



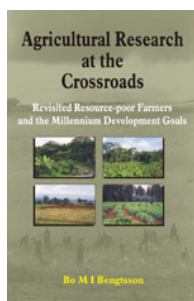
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# AGRICULTURE

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**Science Publishers**

Enfield, New Hampshire, USA



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

978-1-57808-514-9; May 2007; 350 pages, hc;  
\$ 59.50

It is necessary to integrate field data relevant to policy with a global overview with up-to-date information for synthesis into scenarios and a vision of how future research and development in agriculture can best help those who are most needy and have little access to productive resources. The overall task is a huge challenge for policy-makers and the agricultural research establishment. It is also of concern in teaching agricultural students to be able to respond to future challenges. This publication is an attempt to stimulate discussion on future options of research policy, suggesting changes of agricultural R&D for societal development in accordance with the Millennium Development Goals.

*No Rights Europe*

**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.

**MAPPING OF THE SOIL**

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

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

The author presents the methods of cartography that are applied to the soil mantle in order to understand the spatial organization of soils in the natural environment, summarize the information in a useful manner, and apply the information in a socially and economically justifiable way. He primarily addresses students in soil cartography classes, and so appends three exercises.

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

— *Soil Science Soc. of America Jrnl.*,  
August 2006

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

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

**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

CONTENTS: *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; Solar Radiation, Carbon Dioxide Profiles, and Photosynthesis in Multiple Cropping; Energy Balance and Evapotranspiration in Multiple Cropping; Conclusions  
*Agronomic Applications of Agrometeorological Studies in Multiple Cropping*: Agroclimatic Modifications 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

**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 ††

Better validation of indigenous domestic animal genetic resources is assuming greater importance in regard to the potential of livestock for poverty alleviation and income generation.

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 ††

CONTENTS: Gene Technology for Food Security Sustainable Agriculture: *W.J. Peacock*; Towards an Evergreen Revolution: Salinity Tolerance and Nitrogen Fixation: *Edward C. Cocking*; Biotechnology and Biodiversity of Plant-Microbe Interactions: *D. Werner et al.*; Engineering of a Green Manure for Sustainable Food Production and Phytoremediation: *Yoshikatsu Murooka et al.*; Development of Stress Tolerance by Manipulating the Expression of Calcium-binding Proteins: *G.K. Pandey et al.*; Analysis of Microbial Biodiversity in Pristine and Polluted Environments Using Molecular Tools: *Vigdis Torsvik et al.*; Improving Salt Resistance in Rhizobia: Physiological Role of Betaine Uptake: *L. Dupont et al.*; Algal Technology in Rice Cultivation: *B.D. Kaushik*; Unmashing the Accessible Treasures of the Hidden Unexplored Microbial World: *Anjana Singh et al.*; Genetic Transformation in Wheat: *H.S. Chawla*; Making Nitrogen Available in Forests: *Warwick B. Silvester and David R. Benson*; Construction of Aluminum (Al) Stress-Resistant Transgenic Arabidopsis Plant Using Al-induced Genes: *B. Ezaki et al.*; Witches Broom Disease of Lime (WBDL): *J.M. Bove and Monique Garnier*; Centromeres and Other Pre-Requisites for Plant Artificial Chromosomes (PLAC): *Rogier ten Hoopen et al.*

## FUNDAMENTALS OF MODERN AGRICULTURE

*P. Prévost and P. Le Glor*

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.

*No Rights Europe*

## 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 simulator (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 definitions of variables. The book is meant for those interested in using models as a tool to address questions related to crop production and especially environmental variables and genotype characteristics.

