

**AGRICULTURAL RESEARCH
AT THE CROSSROADS**
Revisited Resource-poor Farmers and
the Millennium Development Goals
Bo M.I. Bengtsson

978-1-57808-514-9; 2007; 350 pages, hc;
\$ 59.50 [ebook 978-1-57808-565-1]

The author addresses major issues concerning global food security and food safety, agrarian change, agricultural development, and the orientation of agricultural research to benefit the less privileged of the world.

"... a useful resource for instructors, students, and researchers in agricultural policy and economics, agribusiness, and international development..."

— **CHOICE**, November 2007
Vol. 45, No. 03

"... strongly recommended not only to policy makers in agricultural research, extension and education but also to the general public..."

— **Experimental Agriculture**,
Vol. 44 (2008)

"The book provides a benchmark against which future developments can be tested and judged. It is a must-read for all who are or will be involved in the politics of global food supply and safety and in agricultural research and development..."

— **Soil Science Society of
America J**, Vol. 72, No. 5,
September–October 2008

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PRECISION AGRICULTURE '05
J.V. Stafford (ed.)

978-1-57808-391-6; 2005; 1008 pages, hc;
\$ 165.00

The concept of precision agriculture may well be centuries old but its implementation in the twenty-first century, made possible by amazing technological developments, is key to the success of agriculture in the midst of a myriad of restraints unknown to farmers in the past. In such a scenario, research is essential so that rational, intelligent and systematic approaches may be taken in production agriculture to achieve the benefits that precision agriculture can bring.

**Economic Analysis
of Diversity in
Modern Wheat**

Editors:
Erika C.H. Meng
John P. Brennan

NEW

**ECONOMIC ANALYSIS OF
DIVERSITY IN MODERN WHEAT**

Editors:
Erika C.H. Meng: International Maize and
Wheat Improvement Center, (CIMMYT), El
Batan, Texcoco, Mexico
John P. Brennan: E.H. Graham Center for
Agricultural Innovation, Wagga Wagga, NSW,
Australia

978-1-57808-575-0; November 2009;
ca. 220 pages, hc; \$ 95.00

The book describes generally how policies affect wheat genetic diversity; it looks at historical changes in wheat genetic diversity, as policy and priorities have evolved; it identifies factors that explain changes and differences in spatial diversity; and finally, it analyzes the productivity impacts of changes in diversity. Chapters define various types of crop genetic diversity and ways to measure them, framing the definitions and metrics in the contexts for which they are most relevant.

**BREEDING SERVICES FOR
SMALL DIARY FARMERS**
Sharing the Indian Experience
C.T. Chacko and F. Schneider



978-1-57808-380-0; 2005; 214 pages,
CD-Rom included, pb; \$ 33.00

This book systematically introduces the reader to the breed improvement theory and illustrates the theory with practical examples and case studies. The book is addressed to animal science teachers, to undergraduate and graduate students, as well as to decision makers in the state and central livestock departments.

**BIOTECHNOLOGY IN
SUSTAINABLE BIODIVERSITY
AND FOOD SECURITY**

B.N. Prasad (ed.)

978-1-57808-268-1; 2003; 202 pages, hc;
\$ 84.00

**SHOULD GLOBAL AGRICULTURE
BE LIBERALIZED?**

Theories, Models and Realities

*Jean-Marc Boussard, Françoise Gerard
and Marie-Gabrielle Piketty (eds.):*
CIRAD, France

978-1-57808-542-2; 2008; 175 pages, pb;
\$ 39.50 [ebook 978-1-57808-628-3]

According to *standard* economic theory and modelling, liberalizing agriculture will result in important welfare gains. Because of price volatility, an alternative model, based in *general disequilibrium* in the Wicksellian tradition, provides much less optimistic conclusions, actually supported by the recent evolution of the world agricultural system, as well as by the history of the many attempts of agricultural trade liberalization since the 18th century.

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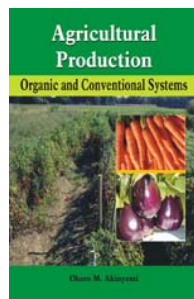
* Additional 20% discount when you order more than one copy (no returns).

FUNDAMENTALS OF MODERN AGRICULTURE

P. Prévost and P. Le Glou

978-1-886106-89-5; 1997; 236 pages, pb;
\$ 42.00

This is a translation of a popular French text. The objective of the author is to provide an understanding of all the elements of a "system" and an awareness of all aspects involved in an agricultural career.



AGRICULTURAL PRODUCTION Organic and Conventional Systems

O.M. Akinyemi

978-1-57808-512-5; 2007; 240 pages, hc;
\$ 64.40 [ebook 978-1-57808-648-1]

This book examines the efficiency and economic benefits of agricultural production, comparing both organic and conventional systems in some crops and animal production.

ENVIRONMENT AND CROP PRODUCTION

Editors:

R. Dris: University of Helsinki, Finland

I.A. Khan: Sultan Qaboos University, Muscat, Oman

S.M. Jain: IAEA, Vienna, Austria

978-1-57808-257-5; 2002; 362 pages, hc;
\$ 106.40

The book is a compilation of articles on various issues, presented at the workshop on the Influence of Environment on Growth, Production, Physiology, and Diseases of Crops, held at the University of Helsinki, Finland, December 2000. It reviews environmental factors influencing the growth, development, and production of food crops grown under various conditions.

MICROBIAL INTERACTIONS IN AGRICULTURE AND FORESTRY

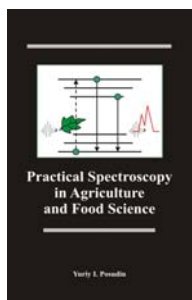
N.S. Subba Rao and Y.R. Dommergues (eds.)

Volume 1

978-1-57808-017-5; 1998; 300 pages, hc;
\$ 88.50

Volume 2

978-1-57808-138-7; 2000; 312 pages, hc;
\$ 98.60



PRACTICAL SPECTROSCOPY IN AGRICULTURE AND FOOD SCIENCE

Yuriy Posudin: National Agricultural University, Kiev, Ukraine

978-1-57808-505-7; 2007; 208 pages, hc;
\$ 64.40

Introduces students and specialists of agricultural and food science to fundamentals of optical spectroscopy, main principles of modern spectroscopic instrumentation, advantages and practical applications of spectroscopic methods to investigation of agricultural objects such as milk and dairy products, eggs, honey, animal hair, and agronomic plants.

AGROECOLOGICAL PERSPECTIVES IN AGRONOMY, FORESTRY, AND AGROFORESTRY

Paul A. Wojtkowski

978-1-57808-217-9; 2002; 370 pages, pb;
\$ 53.80

Provides a detailed and advanced look at concepts, principles, and practices underlying agroecology. Treatment starts with the

plant-plant interface and proceeds on to agrotechnologies and then to landscape design. Discussion touches on competitive production, spatial theory, soil sustainability, insect and weed management, and tree management, in addition to economic factors, forestry technologies, water management, and complex disarrayed agroecosystems.

THE THEORY AND PRACTICE OF AGROFORESTRY DESIGN A Comprehensive Study of the Theories, Concepts and Conventions that Underlie the Successful Use of Agroforestry

Paul A. Wojtkowski

978-1-57808-034-2; 1998; 296 pages, pb;
\$ 33.00

Provides a detailed and indepth look at concepts, principles, and practices that underlie agroforestry application. The focus is on how the individual parts (the theories and concepts) form the whole (the process of designing or understanding user-specific agroforestry systems) and how theory influences or leads to successful application.

"... An excellent book for students of agroforestry and practitioners interested in going beyond field basics."

— *Agroforestry News*, Vol. 7,
No. 4, July 1999

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THE LIVING SOIL**Fundamentals of Soil Science and Soil Biology**

Jean-Michel Gobat, Michel Aragno, and Willy Matthey: l'Université de Neuchâtel, Switzerland

... see *Env. Science*

AGROSPHERE**Nutrient Dynamics, Ecology, and Productivity**

K.R. Krishna

978-1-57808-275-9; 2003; 355 pages, hc; \$ 98.60

This book deals with agro-ecological aspects of nutrients essential to crop production. It presents a brief description about agrosphere, its expanse, contrasting features, and interactions with other ecospheres, and global nutrient dynamics and food production trends within various agro ecosystems. This is followed with chapters about various belts that contribute to global food grain harvests.

FUNDAMENTALS OF PLANT BREEDING AND HYBRID SEED PRODUCTION

R.L. Agrawal

978-1-57808-029-8; 1998; 402 pages, hc; \$ 55.40

INTRODUCTORY TOPICS: Introduction; Historical Résumé; Crop Germplasm; Reproductive System; Male Sterility; Self-incompatibility; Techniques of Artificial Hybridization; Genetic Basis of Plant Breeding; Selection; Interspecific and Intergeneric Hybridization
METHODS OF CROP BREEDING: Pure-line Selection; Pedigree Method; Bulk-population Method; Backcross Method; Population Improvement; Recurrent Selection; Germplasm Composites and Synthetic Varieties; Asexually Propagated Crops; Apomictic Grasses; Corn Hybrids; Hybrid Varieties; Mutation Breeding; Polyploid Breeding; Disease Resistance Breeding; Insect Resistance Breeding; Abiotic Stresses; Breeding for Specific Traits; Plant Tissue Culture; Genetic Engineering
SEED PRODUCTION: Release and Maintenance of Crop Varieties; Plant Variety Protection; Hybrid Seed Production

SOIL MICROBIOLOGY

N.S. Subbarao

978-1-57808-070-0; 1999; 424 pages, pb; \$ 42.00

A comprehensive book dealing with all aspects relating to soil fertility, soil health, and plant growth in relation to microbial activity. It is meant for students and teachers dealing with agriculture, soil science, agricultural microbiology, and environmental sciences.

SYMBIOTIC NITROGEN FIXATION**Prospects for Enhanced Application in Tropical Agriculture**

Rachid Serraj (ed.)

978-1-57808-335-0; 2004; 382 pages, hc; \$ 89.00

Traditional cropping systems that rotate cereals and legumes to keep nitrogen in the soil have broken down as cereal production has skyrocketed to feed livestock, which often replaces legumes as a protein source. Now that increasing cost and environmental impact are inhibiting the further use of chemical fertilizers to plug the hole in the cycle, efforts are underway to enhance the biological nitrogen fixation abilities of the legumes that are still grown. This volume is a compilation based on a workshop in Montpellier, France in June 2002, 23 papers report on developments to date, focusing on tropical agriculture.

MONOGRAPH OF GENUS *ORYZA*

J.S. Nanda and S.D. Sharma (eds.)

978-1-57808-273-5; 2003; 412 pages, hc; \$ 100.20

In an overdue updated treatment, two international experts on rice collect 11 papers on various aspects of this primary staple food for about half of the world's population. Papers range from translations of two classic reviews of contributions to the field from the 1920s and 1930s to original chapters on the latest DNA mapping of the genus. Includes color illustrations and appendices on taxonomic and cultivation improvement issues.

PRINCIPLES OF WEED SCIENCE, 2/ed

V.S. Rao

978-1-57808-069-4; 2000; 568 pages, pb; \$ 55.40

A comprehensive reference-cum-textbook on fundamentals and principles of weed science, this book includes updated information on newer approaches (ecophysiological and biological) in weed management, newer herbicides, bioherbicides, herbicide action mechanisms and transformations in plants, herbicide persistence and behaviour in soil and environment, and interaction of herbicide with other agrochemicals.

"... very appropriate for use by its target audience Upper-division undergraduates through faculty."

— **CHOICE**, September 2000, Vol. 38, No. 1

"... a very useful reference cum textbook."

— **Weed Technology**, Vol. 14, No. 4

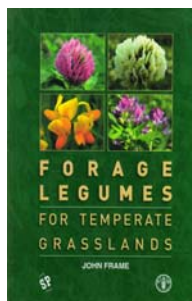
DEHYDRATION OF PRODUCTS OF BIOLOGICAL ORIGIN

A.S. Mujumdar (ed.): National University of Singapore, Singapore

978-1-57808-280-3; 2004; 553 pages, hc; \$ 109.20

The coverage of this book ranges from drying fundamentals and modeling (e.g. psychrometry, role of glass transitions in drying, diffusion model of falling rate period, freeze drying, vacuum drying etc.), to drying practices in wood, biomass, alfalfa, cocoa etc. processing. It also covers new drying technologies such as, superheated steam drying and heat pump drying in inert atmosphere, that have already been accepted in the industry.

A PDF version of this catalog is also available on our website (www.scipub.net)



FORAGE LEGUMES FOR TEMPERATE GRASSLANDS

John Frame: Food & Agriculture Organization of the UN, Rome, Italy

978-1-57808-358-9; 2005; 320 pages, pb; \$ 59.00

Presents information relevant to practical applications of forage legumes. Given a new appreciation of the plants' role in temperate grasslands and the benefits of a legume rich diet, the author discusses topics including legume plants' development, nitrogen-fixing property, nutritional value, and utilization as an animal feed. Color-illustrated

profiles of 35 forage species, and a glossary of common plant and species names are given.

"... The author's knowledge and experience tells on every page and in my opinion this is a first-rate book well worth purchasing and reading."

— **Biologist**, Vol. 54, No. 2, May 2007

"This book is strongly recommended to all interested in temperate pastures, stock rearing and land management."

— **Experimental Agriculture**, Vol. 42, 2006

"A book of this nature is long overdue. One dealing with tropical forage legumes would also be a valuable asset."

— **CHOICE**, September 2005, Vol. 43, No. 1

BIOTECHNOLOGY, BIOSAFETY, AND BIODIVERSITY

Scientific and Ethical Issues for Sustainable Development

S. Shantharam and Jane F. Montgomery: USDA, Riverdale, Maryland, USA

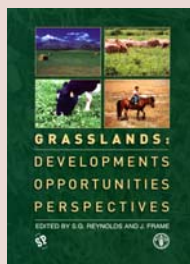
978-1-57808-018-2; 1999; 252 pages, hc; \$ 56.00

PLANT ECOPHYSIOLOGY

Jean-Claude Leclerc: l'université de St. Etienne, Etienne, France

978-1-57808-247-6; 2003; 314 pages, hc; \$ 75.00

In this translation of the French edition the author treats the interrelated factors that affect plants' adaptations to their environments. Applying ecophysiological principles to identify mechanisms of dysfunction in ecosystems, he presents data-based cases for: less stressful growing methods (e.g. using cultivars that require less water and polluting fertilizers); confining genetically modified organisms to the lab; and reality-based holistic studies.



