators
Media components
Methods for tissue decontamination
Historical information
Procedures for the cultivation for plantlets which have been removed from flasks
Sources of light and illumination methods
Written by two globally acknowledged experts in the field, the third edition of this definitive text on the micropropagation of orchids is a detailed and comprehensive collection of procedures and methods for multiplying orchids, including organ, tissue, and cell culture techniques in vitro and is intended for researchers in plant science and propagation, professional and amateur orchid growers, and plant breeding professionals. Much of the general information

about techniques and procedures can be applied to plants other than orchids.

How to Grow Native Orchids in Gardens Large and Small - Dave Morgan 2019

Plant Cell and Tissue

Culture - Indra K. Vasil
2013-03-09

Plant Cell and Tissue Culture gives an exhaustive account of plant cell culture and genetic transformation, including detailed chapters on all major field and plantation crops. Part A presents a comprehensive coverage of all necessary laboratory techniques for the initiation, nutrition, maintenance and storage of plant cell and tissue cultures, including discussions on these topics, as well as on morphogenesis and regeneration, meristem and shoot tip culture, plant protoplasts, mutant cell lines, variation in tissue cultures, isogenic lines, fertilization control, cryopreservation, transformation, and the production of secondary metabolites. Part B then

proceeds into detail on the specific in vitro culture of specific crops, including cereals, legumes, vegetables, potatoes, other roots and tubers, oilseeds, temperate fruits, tropical fruits, plantation crops, forest trees and ornamentals. Plant Cell and Tissue Culture is, and is likely to remain, the laboratory manual of choice, as well as a source of inspiration and a guide to all workers in the field.

Thidiazuron: From Urea Derivative to Plant Growth Regulator - Naseem Ahmad
2018-03-23

Plant biotechnology is a most interesting branch for academicians and researchers in recent past. Now days, it becomes a very useful tool in agriculture and medicine and is regarded as a popular area of research especially in biological sciences because it makes an integral use of biochemistry, molecular biology and engineering sciences in order to achieve technological application of cultured tissues, cell and

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microbes. Plant tissue culture (PTC) refers to a technique of cultivation of plant cells and other parts on artificial nutrient medium in controlled environment under aseptic conditions. PTC requires various nutrients, pH, carbon source, gelling agent, temperature, photoperiod, humidity etc. and most importantly the judicious use of plant growth regulators. Various natural, adenine and phenyl urea derivatives are employed for the induction and proliferation of different types of explants. Several phenyl urea derivatives were evaluated and it was observed that thidiazuron (n-phenyl-N"-1,2,3- thidiazol-5-ulurea) was found to be the most active among the plant growth regulators. Thidiazuron (TDZ) was initially developed as a cotton defoliant and showed high cytokinin like activity. In some examples, its activity was 100 times more than BA in tobacco callus assay and produces more number of shoots in cultures than Zeatin and 2iP. TDZ also showed

major breakthrough in tissue culture of various recalcitrant legumes and woody species. For the last two decades, number of laboratories has been working on TDZ with different aspect and number of publications has come out. To the best of our knowledge, there is no comprehensive edited volume on this particular topic. Hence the edited volume is a deed to consolidate the scattered information on role of TDZ in plant tissue culture and genetic manipulations that would hopefully prove informative to various researches.

Thidiazuron: From Urea Derivative to Plant Growth Regulator compiles various aspects of TDZ in Plant Tissue Culture with profitable implications. The book will provides basic material for academicians and researchers who want to initiate work in this fascinating area of research. The book will contain 26 chapters compiled by International dignitaries and thus giving a holistic view to the edited volume.