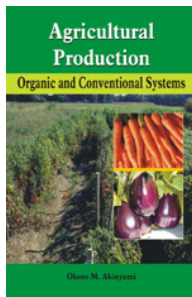
## MANAGEMENT OF AGRICULTURAL DROUGHT Agronomic and Genetic Options

*N.P. Saxena (ed.):* ICRISAT, Patancheru, India

978-1-57808-191-2; 2003; 222 pages, hc; \$ 77.30

This book, consisting of 13 chapters, takes a holistic approach to the understanding of, and suggest options for, alleviation of the problem of agricultural drought, beginning from a socio-economic perspective and then progressing to agronomic and genetic management options. Progress made in some legume crops (groundnut, chickpea,

pigeon pea, lentil and faba bean) has been documented. Some of the questions that remain to be addressed and deserve emphasis as future research areas are given.



NEW

## AGRICULTURAL PRODUCTION Organic & Conventional Systems

*O.M. Akinyemi*

978-1-57808-512-5; July 2007; 240 pages, hc; \$ 64.40

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.

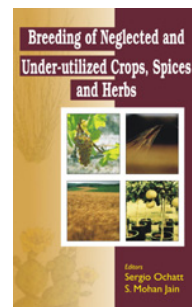
It reviews environmental factors influencing the growth, development, and production of food crops grown under various conditions.

## 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. Evolution is treated holistically, using all available approaches, including comparative morphology, genome analysis, cyto- and chemotaxonomy, and molecular analysis employing recombinant DNA technology. Adaptation is traced for crop traits preferred by consumer demand and agro-ecological requirements.



NEW

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

Editors:

*Sergio Ochatt:* INRA, Dijon, Cedex, France

*S.M. Jain:* University of Helsinki, Helsinki, Finland

978-1-57808-509-5; June 2007; 468 pages, hc; \$ 122.60

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.

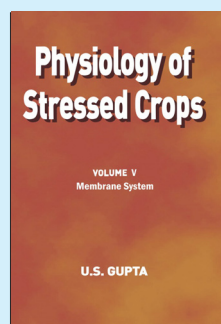
**PHYSIOLOGY OF STRESSED CROPS**

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. Coverage encompasses environmental, mechanical, and biological stress. Hormones discussed include cytokinin, gibberellins, auxins, polyamines, and growth regulators used for improvement work, such as mefludide, uniconazole, and ethiphon. Information is international in scope, and caters to the needs of crop physiologists, agronomists, ecologists, soil scientists, and crop breeders.

**Nutrient Relations**

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

This book, intended for crop physiologists, agronomists, soil scientists, ecologists, geneticists, crop breeders, molecular biologists, and teachers and students majoring in crop stress physiology, is composed of 13 chapters dealing with nutrient stress in crops, including both deficiency and toxicity. The effects of stress factors such as soil acidity, soil salinity, allelochemicals, soil compaction, drought, waterlogging, atmospheric humidity, low and high temperature, solar radiation and air pollution on nutrient availability, uptake, transport, utilization, crop growth and fructification are discussed in the chapters.

**The Stress of Allelochemicals**

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

This book, intended for crop stress physiologists, agronomists, weed scientists, soil scientists, phytochemists and practical crop growers and managers, is composed of 9 chapters covering the 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**

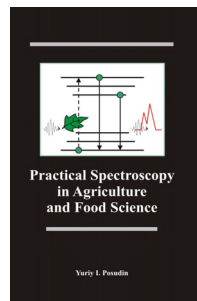
978-1-57808-440-1; 2006; 244 pages, hc; \$ 94.10 ††

To cope with the abiotic stress-induced osmotic problems, plants adapt by either increasing uptake of inorganic ions from the external solution, or by *de novo* synthesis of organic compatible solutes acting as osmolytes. Of the osmoregulators 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. There are several pieces of encouraging research discussed in this volume showing significant improvement in stress tolerance and in turn productivity by involving genetic engineering techniques.