GRASSLANDS Developments, Opportunities, Perspectives

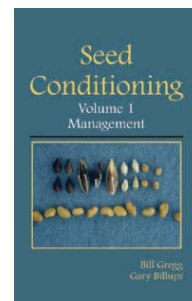
Stephen Reynolds and John Frame (eds.): Food and Agriculture Organization of the UN, Rome, Italy

978-1-57808-359-6; 2005; 556 pages, 43 color plates, pb; \$ 74.00

This book examines the current grassland problems and issues, and provides an insight into grassland productivity in diverse areas of the world, with their various production systems.

"It complements and is a useful addition to other volumes of the FAO grassland series and merits a wide readership."

— **Experimental Agriculture**, Vol. 42, 2006



NEW

SEED CONDITIONING Vol. 1 Management: A Practical Advanced-level Guide

Bill R Gregg: Seed Industry Development & Conditioning Specialist, Starkville, MS, USA

Gary L. Billups: President, Crippen International, Inc., Anna, TX, USA

978-1-57808-572-9; May 2009; 497 pages, hc; \$ 145.00 [ebook 978-1-57808-610-8]

To make seed conditioners more efficient, this *Seed Conditioning* compendium was prepared. Based on real-life experiences, trials and efforts of many conditioners were compiled and distilled into a brief, easy-to-understand form.

Basic topics are covered, plus "secrets of the trade" that are important for all seed industry participants need to know so they can fit their contributions into the entire seed supply program.

DRYING AND STORAGE OF CEREAL GRAINS

B.K. Bala

978-1-886106-93-2; 1997; 312 pages, hc; \$ 55.40

"... is particularly useful as a text in university level (agricultural) engineering courses on the subject."

— **Drying Technology**, Vol. 17, No. 3, 1999

CONTENTS: Principles of Drying; Moisture Contents and Equilibrium Moisture Content Models; Psychrometry; Physical and Thermal Properties of Cereal Grains; Air Flow Resistance and Fans; Thin Layer Drying of Cereal Grains; Deep Bed and Continuous Flow Drying; Grain Drying Systems; Principles of Storage; Temperature and Moisture Changes during Storage; Fungi, Insects and Other Organisms Associated with Stored Grain; Design of Grain Storages; Grain Storage Systems; Appendix A: Finite Difference Approximation; Appendix B: Gaussian Elimination Method

DRYING TECHNOLOGY IN AGRICULTURE AND FOOD SCIENCES

A.S. Mujumdar (ed.): National University of Singapore, Singapore

978-1-57808-148-6; 2000; 328 pages, hc; \$ 89.00

CONTENTS: Equilibrium Moisture Relations for Foods and Biomaterials: *Wladyslaw Kaminski and Tadeusz Kudra*; Moisture Diffusivity in Foods—An Overview: *Shyam Sablani* et al.; Quality Changes During of Food Materials: *Magdalini Krokida and Zacharias Maroulis*; Hygrothermal Properties of Grains: *János Beke and A.S. Mujumdar*; Quality Changes During Drying of Food Polymers: *Srinivas Achanta and Martin R. Okos*; Physical Property Changes of Fruits and Vegetables During Hot Air Drying: *Wijitha Senadeera* et al.; Spray and Freeze Drying of Enzymes: *Ana M.R. Pilosof and Mauricio R. Terebiznik*; Physical Properties and Drying Rate of Alfalfa: *Rhambo T. Patil and Shahab Sokhansani*; Principles, Applications, and Potential of Heat Pump Drying Systems: *Chua Kian Jon* et al.; Principles and Applications of Microwave Drying: *E. Sanga* et al.; Innovation in Drying Technologies: *A.S. Mujumdar and M.L. Passos*

INTEGRATED PEST MANAGEMENT OF TROPICAL PERENNIAL CROPS

Dominique Mariau (ed.): CIRAD, France

978-1-57808-042-7; 1999; 182 pages + 6 color plates, pb; \$ 50.40

This work examines the use of commercially available pesticides effectively for a given pest, the role of beneficial insects, and the procedures to be implemented to augment the action and promote the introduction of the more effective parasitoids and predators. It describes the often major impact of entomopathogenic organisms in regulating populations and the possibilities offered by their use as a means of biological control, the use of cultural techniques that work against pests or, on the other hand, the suppression of methods that encourage them. It reveals the importance of olfactory and visual stimuli in insect behaviour and the use that can be made of such stimuli, either as a direct control method, or to improve knowledge about population size and dynamics. Lastly, it touches upon the use of more tolerant plant material which, alongwith the progress made in plant breeding techniques and enhanced knowledge of the genome, is an area with substantial prospects.

MOLECULAR INSIGHT IN PLANT BIOLOGY

P. Nath & S.A. Ranade: National Botanical Research Institute, Lucknow, India
Jacques-Henry Weil: Institute de Biologie Moleculaire des Plantes, Strassbourg, France

978-1-57808-187-5; 2003; 267 pages, hc; \$ 95.20

Contains 21 chapters divided into three sections: Molecular Biology and Biotechnology of Genomes; Molecular Biology and Biotechnology of Hormonal and Chemical Signalling; and Molecular Biology and Biotechnology of Transformed Plants.

PHOTOSYNTHESIS Regulation Under Varying Light Regimes

V.S. Rama Das

978-1-57808-343-5; 2004; 206 pages, hc; \$ 72.80

The book broadly reviews the research literature on light regulation in photosynthesis in higher plant systems, along with some discussion of green algae and cyanobacterial examples where appropriate. Chapters present the recent state of knowledge related to photoinhibition; photoprotection; leaf heliotropism, solar tracking, and regulation of light interception, acclimation of photosynthesis to light environment, and transgenic and biotechnological approaches.

"... recommend the book to all educational institutions, teachers and research workers interested in the field."

— *Current Science*, Vol. 89, No. 7, October 2005

A PDF version of this catalog is also available on our website (www.scipub.net)

ROOT HAIRS: THE 'GILLS' OF ROOTS

Development, Structure, and Functions

V. Bhaskar

Foreword by: Graeme P. Berlyn: Yale University, USA

978-1-57808-274-2; 2003; 208 pages, hc; \$ 107.50

The book covers the occurrence, life history, cytology, anatomy, morphology, and physiology of root hairs. It also analyses the critical role of root hairs in the development of nodules—both rhizobial and actinorrhizal—in the process of symbiotic nitrogen fixation. Less well known, but still important is the role of root hairs in mycorrhizal symbioses and their importance for the mineral nutrition of plants.

Low stock availability

NEUROTRANSMITTERS IN PLANT LIFE

V.V. Roshchina: Russian Academy of Sciences, Institute of Cell Biophysics, Moscow, Russia

978-1-57808-142-4; 2001; 292 pages, hc; \$ 98.00

The book examines the functions of the neurotransmitters acetylcholine and biogenic amines dopamine, noradrenaline, serotonin, and histamine in plant organisms. Also addressed are how many plant reactions are sensitive to neurotransmitters and their significance in the field of medicine. Papers in the collecting describe participation of the components of animal cholinergic and aminergic regulatory systems in the functioning of many plant processes within and outside the cell, from changes in ion permeability of membranes, energetics, and metabolism to complex processes.

New Book Proposals

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PLANT MICRONUTRIENTS

C.P. Sharma

978-1-57808-416-6; 2006; 272 pages + 6 color plates, hc; \$ 100.20
[ebook 978-1-57808-661-0]

This book addresses biochemical and physiological roles of micronutrients in plants and the diverse ways in which they react to limitations in micronutrients supply, contributing to global constraints in crop production.

"... provides a quick and reliable reference for experts in either field without too many details."

— *J of Plant Physiology*,
No. 4/10, 164(2007)

"... can serve not only as useful source of information for researchers in the area of plant nutrition but also as a textbook for advanced students."

— *Biologia Plantarum*,
Vol. 51, No. 2, 2006/07

BIOPHYSICAL PROCESSES IN LIVING SYSTEMS

P.P. Saradhi (ed.)

978-1-57808-157-8; 2001; 380 pages, hc; \$ 103.00

"Twenty independent research groups share their experience in unraveling various aspects of living system through a multidisciplinary approach using biophysics along with biochemistry and molecular biology...."

— *SciTech Book News*,
September 2001

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BIOTECHNOLOGY**Secondary Metabolites, 2/ed**

K.G. Ramawat and J.M. Merillon (eds.)

978-1-57808-428-9; 2007; 586 pages, hc; \$ 72.80
[ebook 978-1-57808-597-2]

This edition, which reflects new research and includes information on fungi and lichen opens by explaining the opportunities for new research. Subsequent chapters cover secondary plant products in nature such as alkaloids and other metabolites, factors affecting the production of secondary metabolites, production of food additives and insecticides, and production of antitumor compounds, alkaloids, steroids, saponins, secondary metabolites by bioconversion, genetic transformation, large-scale production in bioreactors and production of ergot alkaloids. Very interesting chapters include those on lichen products, the Chinese herbal drug industry and secondary metabolites investigated in a variety of cultures, and the collection concludes with information on tools and techniques for the study of plant tissue culture and practical information on culturing and tests.

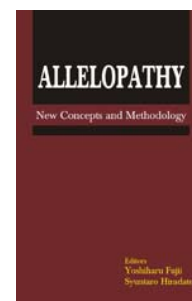
KARYOTAXONOMICAL ANALYSIS IN THE UMBELLIFERAE

Michael G. Pimenov et al.

Edited by: *Victoria C. Hollowell*: Missouri Botanical Garden, Missouri, USA

978-1-57808-222-3; 2002; 478 pages, hc; \$ 132.20

The book is a critical World summary of all karyological data known up-to-now for the large angiosperm family Umbelliferae (Apiaceae, carrot family) being of considerable economic value. It also contains analysis of these data in comparison with taxonomy. Chromosome numbers are known for the 1755 species distributed over the world; morphometric data—for 341 species. Bibl. 1278.

**ALLELOPATHY****New Concepts and Methodology**

Yoshiharu Fujii and S. Hiradate (eds.)

978-1-57808-446-3; 2007; 398 pages, hc; \$ 100.20 [ebook 978-1-57808-604-7]

The technological advances made in allelopathy research in recent years have been created, analyzed, and developed by scientific establishments throughout the world. They present exciting and intellectually challenging problems which are solvable using modern techniques. These modern and advanced techniques as described in the chapters presented in this volume are representative of the exciting research and development approaches today.

PLANT NUTRITION**Growth and Diagnosis**

Editors:

R. Dris: Univ. of Helsinki, Finland
Farouk Abdelaziz: Minia University, Egypt
S.M. Jain: IAEA, Vienna, Austria

978-1-57808-230-8; 2002; 324 pages, hc; \$ 105.30

Contributions focus on individual crops or groups of crops grown for food and renewable raw materials, with information presented on crop biology, plant and soil analysis data, nutrient uptake and removable figures, recommendations for fertilizer use, and current fertilizing practices in different topical, subtropical, and temperate countries.

New Book Proposals

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NITROGEN ASSIMILATION BY PLANTS

Physiological, Biochemical, and Molecular Aspects

Jean-François Morot-Gaudry (ed.):
INRA-Laboratoire de la Nutrition azotée
des Plantes, Versailles, France

978-1-57808-139-4; 2001; 470 pages, hc;
\$ 132.20

"... This book deserves a place in university libraries where plant physiology students can use it to supplement plant mineral nutrition information...."

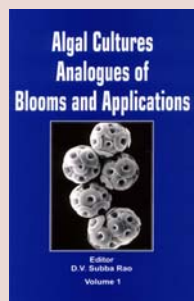
— **The Quarterly Review of Biology**,
Vol. 77, No. 3, September 2002

ARBUSCULAR MYCORRHIZAE Interactions in Plants, Rhizosphere, and Soils

A.K. Sharma and B.N. Johri (eds.)

978-1-57808-206-3; 2002; 322 pages, hc;
\$ 105.30

Introduction / **INTERACTIONS IN RHIZOSPHERE**: Section Summary; Mycorrhiza—Microbe Interactions: Effect on Rhizosphere: *C.K. Suresh and D.J. Bagyaraj*; Interactions between Arbuscular Mycorrhizal Fungi and Non-Symbiotic Beneficial Microbiota: *C. Calvet et al.*; Interaction of Arbuscular Mycorrhiza with Nitrogen-fixing Bacteria: *A.K. Saxena et al.*; Arbuscular-Mycorrhiza and Plant Disease: *A.K. Sharma and B.N. Johri* / **INTERACTIONS IN SOIL**: Section Summary; Influence of Edaphic and Environmental Factors on Arbuscular Mycorrhizae: *Teresa E. Pawlowska and Iris Charvat*; Influence of Adverse Soil Conditions on the Formation and Function of Arbuscular Mycorrhiza: *James A. Entry et al.*; Arbuscular Mycorrhizae: Mineral Nutrient and Water Acquisition: *R.B. Clark and S.K. Zeto*; Possible Role of Arbuscular Mycorrhizal Fungi in Development of Soil Structure: *J.C. Tarafdar and A.V. Rao* / **INTERACTIONS IN PLANTS**: Section Summary; Plant and Fungal Responses to Colonization: *Reena Singh and Alok Adholeya*; Cellular and Molecular Aspects: *Gaspar, Moria Laura*; Specificity and Compatibility in Arbuscular Mycorrhizal Symbiosis: *E. Dumas-Gaudot*; Physiology of Nutrient Uptake by Arbuscular Mycorrhizal Fungi: *A.K. Sharma and B.N. Johri*



ALGAL CULTURES, ANALOGUES OF BLOOMS AND APPLICATIONS

D.V. Subba Rao (ed.): Bedford Institute of Oceanography, Dartmouth, NS, Canada

eBook 978-1-57808-562-0; 2006; 1016 pages (2 vols.), hc; \$ 143.40

Discusses how best algal cultures can be utilized as analogues of natural blooms, their utility in understanding the ecological principles and their applications in biotechnology. The text provides an important resource to ecological concepts such as nutrient kinetics, bacterial interactions, response and recovery to environmental perturbations.

"... [editor] provided a great service to our scientific community by editing this book that represents an obligatory addition to the personal library of senior and junior algologists."