**Membrane System**

978-1-57808-521-7; October 2007; 418 pages, hc; \$ 99.50 ††

Though plant cells are separated by cell walls, cells maintain their identity as they are delimited by semi-permeable membranes that permit them to function as autonomous units. The flow of materials in and out of the cell is regulated by channels, transporters, pumps, and aquaporins in these membranes. The cytoplasm is sandwiched between two membranes: the plasma membrane, which forms the outer boundary of the cytoplasm, and the tonoplast or the vacuolar membrane which forms the inner boundary. Cell membranes serve several different functions: form boundaries and provide compartmentalization, site of chemical reactions catalyzed by membrane proteins, regulate the exchange of ions/compounds across the barrier, site of perception/transmission of signals (hormones), and act in cell-to-cell communication. 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. This book will be useful to advanced students, teachers and researchers interested in crop stress physiology, especially in understanding, planning and execution of further research.



## PRACTICAL SPECTROSCOPY IN AGRICULTURE AND FOOD SCIENCE

*Yuriy Posudin*: National Agricultural  
University, Kiev, Ukraine

978-1-57808-505-7; March 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

## AGROSPHERE Nutrient Dynamics, Ecology, and Productivity

*K.R. Krishna*

978-1-57808-275-9; 2003; 354 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.

## 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

The integrated, efficient use of nutrients is one of the key issues for sustainable resource management in irrigated rice in Asia, one of the most intensive agricultural systems in the world. This book summarizes research conducted from 1994 to 2001 to develop and evaluate a new concept for site-specific nutrient management and the tools needed for applying it in farmers' fields with irrigated rice.

## SOIL FERTILITY AND CROP PRODUCTION

*K.R. Krishna*

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

CONTENTS: Historical aspects of soil fertility and crop production research; Soil geography and sustainability of cultivation; Soil mineral deficiency, nutrient acquisition, and crop production; Nitrogen in soil: Transformations and influence on crop productivity; Soil phosphorus, its transformations and their relevance to crop production; Potassium in soil and its influence on crop growth and yield; Secondary nutrients in soil and their influence on crop productivity; Micronutrients in soil, their acquisition mechanisms and influence on crop growth and yield; Soil organic matter in temperate arable land and its relationship to soil fertility and crop production; Available soil nutrients and fertilizer use in relation to crop production in the Mediterranean area; Maximizing soil fertility utilization for higher crop yield: Modeling; Fertilizers for improved soil fertility and crop production; Biofertilizers to augment soil fertility and crop production; The use of stable isotopes in soil fertility research; Crop improvement towards resistance to soil fertility constraints; Soil fertility and plant diagnostic norms for horticultural crop production; Nutrient dynamics in agro-environments; Application of remote sensing in agriculture and soil science

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## IN VITRO APPLICATION IN CROP IMPROVEMENT

A. Mujib: Hamdard Univ., Delhi, India  
 Myeong Je Cho: University of California, Berkeley, USA  
 Stefano Predieri: Istituto 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.

## 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.

## 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

## AGROBIOTECHNOLOGY AND PLANT TISSUE CULTURE

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

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

Information on plant biotechnology is provided for students and researchers in agriculture and plant sciences in the 16 plenary lectures from a December 2000 conference in Singapore. Specialists from the Asia Pacific region and from Israel consider 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.

## FUNDAMENTALS OF PLANT BREEDING AND HYBRID SEED PRODUCTION

R.L. Agrawal

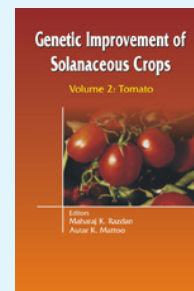
978-1-57808-029-8; 1998; 402 pages, hc; \$ 55.40

CONTENTS: *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

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## 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 ††

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 ††

Following an introduction to the history, origin, and early cultivation of the tomato, the book presents 15 survey papers that together provide an overview of the current state-of-the-art in genetic modification of the tomato. Topics covered include cytogenetics and evolution, expression of heterosis by hybridization, traditional and enhanced breeding for quality traits, genetic enhancement for nutritive value, molecular markers in selection of tomato germplasm, molecular genetics of drought resistance response in tomato and related species, applications of genetic engineering in tomato, hormonal control of fruit maturation, genetic control of fruit ripening, genetics and breeding for resistance to bacterial diseases, breeding for resistance to fungal pathogens, breeding for resistance to viral pathogens, resistance in tomato and other *Lycopersicon* species to insect and mite pests, and tolerance to abiotic stresses.

## 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

The book comes during a time of rapid expansion in molecular technology-based selection approaches that are destined to modify or supplement conventional breeding methodology. The new technologies will allow genetic and physiological factors influencing sugar yield and quality to be assessed in great detail and manipulated.

These novel techniques will also reduce the dependence of the sugar beet crop on chemical pesticides and fertilizers by using unique and improved resistance mechanisms against the various abiotic stresses and diseases and by producing varieties that use soil resources more efficiently. A whole chapter deals with the current information on the development of these new techniques and their integration into sugar beet breeding.

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

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

## BANANA IMPROVEMENT Cellular, Molecular Biology, and Induced Mutations

Editors:

*S.M. Jain:* IAEA, Vienna, Austria

*Rony Swennen:* Catholic University of Leuven, Leuven, Belgium

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

This book reports the results of a coordinated research project on the technical aspects of modifying one of the world's major food crops to improve resistance to disease and enhance other favorable characteristics. 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.

## BIOTECHNOLOGY OF MEDICINAL PLANTS

**Vitalizer and Therapeutic**

*K.G. Ramawat (ed.)*

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

In recent years, there has been a surge in the demand for plant-based drugs and food additives. The use of organic fertilizers and natural dyes is the preferred alternative. Some countries have even banned the use of synthetic colorants and flavors from use for human consumption.

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.

## 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...."

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

## 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.

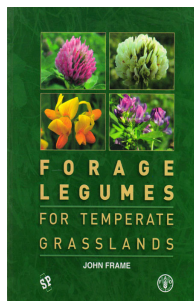
## MONOGRAPH OF GENUS *ORYZA*

*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.

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## FORAGE LEGUMES FOR TEMPERATE GRASSLANDS

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

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

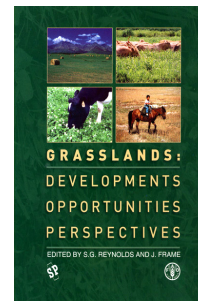
Published in association with the Food and Agriculture Organization of the United Nations, this volume presents information relevant to practical applications of forage legumes. Given a new appreciation of the plants' role in temperate grasslands and the benefits of a legume rich diet, the author discusses 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.

"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. The author and sponsors indicate that this book will be an invaluable resource for a wide audience interested in sustainable and productive agriculture; this reviewer agrees."

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



## 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. The focus is on recent technical advances and the prospects for further innovation, through twenty-one chapters by eminent grassland scientists, grouped into seven sections: forage germplasm; forage conservation; grass-based systems and organic production; climate change; biodiversity and biotechnology; geographical information systems; farmer and pastoralist participation; and regional developments. The book is timely in view of the expanding human and livestock populations, especially in arid and semiarid environments, with the consequent pressure on the world's grasslands.

"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



## SAFFRON (*CROCUS SATIVUS*)

### Production and Processing

Editors:

*M. Kafi, A. Koocheki, M.H. Rashed and M. Nassiri*: Faculty of Agriculture, Ferdowsi University of Mashhad, Iran

978-1-57808-427-2; 2006; 252 pages, hc; \$ 66.60

Saffron is a precious spice which is mainly grown in Iran, India, Spain, Greece, Italy, Pakistan, Morocco, and Central Asian countries. Until recently, saffron was perceived only for its value as a spice. However, with recent research findings pointing to the medicinal properties of saffron such as its antimicrobial, anticarcinogenic and antioxidant effects, interest in this plant has increased.

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, M.H. Rashed Mohassel, A. Koocheki and M. Nassiri (eds.)*: Faculty of Agriculture, 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.

## A HANDBOOK OF RICE SEEDBORNE FUNGI

*T.W. Mew and P. Gonzales (eds.)*: International Rice Research Institute, Los Banós, 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. The information can be used for teaching and for reference in conducting seed health testing in different laboratories, in conjunction with a reference to local conditions.