— **J of Phycology**,
Vol. 42, 2006

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www.scipub.net

TEXTBOOK OF BIODIVERSITY

K.V. Krishnamurthy

978-1-57808-325-1; 2003; 276 pages, pb; \$ 39.50

Based on course notes for students specializing in plant science and biotechnology, the author has attempted to fill the need for a comprehensive treatment of the growing multidisciplinary field of biodiversity science. Issues such as problems in inventorying species and legal, ethical, and information aspects have been covered.

CONTENTS: Biodiversity Science: Definition, Scope, and Constraints; Genetic Diversity; Species Diversity: Wild Taxa; Agrobiodiversity and Cultivated Taxa; Ecosystem Diversity; Values and Uses of Biodiversity; Loss of Biodiversity; Conservation of Biodiversity; Management of Plant Biodiversity; Biodiversity and Biotechnology and; Biodiversity Prospecting and Indigenous Knowledge Systems

FLOWERS

Evolution of the Floral Architecture of Angiosperms

Guillaume Tcherkez: University of Paris, France

978-1-57808-311-4; 2004; 194 pages, hc;
\$ 87.40

The author has reconciled the so-called conventional descriptive botanical approach with the more recent molecular approach, in order to more effectively put them in perspective. The emphasis is on the diversity of strategies of fertilization that constitutes one of the characteristics of Angiosperms.

"...is recommended for academic and special libraries with related programming and research."

— **e-STREAMS**, Vol. 8, No. 6/7
Index

"If you are interested in flower and reproduction biology you should have this book directly on your bookshelf...."

— **Folia Geobotanica**, 41/3, 2006

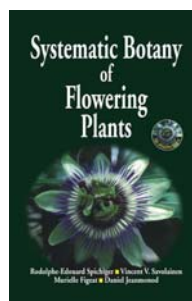
GENETIC DIVERSITY OF CULTIVATED TROPICAL PLANTS

Perla Hamon: Centre Universitaire, Nîmes, France

Marc Seguin, Xavier Perrier, and Jean Christophe Glaszmann: CIRAD, Montpellier, France

978-1-57808-264-3; 2003; 359 pages, hc;
\$ 89.60

Among the major questions that arise when creating and maintaining genetic resource collections are how to construct consensus trees or common minimum trees, and what the reliability and biological significance of such trees are. Contributors of this volume seek answers by examining eleven types of crop plants, selected to represent a wide range of biological types. They also discuss biological and molecular markers, data analysis, and maximizing variability. This volume was updated at the time of translating from the French edition.



SYSTEMATIC BOTANY OF FLOWERING PLANTS

A New Phylogenetic Approach of the Angiosperms of the Temperate and Tropical Regions

R.-E. Spichiger: A l'Université de Genève, Switzerland

V.V. Savolainen: Royal Botanical Garden, Kew, UK

Murielle Figeat and Daniel Jeanmonod: Botanique de la Ville de Genève, Switzerland



978-1-57808-373-2; 2004; 428 pages + 16 color plates + CD Rom, pb; \$ 65.00

The book follows the overall classification of the Angiosperms Phylogeny Group (APG). It takes into account the taxonomic positions of the second publication of this group of researchers (APG II), as well as the new concepts discussed during the Botanical Congress of St. Louis. Some new families have been proposed: *Droseraceae*, *Lythraceae*, *Cornaceae*, *Oleaceae*, *Gesneriaceae*, and *Alliaceae*. Some families were completed or combined.

The book includes a CD-ROM illustrating all the families described with photographs of selected species. The CD-ROM also includes the cumulative identification keys of orders and families, as well as two summary tables of all the useful plants with their use and their common names. A list of common names and their corresponding binomials is provided for all the illustrated plants and all the useful plants cited.

VASCULAR ORGANIZATION OF ANGIOSPERMS: A New Vision

Jean-Pierre Andre: INRA, Champenoux, France

978-1-57808-382-4; 2005; 154 pages, pb; \$ 44.20

"... this book is recommended for anyone who specializes in plant vascular development, structure, or function. The techniques described could also be applied in more general ways, such as in the study of mutant phenotypes."

— *The Quarterly Review of Biology*, Vol. 81, No. 3, September 2006

Physiology of the Pea Crop

Book co-ordinated by: *Nathalie Munier-Jolain, Véronique Biarnès, Isabelle Chaillet, Jérémie Lecoeur, Marie-Hélène Jeuffroy*



PHYSIOLOGY OF THE PEA CROP

Book co-ordinated by: *Nathalie Munier-Jolain, Véronique Biarnès, Isabelle Chaillet, Jérémie Lecoeur, Marie-Hélène Jeuffroy*

With the collaboration of: *Benoît Carrouée, Yves Crozat, Lydie Guillioni, Isabelle Lejeune, Bernard Tivoli*

978-1-57808-570-5; December 2009; ca.310 pages, hc; \$ 99.50

This book presents vegetative and reproductive development, growth under non-limiting conditions and the nitrogen nutrition of the pea crop. Secondly, the effects of abiotic and biotic stresses on the development, the growth and the nitrogen uptake by the plant are studied. Finally, a global model of functioning of the pea crop is proposed as a tool for the diagnosis of the yield limiting factors.

This review, rich in bibliographic references, is intended for researchers, academics, breeders, and extension specialists.

PLANT SYSTEMATICS

An Integrated Approach, 3/ed
Gurcharan Singh



978-1-57808-668-9; November 2009; ca.720 pages incl. 37 color plates* + CD-Rom**, pb; \$75.00

The focus of the present edition has been to further consolidate the information on the principles of plant systematic, include detailed discussion on all major systems of classification, and significantly, also include discussion on the selected families of vascular plants, without sacrificing the discussion on basic principles. The families included for discussion are largely those which have wide representation, as also those that are less known but significant in evaluating the phylogeny of angiosperms. The discussion of the families also has a considerable focus on their phylogenetic relationships, as evidenced by recent cladistic studies, with liberal citation of molecular data. Several additional families have been included for detailed discussion in the present volume.

Contents: Plants, Taxonomy and Systematics; Botanical Nomenclature; Hierarchical Classification; Descriptive Terminology; Process of Identification; Variation, Biosystematics, Population Genetics and Evolution; Taxonomic Evidence; Developing Classifications; Phylogeny of Angiosperms; Families of Pteridophytes; Families of Gymnosperms; Major Families of Angiosperms

* comprising 450 color plates

** comprising over 600 color photograph

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AGROMETEOROLOGY OF MULTIPLE CROPPING IN WARM CLIMATES

C. Baldy and C.J. Stigter

978-1-886106-92-5; 1997; 248 pages,
16 color plates, pb; \$ 49.30

CLASSIFICATION, DEFINITIONS, AND ANALYSES OF MULTIPLE CROPPING:

Classification of Multiple Cropping Systems;
Special Climatic Features of High-temperature
Areas; Spatial Management of Multiple
Cropping Systems; Methods of Analysing
Multiple Cropping

AGROMETEOROLOGY OF MULTIPLE

CROPPING: Interception of Rainfall by Multiple
Cropping Systems; Other Climatic Factors;
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Photosynthesis in Multiple Cropping; Energy
Balance and Evapotranspiration in Multiple
Cropping; Conclusions

AGRONOMIC APPLICATIONS OF

AGROMETEOROLOGICAL STUDIES IN

MULTIPLE CROPPING: Agroclimatic Modifica-
tions by Intercrops Including a Cereal; Studies
of Agroforestry Systems; Agrometeorological
Consequences of Traditional Cropping
Techniques; Overall Conclusion; Epilogue for the
English Edition; *Annexures:* Glossary of
Acronyms, Plant Species and Terms in the Text;
Instruments and Methods

INCREASING PRODUCTIVITY OF INTENSIVE RICE SYSTEMS THROUGH SITE-SPECIFIC NUTRIENT MANAGEMENT

Achim Dobermann, Christian Witt, and
D. Dawe (eds.): International Rice
Research Institute, Los Banos, Philippines

978-1-57808-266-7; 2004; 420 pages, hc;
\$ 66.60

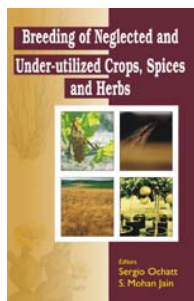
This book summarizes research
conducted from 1994 to 2001 to
develop and evaluate a new con-
cept for site-specific nutrient
management and the tools needed
for applying it in farmers' fields
with irrigated rice.

EVOLUTION AND ADAPTATION OF CEREAL CROPS

V.L. Chopra and S. Prakash (eds.)

978-1-57808-190-5; 2002; 296 pages, hc;
\$ 100.20

This book looks at evolution and
adaptation of the major cereals of
world agriculture, with separate
chapters on rice, wheat, maize,
barley, sorghum, and pearl millet.



BREEDING OF NEGLECTED AND UNDER-UTILIZED CROPS, SPICES AND HERBS

Editors:

Sergio Ochatt: INRA, Dijon, Cedex, France
S.M. Jain: University of Helsinki, Finland

978-1-57808-509-5; 2007; 468 pages, hc;
\$ 122.60 [eBook 978-1-57808-552-1]

The book addresses various aspects
of cultivation, taxonomy, socio-
economic importance and breeding
& development as applied to
neglected and under-utilized crops.
The first chapter deals with the
more general aspects of cultivation
and propagation of these crops,
thirteen chapters are devoted to
different neglected crops, nine of
which focus on seed propagated
crops and the remaining four on
vegetatively propagated ones, while
the last five chapters describe the
uses, importance, propagation and
improvement of neglected and
under-utilized crops from different
regions of the world.

"... a reference book
which should be on the
shelves of libraries and
in the offices of re-
searchers concerned..."

— **Experimental Agriculture**,
Vol. 44 (2008)

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CROP PROTECTION

NEW

From Agrochemistry to Agroecology

Jean-Philippe Deguine: CIRAD, France
Pierre Ferron: INRA, Centre de recherche
de Montpellier, France
Derek Russell: Natural Resources Institute,
University of Greenwich, UK

978-1-57808-652-8; October 2009;
216 pages, pb; \$ 97.50
[ebook 978-1-57808-666-5]

This book is a synthesis and a
celebration of a large body of agro-
ecological research carried out on
the management of the pests of
cotton, one of the world's major
crops and one which has histori-
cally been a very heavy consumer
of inputs of pesticides. It demon-
strates how agro-ecological ap-
proaches to pest management are
at last approaching the 'main-
stream', with an increasing recogni-
tion that farmland delivers a wide
range of ecosystem services
(nature's goods and services),
including but certainly not solely
comprising the production of food.

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CROP SYSTEM DYNAMICS

An Ecophysiological Simulation Model of Genotype-by-Environment Interactions

YIN Xinyou and H.H. van Laar

978-1-57808-383-1; 2005; 140 pages, pb;
\$ 46.00

The authors present a generic
process-based crop growth model,
the genotype-by-environment
interactions on crop growth simula-
tor (GECROS). Model theories are
described in individual chapters, and
their supporting texts (notably
model derivations) are given in
appendices. The model source code,
written in the simulation language
FST (Fortran Simulation Translator)
is provided, along with the defini-
tions of variables. The book is
meant for those interested in using
models as a tool to address ques-
tions related to crop production and
especially environmental variables
and genotype characteristics.

PHYSIOLOGY OF STRESSED CROPS*U.S. Gupta: University of Georgia, Athens, USA***Hormone Relations**

978-1-57808-355-8; 2004; 254 pages, hc; \$ 86.80

The book examines stress-induced alterations in hormonal balance and their effects in the physiology of important crop plants and on their yield and quality characteristics.

Nutrient Relations

978-1-57808-371-8; 2005; 250 pages, hc; \$ 89.00

Deals with nutrient stress in crops, including both deficiency and toxicity.

The Stress of Allelochemicals

978-1-57808-390-9; 2005; 202 pages, hc; \$ 84.00

The book discusses mechanisms of allelochemical stress, autotoxicity, crop-crop interference, crop-weed interference, tree-crop interference, allelochemical interaction with other stress factors such as moisture, temperature, nutrient and radiation stress, and development of more aggressive crops that can tolerate noxious weeds.

Osmoregulation and Protection

978-1-57808-440-1; 2006; 244 pages, hc; \$ 94.10

Of the osmoregulants and protectants discussed in this volume, trehalose, fructans, ectoine and citrulline, which are generated in different species, in osmotically ineffective amounts, mitigate the stress effects on cells/plants and improve productivity.

Membrane System

978-1-57808-521-7; 2007; 418 pages, hc; \$ 111.40

The membrane functions are affected by different abiotic (biotic stress not discussed), nutritional, edaphic and mechanical stresses, which have been discussed in this volume in light of the recent literature/researches.

MODELING CROP PRODUCTION SYSTEMS**Principles and Applications***P. Singh*

978-1-57808-418-0; 2008; 510 pages, pb; \$ 59.50 [ebook 978-1-57808-641-2]

"...(Author) discusses a systems approach to modeling crop production in a clear, engaging fashion. The topics are well organized.... Collectively, these topics provide the necessary tools to develop and implement a system-modeling approach in crop production or otherwise. A strong point of the book is the many examples that help to clarify the material. This book is critical for any agricultural science library and valuable for professionals in agriculture, plant pathology, entomology, soil science, and ecology. **Summing Up: Essential, Upper-division undergraduates through professionals/practitioners.**"

— CHOICE, July 2008, Vol. 4, No. 11

**SOIL FERTILITY AND CROP PRODUCTION***K.R. Krishna*

978-1-57808-215-5; 2002; 484 pages, hc; \$ 111.40

CITRUS: Production, Post Harvest, Disease and Pest Management*S. Mukhopadhyay*

978-1-57808-337-4; 2004; 290 pages, hc; \$ 87.40

The book covers citrus taxonomy, genetic-diversities of its members, varieties of rootstocks and scions of commercial significance, modern production, postharvest and protection technologies.

SOIL BIOCHEMISTRY*Konrad Haider: Augustinum, Diessen, Ammersee, Germany**Andreas Schäffer: Institute for Environmental Research (Biology V), RWTH Aachen University, Germany*

978-1-57808-579-8; July 2009; 132 pages, hc; \$ 59.50

Soils play a central role in the conversion of organic matter and element fluxes because of the large number of microorganisms present in the soil. In this book the more important processes that are driven by microbiological activity are discussed.

It will be of interest to students of chemistry, biology, ecology, soil science and related areas. Researchers from these fields will profit from extended literature surveys in each chapter comprising important findings from early as well as the most recent investigations.

GENETIC IMPROVEMENT OF COTTON**Emerging Technologies***Johnie N. Jenkins and S. Saha (eds.): USDA-Agricultural Research Center, Mississippi, USA*

978-1-57808-145-5; 2001; 354 pages, hc; \$ 98.60

"... a good complement to other recently published monographs on cotton..."

— Plant Science, 161 (2001) 1179–1180

Low stock availability

CROP MANAGEMENT AND POSTHARVEST HANDLING OF HORTICULTURAL PRODUCTS

R. Dris and R. Niskanen: World Food Ltd., Meri-Rastilantie, Helsinki, Finland
S.M. Jain: International Atomic Energy Association, Vienna, Austria

Fruits and Vegetables

978-1-57808-216-2; 2003; 422 pages, hc; \$ 111.40

Crop Fertilization, Nutrition and Growth

978-1-57808-278-0; 2003; 410 pages, hc; \$ 94.10

Disease and Disorder of Fruits and Vegetables

978-1-57808-279-7; 2004; 346 pages, hc; \$ 103.00

MAPPING OF THE SOIL

Jean-Paul Legros: L'Ecole Nationale Supérieure Agronomique (ENSA), Montpellier, France

978-1-57808-363-3; 2005; 426 pages, hc; \$ 84.00

"... this well written and organized book provides a very comprehensive view of the current status of methods used in soil mapping and would be recommended as a textbook for college courses, although it might be best suited for graduate-level courses...."

— **J Environmental Quality**, Vol. 36, No. 5, 2007

"... a very useful reference for conducting a soil survey project from start to finish."

— **Soil Science Society of America J**, August 2006

"This book will help anyone to better understand the mapping of soil, and comes highly recommended."

— **Geological Magazine**, Vol. 143/4–2006

FLORA OF SIBERIA

L.I. Malyshev (Editor-in-Chief)

"... The Siberian Flora series provides basic information about vascular plant diversity in this region and can be recommended above all to plant taxonomists and ecologists."

— **Folia Geobotanica**, Vol. 42/4, 2007

Volume 1: Lycopodiaceae Hydrocharitaceae

978-1-57808-072-4; 2000; 208 pages, hc; \$ 84.00

Volume 2: Poaceae (Gramineae)

978-1-57808-101-1; 2001; 372 pages, hc; \$ 98.60

"... a useful resource for the researcher and an excellent addition to the reference library for any botanist interested in Siberian flora or general taxonomy and phytogeography of grasses."

— **Folia Geobotanica**, Vol. 42/4, 2007

Volume 3: Cyperaceae

978-1-57808-102-8; 2001; 280 pages, hc; \$ 93.00

Volume 4: Araceae—Orchidaceae

978-1-57808-103-5; 2001; 250 pages, hc; \$ 106.40

Volume 5: Salicaceae—Amaranthaceae

978-1-57808-104-2; 2002; 316 pages, hc; \$ 123.20

Volume 6: Portulacaceae—Ranunculaceae

978-1-57808-105-9; 2003; 312 pages, hc; \$ 123.20

Volume 7: Berberidaceae—Grossulariaceae

978-1-57808-106-6; 2004; 323 pages, hc; \$ 127.70

Volume 8: Rosaceae

978-1-57808-107-3; 2004; 208 pages, hc; \$ 103.00

Volume 9: Fabaceae (Leguminosae)

978-1-57808-108-0; 2006; 286 pages, hc; \$ 107.50

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978-1-57808-109-7; 2006; 326 pages, hc; \$ 121.00

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978-1-57808-110-3; 2006; 310 pages, hc; \$ 117.60

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978-1-57808-111-0; 2007; 222 pages, hc; \$ 106.40

Volume 13: Asteraceae (Compositae)

978-1-57808-112-7; 2007; 499 pages, 16 color plates with 61 photos, hc; \$ 161.30

Volume 14: Additions and Corrections; Alphabetical Indexes

978-1-57808-113-4; 2008; 210 pages, hc; \$ 97.50 [ebook 978-1-57808-619-1]

A Revised Handbook to the FLORA OF CEYLON

M.D. Dassanayake (series editor)

In this revision project contributors offer the latest on fern allies such as psilotaceae and isoetaceae, leptosporangiate (aquatic) ferns such as salvinaceae and marsileaceae, and the full range of eusporangiate ferns.

Volume XV, Part A: Ferns and Fern-Allies

Monika Shaffer-Fehre (ed.)

978-1-57808-384-8; 2006; 209 pages, hc; \$ 100.70

Volume XV, Part B: Ferns and Fern-Allies

Monika Shaffer-Fehre (ed.)

978-1-57808-410-4; 2006; 336 pages, hc; \$ 100.70

PLANTS OF CENTRAL ASIA**Plant Collections from China and Mongolia***V.I. Grubov (Editor-in-Chief)*

An English translation of the series prepared by the Komarov Botanical Institute. Covers Altai, Khangai, Kentei Ranges in the north, Greater Khingan Range in the east, Pamir in the West, The Great Wall of China in the southeast, and the Himalayas in the south.

The text has been update in the English edition for some of these volumes.

Volume 1: Introduction, Ferns, Bibliography

978-1-57808-060-1; 1999; 198 pages, hc; \$ 77.30

Volume 2: Chenopodiaceae

978-1-57808-087-8; 2000; 198 pages, hc; \$ 73.90

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978-1-57808-114-1; 2000; 160 pages, hc; \$ 88.50

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978-1-57808-119-6; 2003; 182 pages, hc; \$ 94.10

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978-1-57808-120-2; 2003; 122 pages, hc; \$ 77.30

Volume 8c: Astragalus L.

978-1-57808-341-1; 2004; 262 pages, hc; \$ 98.60

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978-1-57808-121-9; 2005; 207 pages, hc; \$ 95.20

Volume 10: Araliaceae, Umbelliferae, Cornaceae

978-1-57808-122-6; 2005; 156 pages, hc; \$ 86.80

"A number of species have been recorded in the target territory for the first time, including 8 previously unknown species."

— *Huntia* 12(2), 2006

Volume 11: Amaranthaceae — Caryophyllaceae

978-1-57808-123-3; 2007; 148 pages, hc; \$ 76.20

Volume 12: Nymphaeaceae-Ceratophyllaceae, Ranunculaceae-Berberidaceae, Menispermaceae

978-1-57808-441-8; 2007; 206 pages, hc; \$ 106.40

Volume 13: Plumbaginaceae, Oleaceae, Buddlejaceae, Gentianaceae, Menyanthaceae, Apocynaceae, Asclepiadaceae

978-1-57808-421-0; 2007; 149 pages, hc; \$ 95.20

Volume 14a: Compositae (Anthemideae)

978-1-57808-422-7; 2007; 176 pages, hc; \$ 98.60

This volume deals with the tribe Anthemideae of the largest family of Compositae. The book contains 6 plates, 8 maps of distribution ranges.

VASCULAR PLANTS OF THE RUSSIAN FAR EAST

Volume 1: **Lycopodiophyta, Juncaceae, Poaceae (Gramineae)**

N.N. Tzvelev (ed.)

978-1-57808-290-2; 2003; 544 pages, hc; \$ 184.80

This is the first of the ten volumes covering the extensive region, that lies at the interface of Eurasia and America. It covers 160 families, nearly 800 genera and about 4000 species. A list of families in order of treatment is given.

OAKS OF ASIA

Yu.L. Menitsky

978-1-57808-229-2; 2005; 549 pages, hc; \$ 140.00 [ebook 978-1-57808-644-3]

The book provides a description of the family *Fagaceae* Dumort and a morphological and biological description of genus *Quercus* L. It describes the systematics and geography of the oaks of Asia, their distribution and participation in the forest communities of Asia, and the phylogenetic series of species and the evolutionary pathways of Old World oaks. Includes resources and an index of the Latin names of plants.

Low stock
availability

KEY TO THE VASCULAR PLANTS OF MONGOLIA

V.I. Grubov: Komarov Botanical Institute, St. Petersburg, Russia

978-1-57808-073-1; 2001; 844 pages (2 vols.), hc; \$ 201.60

Presents a key to the pteridophytes, gymnosperms, and angiosperms found in the Mongolian People's Republic. The key comprises 2239 species of vascular plants, relating to 599 genera and 103 families. Families and species are arranged according to A. Engler's system; diagnostic characteristics of plants are included in the consecutive dichotomous keys for identifying families, genera, and species. The region and habitat where each plant may be found is also given. Detailed line drawings illustrate over 1,000 plants.

FLORA OF THE USSR**Alphabetical Indexes to Volumes I-XXX**

E.G. Bobrov and N.N. Tzvelev

978-1-57808-334-3; 2004; 254 pages, hc; \$ 111.40

This volume consists mainly of separate indexes to the scientific (Latin) names of the families and the genera and species in the Flora.

PINE FORESTS**Utilization of its Products***V.N. Vorob'ev*978-1-57808-396-1; 2006; 271 pages, hc;
\$ 106.40 [ebook 978-1-57808-594-1]

The forests of Siberian stone pine are vast and their products, including timber, nuts, and resin are valuable economically. However, managing the forests is problematic, largely due to questions about their morphophysiological, ontogenetic and eco-geographic circumstances, how they relate to populations in and out of the forest, how they reproduce and how they form resin. The author presents over 20 years of research about the Siberian stone pine, including its ecology, cone production, growth characteristics, cone yield, resin productivity, and the cone yield, growth and resin productivity of the Siberian stone pine under experiments modifying the relations between lead and root. The book ends with recommendations on comprehensive commercial utilizations.

**ECOLOGY OF SIBERIAN
DWARF PINE PINUS PUMILA
(PALLAS) REGEL IN
KAMCHATKA**
Peter. A. Khomentovsky (Reviewed by
Jerry Rehfeldt; reviewed and edited by Jim
Pojar)

978-1-57808-189-9; 2004; 244 pages, hc; \$ 99.70

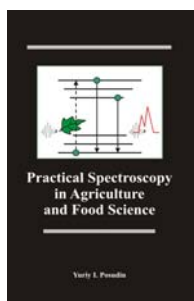
The author integrates his own field studies into reports of others into the ecology in northeast Asia and the peninsula of the tree that was recognized as a separate species about 140 years ago but has been of little interest to foresters until the past few decades. He looks at taxonomic position, range, and relations in the boreal forests of the northern hemisphere; its place in the plant cover of the target region; its formation in Kamchatka in the Late Cenozoic; morphology and seasonal development, and the development of communities.

**FOOD TECHNOLOGY AND
QUALITY EVALUATION**

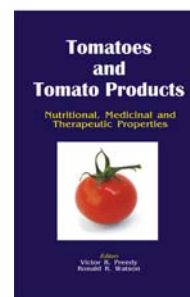
Editors:

R. Dris: University of Helsinki, Finland
A. Sharma: Food Technology Division,
 BARC, Mumbai, India
978-1-57808-235-3; 2003; 286 pages, hc;
\$ 105.30

The book covers the entire spectrum of activities in the area of fruit and vegetable and few other plant products, e.g. medicinal, including production yields, and quality assessment.


**PRACTICAL SPECTROSCOPY
IN AGRICULTURE AND
FOOD SCIENCE**
Yuriy Posudin: National Agricultural
 University, Kiev, Ukraine
978-1-57808-505-7; 2007; 208 pages, hc;
\$ 64.40 [ebook 978-1-57808-600-9]

Introduces students and specialists of agricultural and food science to fundamentals of optical spectroscopy, main principles of modern spectroscopic instrumentation, advantages and practical applications of spectroscopic methods to investigation of agricultural objects such as milk and dairy products, eggs, honey, animal hair, and agronomic plants.


**TOMATOES AND TOMATO
PRODUCTS**
**Nutritional, Medicinal and
Therapeutic Properties**

Editors:

Victor Preedy: King's College, London, UK
Ronald Watson: University of Arizona,
 Tuscon, USA
978-1-57808-534-7; 2008; 665 pages, hc;
\$ 135.00 [ebook 978-1-57808-626-9]

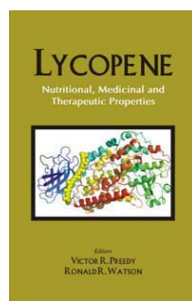
The book covers emerging fields of science and important discoveries relating to tomatoes and related products. This represents a one-stop shopping of material related to tomatoes. This book will be essential reading for plant scientists, nutritionists, dieticians, pharmacologists, health care professionals and research scientists.

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 (www.scipub.net)



LYCOPENE

Nutritional, Medicinal and Therapeutic Properties

Editors:

Victor Preedy: King's College, London, UK

Ronald Watson: University of Arizona, Tuscon, USA

978-1-57808-538-5; January 2009;

472 pages, hc; \$ 116.00

[ebook 978-1-57808-633-7]

There has been a growing interest in exploring the role of lycopene in the prevention of a variety of nutritional and health issues, including some cancers and cardiovascular diseases. Increasingly, clinical evidence supports the role of lycopene as a nutrient with important health benefits, since it appears to provide protection against a broad range of epithelial cancers. The possibility that consumption of lycopene-rich foods may reduce the risk of such diseases has prompted numerous in-depth studies of the levels of lycopene in foods and of correlations between dietary lycopene and certain diseases.

This monograph will serve as a reference for providing a better understanding of the role of lycopene in promoting health, and by encouraging a deeper understanding of approaches to a healthy diet and life.

NOVEL THERAPEUTIC AGENTS FROM PLANTS

Editors:

Maria C. Carpinella: School of Chemistry, Catholic University of Córdoba, Argentina

M. Rai: Department of Biotechnology, SGB Amravati University, Maharashtra, India

978-1-57808-546-0; March 2009; 470 pages, hc; \$ 129.00

Since the advent of synthetic drugs, the use of natural products has diminished. However, the diversity of natural molecules still surpasses those from synthetic compounds, and this ensures that natural products will continue to be important for drug discovery. Besides, many of the currently used synthetic drugs have side-effects and often expensive.

The volume covers multiple curative aspects of natural chemicals. It is a complete review of medicinally active metabolites produced by nature and looked at from different approaches. The book describes the effects of natural extracts and/or their isolated compounds and also gives an update of their modes of action, production and commercialisation.