## FOOD TECHNOLOGY AND QUALITY EVALUATION

Editors:

*Ramdane Dris*: University of Helsinki, Finland  
*Arun Sharma*: Food Technology Division, BARC, Mumbai, India

978-1-57808-235-3; 2003; 286 pages, hc; \$ 105.30

††

This volume is based on the presentation of a workshop held in Babtai, Kaunas, Lithuania in June, 2001. It contains a number of articles with valuable information on the application of recent techniques and the development of methodologies. The impact of environmental factors on food crop quality, including handling parameters, quality evaluation, CA and MAP storage conditions worldwide, are also addressed. 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. This book should interest researchers and the lay readers.

## DEHYDRATION OF PRODUCTS OF BIOLOGICAL ORIGIN

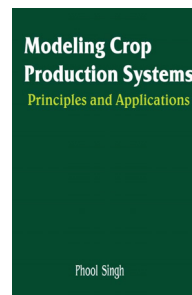
*A.S. Mujumdar (ed.)*: National University of Singapore, Singapore

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.



## MODELING CROP PRODUCTION SYSTEMS Principles and Application

*Phool Singh*

978-1-57808-418-0; November 2007; 510 pages, pb; \$ 59.50

The use of simulation models is a necessity and also an aid in the decision-making process in sustainable agricultural systems. Organizing the experimental knowledge of crop production systems without the book keeping and deductive methods of mathematics, is very difficult. This book aims to guide readers in the process by which the properties of the systems can be grasped in the framework of mathematical structure with minimal mathematical prerequisites.

The objective of this book is to help the undergraduate, graduate and post-graduate students in the disciplines of agronomy, plant breeding, agricultural meteorology, crop physiology, agricultural economics, entomology, plant pathology, soil science and ecology (environmental science). This book may also be useful for administrators in various agricultural universities in order to direct research, extension and teaching activities. Planners at national and state levels may also benefit from this book.

## 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

## CITRUS

### Production, Post Harvest, Disease and Pest Management

S. Mukhopadhyay

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

††

Various aspects of production, postharvest technology, disease and pest management of citrus have been included thereby providing the reader an integrated approach. The book covers citrus taxonomy, genetic-diversities of its members, varieties of rootstocks and scions of commercial significance, modern production, postharvest and protection technologies.

The book will serve as a foundation text for all categories of workers dealing with citrus, including students, researchers, teachers, nurserymen, orchardists and horticulturists.

## POSTHARVEST TECHNOLOGY Cereals, Pulses, Fruits, and Vegetables

A. Chakraverty: Indian Institute of Technology, Kharagpur, India

R. Paul Singh: University of California, Davis, California, USA

978-1-57808-168-4; 2001; 372 pages, pb; \$ 66.10

An introductory text for students, professionals, and others engaged in Agricultural Engineering, and Food Science and Technology in primary processing of cereals, pulses, fruits, and vegetables.

CONTENTS: *Grain-properties, Drying, and Dryers*: Properties of Grains; Psychrometry; Theory of Grain Drying; Methods of Grain Drying; Grain Dryers; Selection, Design, Specifications, and Testing of Grain Dryers / *Grain Storage*: Food Grain Storage / *Parboiling*: Parboiling of Grain; Parboiling of Wheat / *Milling*: General Grain Milling Operations; Hydrothermal Treatment/Conditioning of Cereal Grains; Rice Milling; Milling of Corn, Wheat-Barley, Rye, Oats, Sorghum, and Pulses / *By-products/ Biomass Utilization*: Rice Bran; Utilization of Rice Bran; Biomass-Conversion Management; Postharvest Management of Fruits and Vegetables

## CROP MANAGEMENT AND POSTHARVEST HANDLING OF HORTICULTURAL PRODUCTS

Ramdane Dris and Raina 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

††

This volume examines the influence of postharvest practices on the quality of horticultural commodities, in order to enhance preservation of fresh fruits and vegetables (including root and tuber crops) grown under different climatic conditions, worldwide.

### Crop Fertilization, Nutrition and Growth

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

††

The book reviews the factors affecting plant mineral nutrition and growth. It highlights the importance of fertilizers and mineral nutrition for improved agricultural production, yield, and amelioration of soil fertility. This book also addresses issues such as growth, production, yields, and quality, which can be limited by sub-optimal conditions such as soil, salinity, poor drainage, water supply, fertilization programs, physical conditions affecting root growth, and function or handling operations.

### Disease and Disorder of Fruits and Vegetables

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

††

Scientists can do little as yet about disorders and diseases of fruits and vegetables, but their research can help producers manage their crops carefully before and after harvest. Includes contributions from Europe, South American and the US. The research findings focus on such issues as applying antagonistic microorganisms before harvest controlling disorders in apples and pears, assessing the influence of calcium on tip burn, controlling fungal organisms on citrus fruits, grapes, and strawberries, and reducing chilling injuries on citrus fruits.

**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

**DRYING TECHNOLOGY IN  
AGRICULTURE AND FOOD  
SCIENCES**

*Arun 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 Sokhansanj*; 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*

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**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.

**PRINCIPLES OF WEED  
SCIENCE (2/e)**

*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

"The style of presentation is direct and simple. Students, teachers, researchers, extension personnel, and others interested in weed science will find it a very useful reference cum textbook."

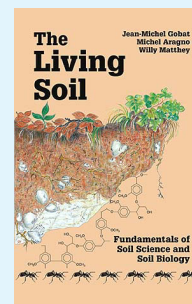
— **Weed Technology**, Vol. 14, No. 4

**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



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

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

978-1-57808-210-0; 2004; 602 pages, pb;  
\$ 65.00

The book outlines theoretical principles of techniques of molecular biology in 57 short profiles written by researchers from France. Profiles detail the definition of genomes, vectors and cloning, the labeling of nucleic acids and hybridization, DNA libraries and screening, the characterization of a gene, the genetic transformation of eukaryotes, the analysis of gene function, and the polymorphism of a genome. This edition — a translation of a French text published in French in 2003 — features new illustrations and includes recent techniques of genomic studies.

"An excellent book for anyone interested in the living soil. Summing Up: Highly recommended. Lower-division undergraduates through professionals."

— **CHOICE**, Science & Technology,  
April 2005, Vol. 4, No. 8

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**www.scipub.net**

## MICROBIAL BIOTECHNOLOGY IN AGRICULTURE AND AQUACULTURE

R.C. Ray (ed.)

### Volume 1

978-1-57808-367-1; 2005; 506 pages, hc;  
\$ 109.20 ††

Uses of microbial biotechnology in agriculture range from fertilizers to pest control, nitrogen fixation, lignocellulose degradation, biomass and biofuel production, and genetic engineering. The uses in aquaculture are just as varied. The book studies the diversity of uses, 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 ††

Plant genetic engineering has revolutionized our ability to produce genetically improved plant varieties. A large portion of our major crops have undergone genetic improvement through the use of recombinant DNA techniques in which microorganisms play a vital role. The cross-kingdom transfer of genes to incorporate novel phenotypes into plants has utilized microbes at every step—from cloning and characterization of a gene to the production of a genetically engineered plant. This book covers the important aspects of Microbial Biotechnology in Agriculture and Aquaculture with an aim to improve crop yield.

## 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

### Volume 1

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

The application of microbial biotechnology to horticulture is of great importance, because it 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 N<sub>2</sub>-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 2

978-1-57808-517-0; October 2007; c.350 pages, hc; \$ 85.00 ††

Plant genetic engineering has revolutionized our ability to produce genetically improved plant varieties. Large proportions of our major crops have undergone genetic improvement through the use of recombinant DNA technology, and micro-organisms play an important role in this development. The book focuses on genetic engineering of plants for horticulture.

### Volume 3

978-1-57808-520-0; January 2008; c.350 pages, hc; \$ 85.00 ††

The application of microbial biotechnology to horticulture is of great importance, because it 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 N<sub>2</sub>-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.