SAFFRON (*CROCUS SATIVUS*)

Production and Processing

M. Kafi et al. (eds.): Ferdowsi University of Mashhad, Iran

978-1-57808-427-2; 2006; 252 pages, hc;

\$ 66.60 [ebook 978-1-57808-566-8]

The book presents a comprehensive account of saffron which includes the historical background, acreage underproduction, yield and applications, botanical ecophysiology, production technology, irrigation, pests, diseases and weeds, genetics, sterility, reproduction and production of secondary metabolites by *in vitro* method, economic aspects, indigenous knowledge in saffron production, processing, chemical composition and quality control, and research strategies.

CUMIN (*Cuminum cyminum*)

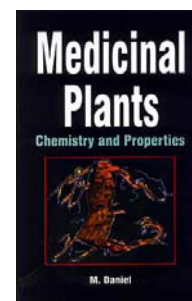
Production and Processing

M. Kafi et al. (eds.): Ferdowsi University of Mashhad, Iran

978-1-57808-504-0; 2006; 168 pages, hc;

\$ 55.40

This book provides essential information regarding all things cumin, the popular spice that is primarily grown in South Asia and the Middle East. Ten chapters discuss cumin's history, botany and plant characteristics, ecophysiology, economic aspects, chemical composition, regions of production, and uses. Also addressed are technologies involved with cumin production, relevant diseases, pests, and weeds; principles of genetics, breeding, and *in vitro* production of the spice; and research strategies that involve it.



MEDICINAL PLANTS

Chemistry and Properties

M. Daniel

978-1-57808-395-4; 2006; 266 pages, hc;

\$ 66.60 [ebook 978-1-57808-593-4]

In-depth knowledge of the chemistry of medicinal plants is essential in understanding the manifold utilities of such plants; and to enhance our understanding of the quality of raw materials, extracts and formulations; and in marketing plant-derived drugs.

The selection of plants studied in this treatise is based on its significance, and its representation of members of different taxonomic families as well as of different classes (and sub-classes) of compounds. All the available data on the chemical compounds and the pharmacological studies on these plants/compounds have been incorporated.

COMPENDIA OF WORLD'S MEDICINAL FLORA

A. Singh

978-1-57808-430-2; 2006; 356 pages, pb;

\$ 61.60 [ebook 978-1-57808-598-9]

The present work is aimed at documentation of chemical composition, medicinal use and modern investigative work on medicinal plants. As the name of the title suggests, the work includes rare medicinal plants used globally in medicine.

BIOTECHNOLOGY OF MEDICINAL PLANTS

Vitalizer and Therapeutic

K.G. Ramawat (ed.)

978-1-57808-338-1; 2004; 316 pages, hc; \$ 98.60

This book provides comprehensive and useful information on the medicinal plants especially those used as food supplement in the form of health vitalizers and invigorators. Separate chapters are devoted to the medicinal values of each herb.

This will be a source book for the herbalists, ayurvedic practitioners, drug manufacturers, botanists, biotechnologists, pharmacologists, agriculturists, phytochemists as well as anyone interested in medicinal plants research and biotechnology.

ISOLATION, IDENTIFICATION AND CHARACTERIZATION OF ALLELOCHEMICALS/ NATURAL PRODUCTS

Diego A. Sampietro, Cesar A.N. Catalan and Marta A. Vattuone (eds.): Universidad Nacional de Tucumán, Argentina

978-1-57808-577-4; July 2009; 555 pages, hc; \$ 139.00

The discovery of new bioactive compounds from natural products/ secondary metabolites has played a major role in the development of organic chemistry. The ecological role of these allelochemicals as herbicides, insecticides and fungicides for ecological/organic sustain-

able agriculture has recently drawn great attention, due to increasing public concern against synthetic pesticides. Current researches on natural products emphasize not only the need of structural elucidation of the isolated compounds but also of their natural biological function and possible utility for human purposes. These concerns require reliable protocols for such studies, which sometimes are not available worldwide.

This book has been written to provide information about all aspects of Allelochemicals/Natural Products. The book is divided in 3 sections - Sample Collection, Handling and Storage; Isolation, Identification and Structural Elucidation and Biological Activity of Natural Products. This book will serve as ready reference in the laboratory or class room to undergraduate and graduate students and Organic Chemists for Isolation, Identification and Characterization of Allelochemicals/Natural Products. The users of this book can select suitable methods, according to the available facilities.

MYCORRHIZAS A Molecular Analysis

K.R. Krishna

978-1-57808-362-6; 2005; 328 pages, hc; \$ 95.20

It will be useful to researchers/ students involved in microbiology, molecular biology, plant biology, agriculture and environment sciences.

BIOLOGY AND CONSERVATION OF MUSHROOMS

T.N. Kaul

978-1-57808-197-4; 2001; 274 pages, hc; \$ 72.80

This book has been divided into two main parts. Part one deals with biological features e.g. breeding patterns and mutations, besides discussing in depth poisonous, hallucinogenic, medicinal species and nutritional value. Part two is devoted solely to conservation of biological diversity, with special reference to mycodiversity—a field in which few publications are available for educated readers.

Series on: Progress in Mycological Research FUNGI FROM DIFFERENT ENVIRONMENTS

Editors: J.K. Misra and S.K. Deshmukh

978-1-57808-578-1; October 2009; 405 pages, hc; \$ 109.00

Mycologists now look at the genes of fungi to decipher many features that they have been studying in the past beyond just looking at the morphology and other such traits of these organisms. Fungi are also attracting the attention of scientists in various other disciplines. These include the search for useful fungi in various extreme environments that may be useful in other ways such as for their therapeutic value. Fungi are known to produce low molecular weight compounds and several cholesterol-lowering ones like the statins. Compounds such as the cytochalasins, peptaibols, grisan and scirpene derivatives are found only in fungi. Nanotechnology has opened many new areas of research including the use of microorganisms in the biosynthesis of nano-materials, including fungi.

This volume aims to bring together what we know about the fungi from different environments. It comprises of 14 chapters written by experts in their chosen area of specialization and covers fungi from various environments such as air, water (freshwater and marine), palaeo-environment, and their influence on the environment and their management.

THE DEUTEROMYCETES: MITOSPORIC FUNGI

Classification and Generic Keys

E. Kiffer: Université Nancy I, Vandoeuvre-lès-Nancy, Cedex, France

M. Morelet: INRA, Champenoux, France

978-1-57808-068-7; 2000; 300 pages, hc; \$ 95.20

This work is based on the modern classification Deuteromycetes. Barring some tropical examples, it covers essentially genera found in the temperate zone of the northern hemisphere. The book will interest medical and veterinary mycologists, phytopathologists, food scientists, and ecologists.

"The book plays a pivotal role in explaining conidiogenesis in all its aspects...."

— Sydowia, Vol. 53 (1), 2001

"For all professionals concerned with identification of mitosporic fungi and a major resource for upper-division undergraduate and graduate students in mycology."

— CHOICE, July 2000, Vol. 37

DETECTION AND ISOLATION OF SOIL FUNGI

Pierre Davet and Francis Rouxel

978-1-57808-125-7; 2000; 188 pages + 18 color plates, pb; \$ 55.40

Describes the methods needed to obtain a pure culture of a fungus from a soil sample or from an infected root. The book also presents the techniques and isolation media for a given fungus.

Introduction; Isolation of Soil Fungi: for What?; How to do it? / **GENERAL PRINCIPLES:** Extraction and Preparation of Samples; From Soil; From Roots; Isolation Techniques; Isolation from Soil (Direct Isolation Techniques; Baiting Techniques; Direct Extraction); Isolation from Roots (Small Root Pieces; Grinding and Suspension; Baiting); Selectivity Factors (Treatment of the Soil Sample; The Technique; Incubation Conditions); Culturing Techniques; Preparation of the Isolation Medium (Base Elements; Principal Selectivity Factors); Sterilisation of Media (General Procedure; Conservation); Incubation of Petri Dishes; Purification of Isolates / **PRACTICAL APPLICATIONS:** Basal Media; Techniques and Selective Media; Bibliography; Index of Organic Compounds; Index of Fungi; Index of Techniques and Media

A HANDBOOK OF RICE SEEDBORNE FUNGI

T.W. Mew and P. Gonzales (eds.):
International Rice Research Institute,
Los Banos, Philippines

978-1-57808-255-1; 2002; 83 pages, 230 color illustrations, 178 x 254 mm, hc; \$ 76.20

The authors provide information on over 50 species of fungus that have been detected in rice seed during routine testing and analysis. They can cause diseases of the foliage, stem, leaf sheath, root, grain, and inflorescence of rice.

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TRENTEPOHLIALES: CEPHALEUROS, PHYCOPELTIS, AND STOMATOCHROON

Morphology, Taxonomy, and Ecology

Rufus H. Thompson: University of Kansas,
Lawrence, KS, USA

Daniel E. Wujek: Central Michigan
University, Mt. Pleasant, MI, USA

978-1-886106-83-3; 1997; 160 pages, hc;
\$ 104.20

The book includes descriptions and keys to 41 species and one variety in the three genera. Original descriptions with drawings and micrographs are included; there are 60 plates with 265+ illustrations.

"... It is a superb scholarly publication that facilitates the understanding of this specialized group of green algae and should be of great use to the community of algal scholars including morphologists, taxonomists, systematists and evolutionary biologists."

— European J of Phycology,
Vol. 33, 1998

TRICHOMYCETES AND OTHER FUNGAL GROUPS

Robert W. Lichtwardt Commemoration
Volume

J.K. Misra: SJN University, Lucknow, India
Bruce W. Horn: National Peanut Research
Laboratory, Dawson, Georgia, USA

978-1-57808-132-5; 2001; 408 pages, hc;
\$ 111.40

The book has been divided into two parts. Part I comprises review chapters on trichomycetes-including the history, taxonomy, phylogeny, biogeography ultrastructure, and physiology of trichomycetes. Part II comprises a composite of topics. This part begins with two chapters on insect-fungus associations (ant pathogenic fungi and bark beetle galleries) followed by a chapter on nematophagous fungi. Subsequent chapters deal with such diverse mycological topics as fungal endophytes, endolithic microorganisms, aquatic ascomycetes and hyphomycetes, and mushrooms.

Low stock
availability

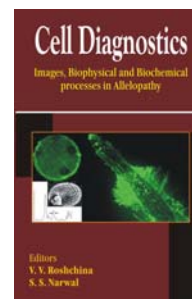


PLANT CELL BIOLOGY

William V. Dashek and Marcia Harrison (eds.)

978-1-57808-376-3; 2006; 506 pages,
pb; \$ 55.00

This textbook stresses on concepts and is inquiry-oriented. To this end, there is extensive use of original research literature. In addition it presents citations and summaries of certain laboratory methods. It stresses quantitative data to enhance the student's analytical abilities. The volume contains computer-spread sheets and references to statistical packages, e.g. Harvard Graphics and Statistica.



CELL DIAGNOSTICS

Images, Biophysical and Biochemical Processes in Allelopathy

Editors:

V.V. Roshchina: Russian Academy of
Sciences, Institute of Cell Biophysics,
Moscow, Russia

S.S. Narwal: CCS Haryana Agricultural
University, Hisar, India

978-1-57808-510-1; 2007; 224 pages, hc;
\$ 77.80 [ebook 978-1-57808-660-3]

This methodology book describes the recent approaches to study suitable model cellular systems for analysis of intercellular interactions, microscopic imaging of cells in the diagnostics of plant allelopathic effects and analytical estimation of some biochemical and biophysical processes occurring between the contacting cells.



FLUORESCING WORLD OF PLANT SECRETING CELLS

Victoria V. Roshchina: Russian Academy of Sciences, Institute of Cell Biophysics, Pushchina, Moscow, Russia

978-1-57808-515-6; 2008; 356 pages + 32 col. figs, hc; \$ 98.60 [ebook 978-1-57808-617-7]

The book summarizes information on autofluorescence of plant secretory cells as a phenomenon and the possibilities of the practical use of light emission by cell biologists, biophysicists, biochemists, botanists and ecologists. The spectrum of its readers may include lecturers, post-graduate students, students and others interested in biological light emission.

"... an excellent reference for professionals, researchers, and advanced students that are interested in ecology, plant science, criminology, and luminescence microscopy."

— *Plant Science Bulletin*,
55(1) 2009

JOURNEY OF A SINGLE CELL TO PLANT

S.J. Murch: National Tropical Botanical Garden, Kalraheo, Hawaii, USA

P.K. Saxena: University of Guelph, Ontario, Canada

978-1-57808-352-7; 2005; 384 pages, hc; \$ 109.80 [ebook 978-1-57808-647-4]

In plants, the ability to regenerate identical individuals from single cells is the basis for modern agriculture. These scientific advancements have given us virus-free stocks, novel germplasms, clonal propagation systems, and the commercial introduction of difficult to propagate plant species. The timescale for breeding programs was dramatically reduced as plant tissue culture technologies were developed to shorten the time between generations and reduce the number of generations required for a line to be developed. Without the capacity to regenerate plants, it would not have been possible for plant biotechnology and genetic engineering to have advanced this far.

This book contains detailed reviews by the leading scientists who made these discoveries.

IN VITRO APPLICATION IN CROP IMPROVEMENT

A. Mujib: Hamdard Univ., Delhi, India

Myeong Je Cho: University of California, Berkeley, USA

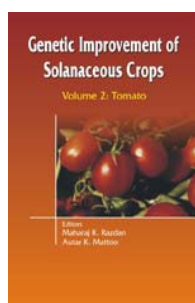
Stefano Predieri: Instituto di Biometeorologia Sez., Bologna, Italy

S. Banerjee: CSIRO, Collingwood, Victoria, Australia

978-1-57808-300-8; 2004; 338 pages, hc; \$ 98.60

A review of current and emerging trends in *in vitro* lab techniques. The 18 chapters treat basic science and application areas such as the role of plant tissue culture in plant improvement generally, and induced mutation for producing specific crops with greater disease resistance and yield. The editor defends against concerns over genetically-modified food production, by looking to strategies that extend plants' own disease resistance rather than transfer genes from other species.

A PDF version of this catalog is also available on our website (www.scipub.net)



GENETIC IMPROVEMENT OF SOLANACEOUS CROPS

M.K. Razdan: University of Delhi, India

A.K. Mattoo: USDA, ARS, Beltsville, USA

Volume 1: Potato

978-1-57808-184-4; 2005; 476 pages, hc; \$ 111.40 [ebook 978-1-57808-653-5]

The book deals with genetic modification to improve various traits in the world's fourth largest food crop. Their topics include breeding potential and transmission of traits in 4x-2x crosses, molecular markers in the identification of genotype variation, approaches to gene isolation, starch-sugar metabolism in potato tubers in response to temperature variations. Several of the 15 studies look at transformation for resistance to insects, viruses, bacterial pathogens, and late blight and other fungi.

Volume 2: Tomato

978-1-57808-179-0; 2006; 658 pages, hc; \$ 121.00 [eBook 978-1-57808-550-7]

Following an introduction to the history, origin, and early cultivation of the tomato, the book presents 15 survey papers that together provide an over-view of the current state-of-the-art in genetic modification of the tomato.

"Many readers, basic as well as from applied fields, should take advantage of the information offered here, and it is recommended not only for libraries but especially for individual researchers and breeders."

Journal of Plant Physiology, 165 (2008) 1317-1318

IN VITRO CULTURE TRANSFORMATION AND MOLECULAR MARKERS FOR CROP IMPROVEMENT

A.S. Islam (ed.)

978-1-57808-336-7; 2004; 228 pages, hc; \$ 84.00

The book provides latest information on a variety of subjects from pure micropropagation conservation to transformation in multitude of crops. It will serve as a valuable reference book in most of the research laboratories.

The chapters are derived from the Fourth International Conference held by Bangladesh Association for Plant Tissue Culture and Biotechnology.

AGROBIOTECHNOLOGY AND PLANT TISSUE CULTURE

S.S. Bhojwani and Woong-Young Soh (eds.)

978-1-57808-243-8; 2003; 210 pages, hc; \$ 105.30

Book covers such aspects as the physiology and biochemistry of somatic embryogenesis in white spruce, the germinability and shoot apical meristem differentiation of somatic embryos, estimating genetic relatedness in rice using DNA marker data, growth responses of tropical epiphytic orchids to carbon dioxide enrichment.

PLANT PHYSIOLOGY Characteristics, Breeding, and Genetics

*R. Dris: University of Helsinki, Finland
Catherine Barry-Ryan: University of Limerick, Ireland*

978-1-57808-240-7; 2002; 212 pages, hc; \$ 76.20

This book focuses on factors affecting physiological changes occurring during the growth and development of plants with a view to crop breeding. The book should be useful to scientists, researchers, students, or experts dealing with plant physiology, plant biotechnology, plant pathology, breeding, and genetics.

GENETICS AND BREEDING OF SUGAR BEET

*Enrico Biancardi and Marco de Biaggi: Istituto Sperimentale Per Le Colture Industriali, Rovigo, Italy
Larry G. Campbell: USDA Agricultural Research Station, Fargo, North Dakota, USA
George N. Skaracis: Hellenic Sugar Industries, Thessaloniki, Greece*

978-1-57808-366-4; 2005; 388 pages, hc; \$ 98.60 [ebook 978-1-57808-643-6]

"This book is an excellent survey of the current status of beet breeding and is unique in this field."

— **Experimental Agriculture**, Vol. 42, 2006

Low stock availability

BANANA IMPROVEMENT Cellular, Molecular Biology, and Induced Mutations

*Editors:
S.M. Jain: IAEA, Vienna, Austria
Rony Swennen: Catholic University of Leuven, Belgium*

978-1-57808-340-4; 2004; 392 pages, hc; 210 × 297 mm; \$ 123.20

It brings together 30 technical contributions and round out the volume with a summary of the project's achievements with regard to developing research tools for germplasm characterization and improvement through induced mutations, cryopreservation, somatic embryogenesis, somaclonal variation, and genetic engineering.

RICE BREEDING AND GENETICS Research Priorities and Challenges

J.S. Nanda (ed.)

978-1-57808-086-1; 2000; 390 pages, hc; \$ 84.00

"By eschewing a paradigmatic compilation, editor Nanda has provided an eclectic perspective for identifying priorities and meeting challenges in this critical area."

— **CHOICE**, July/August 2000

RICE GENETICS IV

Proceedings of the Fourth International Rice Genetics Symposium

G.S. Khush, D.S. Brar, and B. Hardy (eds.): International Rice Research Institute, Los Banos, Philippines

978-1-57808-167-7; 2001; 500 pages, hc; \$ 98.60

The volume comprises contributions by renowned geneticists on a wide range of topics from classical genetics to the most advanced research on sequencing of the rice genome and functional genomics.

"...Researchers interested in cutting-edge work in structural and functional analysis of the rice genome will also benefit from this fairly complete representation of the field...."

— **The Quarterly Review of Biology**, Vol. 77, No. 3 September 2002

TROPICAL PLANT BREEDING

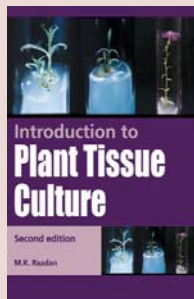
André Charrier, Michel Jacquot, Serge Hamon, and Dominique Nicolas (eds): CIRAD, France

978-1-57808-144-8; 2001; 575 pages + 87 color photographs in 24 plates, hc; \$ 87.40

The book reviews recent advances in tropical plant breeding. Each of the twenty-four chapters describes a specific crop, which has been written by scientists working in the field of plant breeding and genetic improvement of that particular species. The book will be a useful reference work for professional plant breeders as well as researchers, teachers, and students interested in this topic.

"... a comprehensive overview of the status of plant breeding in almost every tropical crop of any importance...."

— **J of Agricultural Science**, Vol. 138, 2002



INTRODUCTION TO PLANT TISSUE CULTURE, 2/ed

M.K. Razdan

978-1-57808-237-7; 2003; 330 pages;
180 × 240 mm, pb; \$ 49.50

INTRODUCTION AND TECHNIQUES:

Introductory History; Laboratory Organisation; Media; Aseptic Manipulation / **BASIC ASPECTS:** Cell Culture; Cellular Totipotency; Somatic Embryogenesis / **APPLICATIONS TO PLANT BREEDING:** Haploid Production; Triploid Production; *In Vitro* Pollination and Fertilization; Zygotic Embryo Culture; Somatic Hybridisation and Cybridisation; Genetic Transformation; Somaclonal and Gametoclonal Variant Selection / **APPLICATION TO HORTICULTURE AND FORESTRY:** Production of Disease-free Plants; Clonal Propagation / **GENERAL APPLICATIONS:** Industrial Applications; Secondary Metabolite Production; Germplasm Conservation

"This volume is an excellent addition to the literature on plant tissue culture research. The coverage and balance of this book is commendable. It is well edited and highly recommended to senior and graduate students, professors, and researchers in the fields of biology, crop production, plant breeding, horticulture and forestry, as well as pest management and environmental studies."

— The Quarterly Review of Biology, Vol. 79, June 2004

"... this book is a good starting text, especially for students who wish to have a general overview..."

— Plant Cell, Tissue and Organ Culture, 77:117, 2004

PLANT BIOTECHNOLOGY

A Practical Approach

H.S. Chawla

978-1-57808-296-4; 2003; 312 pages,
180 × 240 mm, pb; \$ 44.20

This practical laboratory manual has been designed to familiarise one with plant biotechnology protocols. The book describes simple plant tissue culture protocols that can be performed on easily available plant material, and also those meant for specific materials. Worksheets have been provided to record the results of the experiments. Exercises have been linked to one another, for a better understanding of the rationale for performing the exercise.

This will be a source book for the drug manufacturers, botanists, biotechnologists, pharmacologists, agriculturists, phytochemists as well as anyone interested in medicinal plants research and biotechnology.

Translated from French

GENETIC ENGINEERING AND BIOTECHNOLOGY

Concepts, Methods and Agronomic Applications

Yves Tourte: University of Poitiers, France

978-1-57808-356-5; 2005; 210 pages, pb;
\$ 43.70

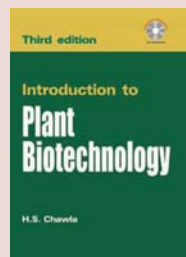
An overview of the principles of genetic engineering and biotechnology, with an emphasis on their applications in the field of agronomy. The book describes new applications and discusses bioethics in light of new legislation in the US and Europe.

Introduction / SOME BASIC CONCEPTS OF

BIOLOGY: Biology and Plant Physiology; Agronomy; Cellular and Molecular Biology / **PLANT BIOTECHNOLOGY AND GENETIC ENGINEERING:** A New Science but an Old Partner of Agriculture; *In Vitro* Culture; Gene Transfer in Plants; Plant Biotechnology and Other Biotechnologies / **APPLICATIONS OF BIOTECHNOLOGY AND GENETIC ENGINEERING:** Examples of the Impact of Biotechnology and Genetic Engineering on Agronomy; Plant Biotechnology and Bio-industries / **PLANT BIOTECHNOLOGY AND BIOETHICS:** Evaluation of Risks; Evaluation of Advantages; Regulatory Mechanisms / **CONCLUSION:** The Future of Biotechnology and Genetic Engineering in plants / Exercises / Glossary / Index

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NEW

INTRODUCTION TO PLANT BIOTECHNOLOGY, 3/ed

H.S. Chawla: G.B. Pant University of Agriculture & Technology, Pantnagar, India

978-1-57808-636-8; March 2009; 728 pages + 16 color plates, pb; \$ 69.50
[ebook 978-1-57808-637-5]

Part I: Plant Tissue Culture / Introduction; Laboratory Organization; Nutrition Medium; Sterilization Techniques; Types of Culture; Micropropagation; Cell Suspension and Secondary Metabolites; *In Vitro* Production of Haploids; Protoplast Isolation and Fusion; Somaclonal Variation; Germplasm Storage and Cryopreservation—**Part II: Genetic Material and its Organization** / Genetic Material; Organization of DNA and Gene Expression—**Part III: Recombinant DNA Technology** / Basic Techniques; Gene Cloning: Cutting and Joining DNA Molecules; Gene Cloning: Vectors; Gene Cloning: cDNA and Genomic Cloning and Analysis of Cloned DNA Sequences; Polymerase Chain Reaction; *In Vitro* Mutagenesis; Transposon Genetic Elements and Gene Tagging; Gene Isolation; Molecular Markers and Marker-Assisted Selection; Gene Transfer Methods; Chloroplast and Mitochondrion DNA Transformation; Transgenics in Crop Improvement; Impact of Recombinant DNA Technology; Biosafety Concerns and Regulatory Framework; Genomics; Bioinformatics; Intellectual Property Rights; Appendix; Glossary

Review of the First Edition

"... an excellent introduction ... appropriate for upper-division undergraduate and graduate students, faculty, and many practicing plant scientists who graduated before the genetic evolution."

— CHOICE, Vol. 38,
No. 3, February 2001



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www.scipub.net



FUNCTIONAL PLANT GENOMICS

J.F. Morot-Gaudry: INRA, Versailles, France

P. Lea: Lancaster University, UK

J.F. Briat: INRA, Montpellier, France

978-1-57808-506-4; 2007; 713 pages, hc; \$ 133.80

This book covers a wide area of concepts and methods in genomics. These range from international genome sequencing projects, to invaluable bioinformatics tools, and analytical methods of gene expression, including final metabolic products and their specific tissue and cellular compartmentalization.

... should be on the shelf of all libraries in the departments of genetics, molecular biology and biotechnology.

— **Current Science**, Vol. 94, No. 4, February 2008

"... the editors have created a book that can serve as a blueprint for scientists who wish to apply genomic tools in their research, as well as for educators who may find it to be an excellent reference for graduate and advanced undergraduate students."

— **The Quarterly Review of Biology**, Vol. 83, No. 3, September 2008

MOLECULAR MARKERS IN PLANT GENETICS AND BIOTECHNOLOGY

Dominique de Vienne (ed.): INRA, Versailles, France

978-1-57808-239-1; 2003; 248 pages, hc; \$ 88.50

This book describes the principal molecular marker techniques and details their application in different fields. Most of the examples it presents are drawn from plant science, but the methods and concepts are valid for any species. Tables, graphs, and diagrams provide visual representations of the data.

"...would be useful to anyone wanting to get started in the science use these techniques as a research tool"

— **Brittonia**, 56 (3), 2004

"There is no question that this book should be among the textbooks in University Libraries or wherever plant breeding is taught."

— **J of Botany**, Volume 74, Issue 2

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- ☐ Biological Science
- ☐ Environmental Science
- ☐ Medical Science

CONSERVATION OF PLANT GENETIC RESOURCES IN VITRO

M.K. Razdan and E.C. Cocking (eds.)

All chapters are well arranged, illustrated by tables, schemes, pictures and closed by list of references. The book is provided by Subject Index. It may be sincerely recommended to all those who wish to get knowledge on perspectives, methodology of *in vitro* conservation and cryo-preservation of specific crops.

— **Biologia Plantarum**, Vol. 46 (3), 2003

Volume 1: General Aspects

978-1-886106-76-5; 1997; 328 pages, hc; \$ 98.60

Volume 2: Applications and Limitations

978-1-57808-055-7; 2000; 320 pages, hc; \$ 98.60

GENETICALLY MODIFIED ORGANISMS

Transgenesis in Plants

Yves Tourte: University of Poitiers, France

978-1-57808-260-5; 2003; 124 pages, pb; \$ 33.00

This work reviews the theoretical and historical bases of genetic engineering, particularly in regard to genetically modified plants, and details techniques of creating genetically modified organisms. It describes research programs and results in areas such as agro-food, health, and the environment, and examines practical, legal, and ethical questions posed by society and the responses of scientists, legislators, and industry. B&W photos of equipment are included.

PLANT GENOME**Biodiversity and Evolution**

A.K. Sharma and A. Sharma (eds.)