*Translated from French*

## DISEASES OF TROPICAL TREE CROPS

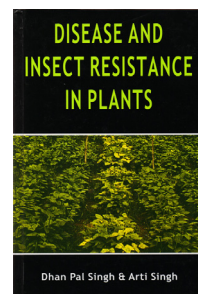
Scientific Editor

*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

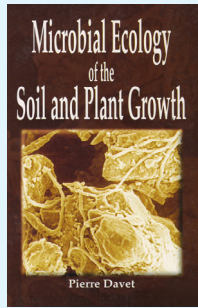


## DISEASE AND INSECT RESISTANCE IN PLANTS

*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.



**MICROBIAL ECOLOGY OF SOIL AND PLANT GROWTH**

*Pierre Davet*: Institut National de la Recherche Agronomique, Versailles, France

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

"Good plant development, healthy cultures, and the production of food resources depend for many reasons on the quality of soil microbial life, says Davet (author). For students and professionals in biology or agriculture, he highlights some of interactions between soil microbes and plants, most of which are the result of complex equilibria between the partners. He considers in turn the soil medium, the effects of microorganisms, and possibilities of intervention. The original *vie microbienne du sol et production végétale* was published by INRA in 1996, and was updated for the 2001 English edition."

— **SciTech Book News**,  
March 2005

**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.

CONTENTS: Introduction; Soil, the Natural Medium for Plant Growth; Soil Microorganisms; The Rhizosphere and the Phyllosphere; Nitrogen Fixation in Free-living and Associative Symbiotic Bacteria; Nitrogen Fixation by Free-living Blue-Green Algae; Nitrogen Fixation by Symbiotic Blue-Green Algae; *Rhizobium* and Legume Root Nodulation; Actinorhizal Plants (*Frankia*-Induced Nodulation); Organic Matter Decomposition; Nitrification and Denitrification; Microbial Products Influencing Plant Growth; Sulphur, Phosphorus, and Trace Element Nutrition; Biodegradation of Pesticides and Pollutants; Mycorrhizae; Biotechnology in Agriculture

**TRANSGENIC CROP PROTECTION**

**Concepts and Strategies**

*Opendar 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. A final chapter looks at ecological, economic, and social aspects of transgenic crop protection in the developing world.

"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

**PLANT DISEASE MANAGEMENT**

*R.S. Singh*

978-1-57808-160-8; 2001; 246 pages; pb; \$ 44.20

The book is a comprehensive introduction to different aspects of plant disease management. It extensively covers the areas of cultural practices, biological means, host resistance, chemicals and non-conventional approaches to the management of plant diseases.

CONTENTS: Introduction; General Principles of Disease Management; Cultural Practices for Plant Disease Management; Biological Control in Disease Management; Management of the Host; Use of Chemicals in Plant Disease Management; The Strategies of Crop Health Management; *Bibliography*

"...information-rich text that will, no doubt, be valued by students and researchers throughout the world."

— **Biological, Agriculture and Horticulture**, 2002, Vol. 19

"A useful resource for upper-division undergraduate and graduate students in plant pathology...."

— **CHOICE**, Sept. 2001,  
Vol. 39, No. 01

**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.

## 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 ††

The cotton bollworms/legume pod borers, *Heliothis/Helicoverpa*, are the most serious constraints in crop production worldwide. They effect the production of economically important crops such as cotton, maize, chickpea, pigeonpea, and a range of oilseed, vegetable, and fruit crops. Over time, these pests have developed strong resistance to commonly used insecticides, making it difficult to control them.

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.

## 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.

*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

This volume describes all aspects of mulberry cultivation up to harvesting and storing of leaves for feeding silkworms.

The book explores the plant's morphology and taxonomy, the requirements for establishing mulberry plantations, propagation methods, irrigation and drainage, meeting nutritive requirements, harvesting and preserving and diseases and pests.

### Volume 2: Silkworm Rearing and Silk Reeling

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

This volume 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

## New Book Proposals

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