Phanerogams: Part A978-1-57808-238-4; 2003; 400 pages, hc;
\$ 140.00

CONTENTS: Molecular Phylogenetics, Evolution and Population Biology in Brassicaceae: *Marcus Koch*; Evolutionary Dynamics of Repetitive DNA Fraction in Two Wild *Triticeae* Species: *Alexander Belyayev et al.*; Hybridization and Evolution of the nrITS Spacer Region: *Volker Wissemann*; Gene Families and their Evolution in Angiosperms: ABC Transporter Genes in *Arabidopsis thaliana*: *H. Üner Kolukisaoglu*; Cladistic Analysis of Chloroplast rbcL Gene and trnL-trnF Intergenic Spacer Sequences in Taxaceae and Related Taxa: *Ting Wang et al.*; Genome Phylogenetics in *Chrysanthemum sensu lato*: *Katsuhiko Kondo et al.*; Use of Repeated and Coding DNA Sequences to Study Genetic Relationships in Genus *Helianthus*: *A. Cavallini et al.*; Cytogenetic and Molecular Genetic Evidence on Evolution of Genus *Triticum*: *Wenguang Cao*; Hybrid Introgression in *Betula*: *Kesara Ananthawat-Jónsson*; Molecular Systematics of Bryophytes in Context of Land Plant Phylogeny: *Dietmar Quandt and Michael Stech*; The use of in-situ Hybridization to Investigate Plant Chromosome Diversity: *Paul Maxwell Datson and Brian Grant Murray*; Molecular Phylogenetic Studies in Rosaceae: *Daniel Potter*

Phanerogams: Part B978-1-57808-353-4; 2005; 352 pages, hc;
\$ 109.80

The book examines certain fundamental issues of genomics as well as the phylogeny and evolution of certain economic and medicinal crops. Economic crops include coffee, coconut, and papaya; medicinals cover *Artemisia* and *Costus*; fodder and agricultural crops include *Phleum*, *Lolium*, and *Triticale*; horticultural species include *Orchis* and *Allium*; and forest plants are represented by *Populus* species.

Phanerogams**(Angiosperm-Dicotyledons): Part C**978-1-57808-419-7; 2006; 595 pages, hc;
\$ 146.70

This volume concentrates on the dicotyledons including legumes, fruit plants in the species </Prunus>, grapes, oranges, olive, and pistachio. The volume comprises 20 articles by international contributors treating solutions of problems of phylogeny, evolution, and biodiversity in several taxonomic groups. They present data from chromosomal, molecular marker, and related studies on the

relationships between cultivated and wild species of such important food plants as chickpea, and their stresses and diseases. Illustrations (some in color) include plant distribution maps and genetic sequences.

Phanerogams (Gymnosperm and Angiosperm-Monocotyledons): Part D978-1-57808-420-3; 2006; 364 pages, hc;
\$ 106.40 [ebook 978-1-57808-596-5]

The coverage of this volume ranges from Cycads and Pines of Gymnosperms to monocot genera of significance in phylogeny, agri-horticulture and commerce. The previous volume (1C), dealt with dicot counterparts. Noteworthy features of the volume include molecular phylogeny of Cycads, correlation of genomics and micro habitat in Pinus, genome studies in oil and datepalm, correlation of molecular data with habit in orchids, congruence of karyotype and molecular data in Festuca and analysis of putative ancestors in Avena.

Phanerogam–Angiosperm: Part E978-1-57808-507-1; 2008; 416 pages, hc;
\$ 127.00 [ebook 978-1-57808-621-4]

Include genomics and evolution of different categories of higher plants, not dealt with in earlier volumes. The book starts with repeated DNA and genome evolution followed by rice genomics, wheat and allies having being covered in the earlier volumes. The fundamental topics of wide impact also include evolution of sex chromosome complexity as also the role of organelle and nuclear DNA in genome evolution and diversity. A special feature of the book is genomics of trees including oak, chestnut, *Eucalyptus* and *Azalea* representing both temperate and tropical regions. Covers, in a single volume, herbaceous agricultural crops on the one hand and ornamentals and important arboreal types on the other.

Lower Groups: Part A978-1-57808-298-8; 2004; 331 pages, hc;
\$ 106.40 [ebook 978-1-57808-642-9]

CONTENTS: Contemporary Perspectives on Florideophyte Red Algal Systematics (Florideophyceae, Rhodophyta): *James T. Harper* and *Gary W. Saunders*; Species Complex of Fungal

Phytopathogens: *Leptosphaeria Maculans*: L. Biglobosa Case Study: *Thierry Rouxel et al.*; Molecular Phylogeny and Evolution of Powdery Mildew Fungi (Erysiphales, Ascomycota), Obligate Parasites of Plants: *Susumu Takamatsu*; Molecular Systematics, Phylogeny, and Evolution in Homobasidiomycota: Oyster-mushroom Genus *Pleurotus*: *Georgios I. Zervakis*; Gene Diversity and Conservation in Phytopathogenic Fungi Revealed by EST Sequencing Initiatives and Comparative Genomics: *Darren M. Soanes* and *Nicholas J. Talbot*; Functional Analysis, Genome Redundancy, and Speciation in Yeast: *Daniela Delneri*; Lichens: *Martin Grube*; Fish Shows Structural Differentiation between Liverwort Sex Chromosomes: *Shigeki Nakayama et al.*; Mosses and Plant Functional Genomics: *Andrew J. Wood*; Evolution of Organellar Transcription Machinery in Bryophytes and Vascular Plants: *Yukihiro Kabeya* and *Naoki Sato*

Lower Groups: Part B978-1-57808-413-5; 2006; 527 pages, hc;
\$ 133.80 [ebook 978-1-57808-603-0]

This volume starts with a metabolic story, namely a survey of ancient through modern RNA, followed by the origins of plastids as a driving force for the evolution of algae, the evolution and diversity of dinoflagellates from a molecular perspective, the evolution of diatoms, the biodiversity as well as the evolutionary genomics and systematics of ascomycota, yeast biodiversity and function, evolutionary relationships among species of the *Aspergillus* subgenera *Aspergillus* and *Fumigati*, polymerase chain reaction-based methods in *Fusarium* taxonomy, using molecular markers to study host-pathogen co-evolution, internally transcribed spaces of the 18S-5.8S-26S nuclear ribosomal DNA in land plant systematics (with special emphasis on bryophytes), the molecular phylogeny and biogeography of *Plagiochila*, and genome studies of cactus.

"... will find a broad audience in the scientific community thanks to its broad coverage and highly actual content."

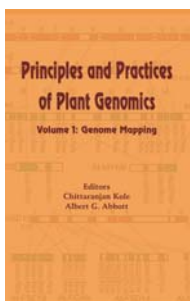
— *Folia Geobotanica*, 42/4, 2007

PRINCIPLES AND PRACTICES OF PLANT GENOMICS

Editors:

C. Kole: The Pennsylvania State University, USA

A.G. Abbott: Clemson University, South Carolina, USA



Volume 1: Genome Mapping

978-1-57808-525-5; 2008;
415 pages incl. 8 col. figs., hc; \$ 109.50
[ebook 978-1-57808-620-7]

The volume provides a historical background and overview on genome mapping. It deliberates on different types of molecular markers, their detection, relative merits, shortcomings and applications; types of mapping populations, methods of their generation, applications; basic concepts and schematic depiction of construction of genetic linkage maps; concepts and strategies of mapping genes controlling qualitative and quantitative traits on framework genetic linkage maps; rationale, methodologies and implications of comparative mapping; principles, strategies, and outcome of map-based cloning; overviews on the

recent advances on plant genomics and genome initiatives; and finally computer strategies and software employed in plant molecular mapping and breeding.

"This volume is well poised to become a reference classic for those willing to engage in the study of the structure and evolution of plant genomes and how this information can be used to improve crop performance."

— *Annals of Botany*,
November 2008, Vol. 102, No. 5

Volume 2: Molecular Breeding

978-1-57808-537-8; January 2009;
534 pages, hc; \$ 129.50

This book includes thirteen chapters with lucid deliberations on concepts, strategies and achievements of molecular mapping and breeding for yield, quality, biotic and abiotic stress resistance and physiological traits; and in crops requiring special strategies including fruits, forest trees, polyploids, fodder, forage and turf grasses along with principles, strategies and applications of germplasm characterization, transgenic breeding and Intellectual Property Rights.

NEW

MICROBIAL BIOTECHNOLOGY IN HORTICULTURE

Editors:

R.C. Ray: Central Tuber Crops Research Institute, Bhubaneswar, India

O.P. Ward: Department of Biology, University of Waterloo, Ontario, Canada

The application of microbial biotechnology has the potential to increase productivity, to enhance quality and shelf-life of the produce and to develop novel techniques in food processing and for conversion of horticultural wastes into renewal energy sources. In addition, a wide array of scientific activities and resulting associated products, including biofertilizers, biological N₂-fixation, microbial pesticides and microbial bio-control agents against plant pathogens focus at the interface between applied microbiology and horticulture. This volume attempts to highlight some of the significant aspects of the subjects.

Volume 1: 978-1-57808-417-3; 2006; 566 pages, hc; \$ 128.80

Volume 2: 978-1-57808-517-0; 2008; 366 pages, hc; \$ 95.20 [ebook 978-1-57808-616-0]

Volume 3: 978-1-57808-520-0; 2008; 390 pages, hc; \$ 95.20 [ebook 978-1-57808-618-4]

"This is a professional level text providing detailed scientific treatments of each topic. The book is excellent value for money..." —*J of Agricultural Science* (2009), 147

MICROBIAL BIOTECHNOLOGY IN AGRICULTURE AND AQUACULTURE

R.C. Ray (ed.)

Volume 1

978-1-57808-367-1; 2005; 506 pages, hc;
\$ 109.20 [ebook 978-1-57808-640-5]

The book studies the diversity of uses microbial biotechnology, and range from a very helpful overview to topics such as soil enzymes, rhizobial nitrogen fixation, the possible role of the arbuscular mycorrhizal fungi, sulfur, interactions amongst organisms, sustainable agriculture in arid soils, microbial biofertilizers in fish culture, actinomycetes in both aquaculture and agriculture, applications in industry, control of pathogens, biomass and control of residues, and the production of bioethanol from agricultural and forestry wastes.

Volume 2

978-1-57808-443-2; 2006; 569 pages, hc;
\$ 120.40 [ebook 978-1-57808-654-2]

This volume covers the important aspects of Microbial Biotechnology in Agriculture and Aquaculture with and aim to improve crop yield.

Translated from French

DISEASES OF TROPICAL TREE CROPS

Scientific Editor

Dominique Mariau: CIRAD, France

978-1-57808-175-2; 2001; 250 pages + 108 color photographs in 20 plates, pb; \$ 67.20

Presents an account of the status of significant research advances made by plant pathologists, entomologists, and plant breeders on the major diseases of tropical perennial crops *viz.*, avocado, coffee, coconut, hevea, mango, oil palm, papaya, citrus, and tea.

CONTENTS: Symptomatology and Economic Importance: *Jean-Luc Renard*; Pathogens: *Michel Dollet*; Varietal Resistance: *Hubert de Franqueville*; Insect Vectors: *Dominique Mariau*; Diseases of Tropical Tree Crops; Rational Chemical Control and Cultural Techniques: *Dominique Berry*; Healthy Plant Material and Certification: *Christian Vernière*; Conclusions

DISEASE AND INSECT RESISTANCE IN PLANTS

D.P. Singh and A. Singh

978-1-57808-412-8; 2005; 428 pages, hc; \$ 95.20

This book covers, in detail, the principles and practices of conventional plant breeding as well as newer and recent biotechnological tools such as marker assisted selection and transgenic crops. Suitable as an advanced text.

HELIOTHIS/HELICOVERPA MANAGEMENT

The Emerging Trends and Need for Future Research

H.C. Sharma (ed.)

978-1-57808-381-7; 2005; 482 pages, hc; \$ 95.20

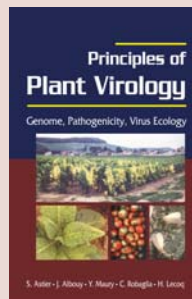
Considering the complexity of effectively managing *Heliothis/Helicoverpa*, it is imperative that an integrated approach be followed. The information presented in this book in different areas of research is aimed at minimizing the extent of losses due to these pests, and in identifying the gaps for future research thrusts. The book will serve as a source of information about *Heliothis/Helicoverpa* management and will be of interest to researchers, extension workers, and research planners worldwide.

MICROBIAL PLANT PATHOGENS AND CROP DISEASE MANAGEMENT

P. Narayanasamy

978-1-57808-207-0; 2002; 572 pages, hc; \$ 107.50

Presents strategies for the management of crop disease, and explores integrating various disease management strategies to achieve desired levels of suppression. The book describes methods of preventing introduction of microbial pathogens, cultural practices that suppress pathogen populations, alternative soil treatments, resistant cultivars, biocontrol agents, biotechnology for improvement of disease resistance, and crop disease management using chemicals. The introductory chapters review the characteristics of microbial pathogens and the diagnosis of crop diseases caused by them.



PRINCIPLES OF PLANT VIROLOGY

Genome, Pathogenicity, Virus Ecology

S. Astier, J. Albouy, Y. Maury, C. Robaglia and H. Lecoq (eds.)

978-1-57808-503-3; 2007; 494 pages + 8 color plates, pb; \$ 61.60
978-1-57808-316-9; 2007; 494 pages + 8 color plates, hc; \$ 100.20

This book presents the specific collaborations and the defensive and counter-defensive interactions that govern the virus intracellular cycle and plant infection. It describes the relations between the virus and the agro-environment and presents recent developments in diagnosis and control methods. It also gives detailed information on plant virus evolution and taxonomy.

THE VIRUS, THE CELL AND THE PLANT — Viral Structures; Infection of the Cell: Synthesis of Viral Proteins; Infection of the Cell: Replication of the Viral Nucleic Acid; Plant Virus Movement; The Defence Reaction of the Infected Plant; Resistance with Hypersensitivity Reaction and Extreme Resistance; Subviral Pathogenic RNAs: Satellites and Viroids

THE VIRUS IN THE AGRO-ENVIRONMENT — Virus Dissemination; *Diagnostic Methods*; Control of Plant Viral Diseases: Prophylactic Measures; Controlling Plant Viral Diseases: Breeding for Resistant Varieties; Control of Plant Viral Diseases: Genetic Engineering for Protection

EVOLUTION AND CLASSIFICATION OF VIRUSES — Evolution of Viruses; Classification of Plant Viruses; Viral Genera

SUGARCANE PATHOLOGY

Virus and Phytoplasma Diseases

G.P. Rao, R.E. Ford, M. Tosic, and D.S. Teakle (eds.)

978-1-57808-128-8; 2001; 390 pages, hc; \$ 66.60

Contains articles on diagnosis, taxonomy, transmission, new diseases, purification, characterization, host pathogen interactions and management.

Bacterial and Nematode Diseases

G.P. Rao, S. Saumtally, and Philippe Rott (eds.)

978-1-57808-178-3; 2004; 358 pages, hc; \$ 106.40

Older diseases reviewed in this book, include bacterial and gumming diseases, leaf mold, and ratoon stunting. New diseases under review include false red stripe and bacterial spindle rot disease. Contributors also examine diagnosis and diversity studies, host/parasite interaction, nematode diseases and management.

TRANSGENIC CROP PROTECTION

Concepts and Strategies

O. Koul and G.S. Dhaliwal (eds.)

978-1-57808-302-2; 2004; 434 pages, hc; \$ 109.20

Besides providing an overview of the development of transgenic crops and their role in plant protection, the book outlines the status on the research in transgenic crops expressing Bt proteins, insect-resistant transgenic crops, genetically modified herbicide-tolerant crops, transgenic rice for disease resistance, and resistance management strategies for Bt corn in the US.

"Provides an up-to-date discussion of most of the scientific and sociological issues associated with transgenic crops. It is most suitable for scientific audiences."

— CHOICE, February 2005,
Vol. 42, No. 6

New Book Proposals

Send your proposal to editor@scipub.net

*No Rights Europe***VIROIDS**

Editors:

Ahmed Hadidi: USDA, ARS, Beltsville, Maryland, USA*Ricardo Flores*: Universidad Politécnica de Valencia, Valencia, Spain*John W. Randles*: University of Adelaide, Glen Osmond, Australia*Joseph S. Semancik*: University of California, Riverside, California, USA

978-1-57808-272-8; 2003; 392 pages, hc; \$ 121.00

Viroids presents indispensable, comprehensive and up-to-date information pertinent to viroids, viroid diseases, and their control. It provides a single source of information on the economic impact of viroid diseases, properties of viroids, methods for viroid detection and control, diseases of viroids in different plant species, mapping of the geographical distribution and epidemiology of viroids, diseases of possible viroid etiology, and considerations for future applications of viroids. This book also covers plant quarantine and certification programs for viroid diseases.

FUNGAL PROTOPLAST**A Biotechnological Tool***D. Lalithakumari*

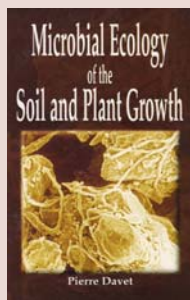
978-1-57808-093-9; 2000; 198 pages, pb; \$ 55.40

A detailed collection of the results obtained during the long history of the fungal protoplast work that has been published for different species.

The overview is supplemented with research into the improvement of biocontrol agents, carried out by the authors. Besides providing an overview of the literature, the book also acquaints one to practical conditions to carry out the work.

"... a small book tightly packed with an enormous amount of information."

— **CHOICE**, July 2001,
Vol. 38, No. 11

**MICROBIAL ECOLOGY OF SOIL AND PLANT GROWTH***Pierre Davet*: INRA, Versailles, France

978-1-57808-303-9; 2004; 392 pages; pb; \$ 61.60

"For students and professionals in biology or agriculture, (the author) highlights some of interactions between soil microbes and plants, most of which are the result of complex equilibria between the partners."

— **SciTech Book News**,
March 2005

CHROMOSOME BOTANY*A. Sharma and S. Sen*

978-1-57808-183-7; 2002; 168 pages + 5 color plates, 180 × 240 mm, pb; \$ 54.90

The book covers both the basics of plant chromosomes as well as advances such as molecular characteristics, to give the reader an understanding of the chromosome as vehicle of hereditary transmission.

CONTENTS: Chromosome structure: Physical, chemical and molecular nature of fibrils, replicons, euchromatin, heterochromatin, genes with subdivisions, nucleosome, centromere, telomeres, nucleolar organizing regions, repeat DNA sequences and transposons; Cell cycle, mitosis, and meiosis; Karotype concept; Chromosomal changes and biodiversity; Chromosome evolution of different plant groups; Chromosomes and organ differentiation; Chromosomes and differentiation of sex; Nuclear DNA and plant evolution; Identification of finer segments and gene sequences in chromosomes: Banding pattern; In situ molecular hybridization; Chromosomes as affected by physical and chemical agents in the environment bioindicators; Future scope

POLLEN AND SPORES**Their Applications with Special Emphasis on Aerobiology and Allergy***S.N. Agashe*: Prof Emeritus in Botany, Bangalore University, India*Eric Caulton*: Director, Scottish Centre for Pollen Studies, Edinburgh, Scotland, UK

978-1-57808-532-3; January 2009; 412 pages, hc; \$ 109.00

Palynology finds applications in various fields. Some of them are taxonomy, plant evolution, plant breeding programmes, biotechnology, microbiology of water, soil and air, the pharmaceutical industry, cosmetic industry, energy food industry, forensic science, aerobiology, allergy, epidemiology, meteorology, fossil fuel exploration and biodiversity. Published literature on the above aspects is widely scattered.

A PDF version of this catalog is also available on our website (www.scipub.net)

EMBRYOLOGY OF FLOWERING PLANTS: Terminology and Concepts

T.B. Batygina (ed.): Komarov Botanical Institute, St. Petersburg, Russia

Generative Organs of Flower

978-1-57808-188-2; 2002; 439 pages, hc; \$ 143.40

It summarizes the classical and current concepts about flower generative organs, their structure and development, and about seed formation processes. The book contains ample material that can be employed in theoretical generalizations, in analyzing the distribution of features (or their uniqueness) and evolutionary transformations of structures.

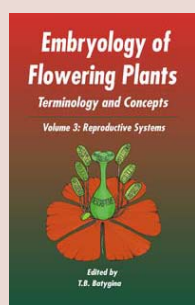
The Seed

978-1-57808-263-6; 2005; 786 pages, hc; \$ 168.00

This book deals with plant processes now controllable by plant breeders due to new hypotheses, data, technologies, and methods. Concepts covered include critical periods of embryo development and seed genetic heterogeneity.

"Any one interested in seeds at any point from double fertilization to germination will find much useful, new, and interesting information in this volume."

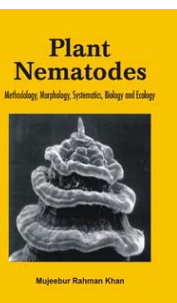
— The Quarterly Review of Biology, Vol. 81, No. 3, September 2006

**Reproductive Systems**

978-1-57808-265-0; March 2009; 598 pages, hc; \$ 139.00

PART ONE - PLANT REPRODUCTION OVERVIEW / Reproductive Biology; Ecological Embryology; Reproduction, Propagation and Renewal; Viviparity; Metamorphosis; Life Cycles—**PART TWO-POLLINATION AND BREEDING POLLINATION SYSTEMS** / Anthecology; Sexual Polymorphism; Monoecy; Gynodioecy; Heterostyly; Dichogamy; Population Aspects of Sex Determination; Modes of Pollen Transfer and Pollinating Agents; Chasmogamy; Cleistogamy; Specific Features of Cleistogamy in Annual Species of Medicago L. (Fabaceae); The Evolution of Wind Pollination—**BREEDING SYSTEMS** / Autogamy; Allogamy; Pollen-Ovule Ratios in Different Breeding Systems; Stigmatic and Ovular Receptivity-Facts and Hypotheses; Pollination Failure in Natural Populations: Implications for the Conservation of Rare Plants; Significance of Hybridization in the Higher Plant Evolution—**PART THREE - SEED PROPAGATION AMPHIMIXIS AND APOMIXIS** / Amphimixis; Apomixis; Apospory; Diplospory; Parthenogenesis; Apogamy; Classification of Apomixis; Embryo-Endosperm Interrelations in Apomixis; Ultrastructural Aspects of the Apomixis; Space and Time Organization of Megaspore- and Megagametophytogenesis in Amphimictic and Apomictic Plants; Experimental Induction of

Apomixis *in vivo* and *in vitro*; Applied Aspects of Gametophytic Apomixis; Alchemilla L. (Rosaceae) is a Classical Object for Studying Facultative Apomixis; The Problem of Evolutionary Significance of Apomixis; The Evolution of Gametophytic Apomixis—**SEED PROPAGATION** / Seed and Seed Propagation; Reproductive Effort; Reproductive Success; Potential Seed Productivity; Real Seed Productivity; Seed Productivity in Symphytum L. (Boraginaceae); Seed Productivity in Apomixis; Aberrant Ovules and Seeds: Structure and Diagnostics Heterospermy; Seed Bank; Fruit; Heterocarpy—**PART FOUR-VEGETATIVE PROPAGATION** / Vegetative Propagation; Sarmentation; Particulation; Bud; Brood Bud; Bulb; Bulblet and Bulbil; Protocorm; Embryoidogeny is a New Type of Vegetative Propagation; Phytomer Conception and the Higher Plant Evolution—**PART FIVE-MOLECULAR-GENETIC ASPECTS OF REPRODUCTION** / Flower Development Genetics; Genetic Analysis of Ovule Development; Gametophytic Mutations; Modifiable Variability of Gametophyte; Plant Embryogenetics; Genetic Control of Apomixis; Genetic Heterogeneity of Seeds. Polyembryony—**PART SIX-POPULATION AND ECOLOGICAL ASPECTS OF REPRODUCTION** / Phytocenosis; Ecological niche; Population; Life form; Diaspore; Population and Coenotic Regulation of Reproduction; Population and Coenotic Aspects of the Research of the Plant Reproduction in Arctic Conditions; Multiplicity of Vegetative Propagation and Expansion in the Ranunculaceae; Ontogenesis in Ferula L. (Apiaceae)—**PART SEVEN-EMBRYOLOGICAL BASES OF REPRODUCTIVE STRATEGIES** / Adaptive Possibilities and Reproductive Strategy in Trapaceae; Reproductive Strategy in Ceratophyllaceae; Reproductive Strategy in Nelumbonaceae; Seed Propagation and Vegetative Propagation in Vaccinium myrtillus L. (Ericaceae); Reproductive Strategy in Viviparous Plants; Reproductive Strategy of Orchids in Temperate Zone; Problems and Perspectives of In Vitro Seed Propagation in Orchids of Temperate Zone; Action of Herbicides and Other Factors on Embryogenesis of Striga hermonthica (Scrophulariaceae); Effects of Environmental Pollution on Plant Reproduction

**PLANT NEMATODES****Methodology, Morphology, Systematics, Biology and Ecology**

M.R. Khan

978-1-57808-533-0; 2008; 378 pages, hc; \$ 69.00 [ebook 978-1-57808-629-0]

Covers fundamental and advanced aspects of nematology for graduate students.

INTRODUCTION: Introduction to Plant Nematology; History of Plant Nematology; Agricultural Importance of Plant Nematodes
METHODOLOGY: Sampling for Nematode Assay; Storage of Samples; Extraction of Nematodes from Soil; Extraction of Nematodes from Plant Tissue; Extraction of Sedentary Nematodes and Eggs; Extraction of Entomopathogenic Nematodes from Soil; Processing of Nematodes; Preparation of Enface View, Perineal Pattern and Vulval Cone; Staining of Nematodes in Plant Tissue; Electron Microscopy of Nematodes; Biochemical and Molecular Techniques; Gel Electrophoresis
MORPHOLOGY OF NEMATODES: General Structure of Nematodes; Cuticular Markings; Head; Tail
SYSTEMATICS AND CLASSIFICATION OF NEMATODES; BIOLOGY OF NEMATODES: Egg Development; Reproduction; Digestive System; Excretory System; Nervous System and Sensory Structures; Nematode Physiology
FEEDING AND TROPHIC RELATIONSHIP OF NEMATODES: Feeding and Feeding Behaviour; Mode of Parasitism; Host Parasite Relationship
ECOLOGY OF NEMATODES: Population Dynamics of Plant Nematodes; Interaction of Nematodes with other Organisms

The author has succeeded in assembling a wide range of materials and organizing them appropriately to aid teaching this subject from various perspectives in courses for undergraduates and graduate students.

— CHOICE, July 2009, Vol. 46, No. 11

POLLEN BIOLOGY AND BIOTECHNOLOGY

K.R. Shivanna

978-1-57808-241-4; 2003; 316 pages, pb;
\$ 55.40

POLLEN BIOLOGY: Pollen Development; Pollen Morphology and Aeropalynology; Pollen Viability and Vigour; *In Vitro* Pollen Germination and Pollen Tube Growth; Pollen Sterility; Pistil; Pollination; Pollen-pistil Interaction and Fertilization; Self-incompatibility; Interspecific Incompatibility / **POLLEN BIOTECHNOLOGY:** Optimization of Crop Yield; Commercial Production of Hybrid Seeds; Transfer of Useful Genes to Crop Species; Induction of Haploids from Pollen Grains; Production of Other Economic Products

"... designed for teachers and students of pollen biology courses."

— *Folia Geobotanica*, 39/2, 2004

Translated from Japanese

SILKWORM REARING ON ARTIFICIAL DIET

Yasuji Hamamura (ed.)

978-1-57808-174-5; 2001; 324 pages, hc;
\$ 98.60

The research team have studied the enigma of why silkworms feed exclusively on mulberry leaves. The book provides an account of how they solved this question, and discusses how knowledge of the plant's growth-promoting factors resulted in changing an age-old Japanese practice, to the aseptic rearing of silkworms on an artificial diet. The volume also addresses prevention of bacterial and viral diseases, and the quality of cocoons and raw silk produced in this way.

COMPREHENSIVE SERICULTURE

G. Ganga

Volume 1: Moriculture

978-1-57808-286-5; 2003; 278 pages, hc;
\$ 75.00

Moriculture deals with the cultivation of the mulberry plant for feeding the leaves to *Bombyx mori* larvae to get a harvest of quality cocoons. The morphology and taxonomy of the mulberry plant and also the major diseases and pests affecting it and the control measures taken against them are described.

Volume 2: Silkworm Rearing and Silk Reeling

978-1-57808-287-2; 2003; 418 pages, hc;
\$ 94.10

Covers the morphology, anatomy, embryology and breeding of the mulberry silkworm *Bombyx mori* and explains all the procedures from the production of silkworm eggs through rearing of the silkworm to the harvesting of the cocoons and also the post-cocoon technology of reeling to obtain raw silk. An extensive account of the major pests and diseases of silkworm and their control methods is also given.

Translated from Japanese

DEVELOPMENT PHYSIOLOGY OF SILKWORMS

S. Morohoshi

978-1-57808-150-9; 2001; 308 pages, hc;
\$ 77.30