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***Cytoplasmic
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Based on the third

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symposium on "Molecular
Immunology of Complex
Carbohydrates," this text
covers the latest in
glycotopes, structures and
functions of complex
carbohydrates, recognition

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factors of lectins,
biomolecular interactions
and other glycosciences.
This volume highlights the
informative events of the
Symposium on Molecular
Immunology of Complex

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Carbohydrates III, held at the
Institute of Biological
Chemistry, Academia Sinica,
on July 15-20, 2007, in
Taipei, Taiwan.

Crop growth and production
is dependent on various

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climatic factors. Both abiotic and biotic stresses have become an integral part of plant growth and development. There are several factors involved in plant stress mechanism. The

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information in the area of plant growth and molecular mechanism against abiotic and biotic stresses is scattered. The up-to-date information with cited references is provided in this

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book in an organized way. More emphasis has been given to elaborate the injury and tolerance mechanisms and growth behavior in plants against abiotic and biotic stresses. This book

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also deals with abiotic and biotic stress tolerance in plants, molecular mechanism of stress resistance of photosynthetic machinery, stress tolerance in plants: special reference

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to salt stress - a biochemical
and physiological adaptation
of some Indian halophytes,
PSII fluorescence techniques
for measurement of drought
and high temperature stress
signal in crop plants:

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protocols and applications,
salicylic acid: role in plant
physiology & stress
tolerance, salinity induced
genes and molecular basis of
salt tolerance mechanism in
mangroves, reproductive

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stage abiotic stress
tolerance in cereals,
calorimetry and Raman
spectrometry to study
response of plant to biotic
and abiotic stresses,
molecular physiology of

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osmotic stress in plants and
mechanisms, functions and
toxicity of heavy metals
stress in plants,
submergence stress
tolerance in plants and
adaptive mechanism,

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Brassinosteroid modulated stress responses under temperature stress, stress tolerant in plants: a proteomics approach, Marker-assisted breeding for stress resistance in crop plants,

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DNA methylation associated epigenetic changes in stress tolerance of plants and role of calcium-mediated CBL-CIPK network in plant mineral nutrition & abiotic stress. Each chapter has

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been laid out with introduction, up-to-date literature, possible stress mechanism, and applications. Under abiotic stress, plant produces a large quantity of free

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radicals, which have been elaborated. We hope that this book will be of greater use for the post-graduate students, researchers, physiologist and biotechnologist to sustain

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the plant growth and
development.

Edited by Jean-Claude Kader
and Michel Delseny and
supported by an
international Editorial Board,
Advances in Botanical

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Research publishes in-depth and up-to-date reviews on a wide range of topics in plant sciences. Currently in its 48th volume, the series features a wide range of reviews by recognized

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and researchers alike. *

Multidisciplinary reviews
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enjoyed a reputation for

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excellence * Contributors
internationally recognized
authorities in their
respective fields
Glycoconjugates
Composition: Structure, and
Function provides an

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excellent overview of the composition, biosynthesis, function and structure of the carbohydrate chains of glycoconjugates from higher organisms. It is recommended as a core

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reference text, providing
excellent coverage of the
glycoconjugate field.

Toxic Plant Proteins
Fundamentals of
Glycosciences
Chemical Ecology

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Nutritional, Medicinal and
Therapeutic Properties
Innate Immune Defense and
Therapeutics
Exploiting the Nutritional
Potential of an Underutilized
Legume

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Plants synthesize a wide variety of unique glycan structures which play essential roles during the life cycle of the plant.

Being omnipresent throughout the plant kingdom, ranging from simple green algae to

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modern flowering plants, glycans contribute to many diverse processes. Glycans can function as structural components in the plant cell wall, assist in the folding of nascent proteins, act as signaling molecules in plant

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defense responses or (ER) stress pathways, or serve within the energy metabolism of a plant. In most cases, glycans are attached to other macromolecules to form so-called glycoconjugates (e.g. glycoproteins,

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proteoglycans and glycolipids), but they can also be present as free entities residing in the plant cell. Next to the broad, complex set of glycans, plants also evolved an elaborate collection of

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lectins or proteins with a lectin-like domain, which can recognize and bind to endogenous (plants-own) or exogenous (foreign) glycans. Though still poorly understood in plants, the dynamic interactions between

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lectins and carbohydrate structures are suggested to be involved in gene transcription, protein folding, protein transport, cell adhesion, signaling as well as defense responses. As such, a complex and

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largely undetermined glycan-
interactome is established
inside plant cells, between
cells and their surrounding
matrix, inside the
extracellular matrix, and
even between organisms.
Studying the biological

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roles of plant glycans will enable to better understand plant development and physiology in order to fully exploit plants for food, feed and production of pharmaceutical proteins. In this Research Topic, we want

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to provide a platform for articles describing the latest research, perspectives and methodologies related to the fascinating world of plant glycobiology, with a focus on following subjects: 1.

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Identification and
characterization of plant
glycans, their biosynthetic
and degradation enzymes 2.
Characterization of plant
lectins and glycoproteins 3.
Plant glycans in the plant's
energy metabolism 4. Role of

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plant glycans in plant
defense signaling 5. Use of
plant lectins in pest
control 6. Plant lectins as
new tools in human medicine
7. Glyco-engineering in
plants
Plant lectins are

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extensively used as tools and as bioactive proteins in different areas of biomedical and biological research. The Handbook of Plant Lectins provides a comprehensive yet concise overview of the

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biochemical properties, carbohydrate-binding specificity, biological activities and applications of most of the currently known plant lectins. This handbook consists of two major sections: an

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introductory guide and a
quick reference
dictionary. Part I acquaints
the newcomer to the lectin
field with the essential
information on lectins and
their importance
to biomedicine: * what are

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lectins? * their
carbohydrate-binding
specificity * effects on
nutrition and immunology *
use in histochemistry *
application as therapeutic
agents Part II lists
approximately 200 lectin

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entries in
alphabetical order. Each
entry deals with the
lectin(s) of a particular
plant and provides, (where
known), details of: *
isolation and
characterisation; * sugar

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binding specificity; *
biological activities; *
applications; * commercial
availability; and, * a
bibliography. Useful summary
tables list lectins
according to their
specificity, thereby allowing

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the user to choose the best lectin for their application. A list of suppliers is also provided. Handbook of Plant Lectins will be of interest to biologists and biomedical researchers studying cell biology,

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cancer research,
nutrition, immunology,
pathology and physiology.
Issues in Biochemistry and
Geochemistry / 2012 Edition
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eBook that delivers timely,
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comprehensive information
about Inorganic
Biochemistry. The editors
have built Issues in
Biochemistry and
Geochemistry: 2012 Edition
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You can expect the information about Inorganic Biochemistry in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The

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companies. All of the

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content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority,

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confidence, and credibility.

More information is
available at <http://www.ScholarlyEditions.com/>.

Plants produce a huge array
of natural products
(secondary metabolites).

These compounds have

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important ecological functions, providing protection against attack by herbivores and microbes and serving as attractants for pollinators and seed-dispersing agents. They may also contribute to

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competition and invasiveness by suppressing the growth of neighboring plant species (a phenomenon known as allelopathy). Humans exploit natural products as sources of drugs, flavoring agents, fragrances and for a wide

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range of other applications. Rapid progress has been made in recent years in understanding natural product synthesis, regulation and function and the evolution of metabolic diversity. It is timely to

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bring this information together with contemporary advances in chemistry, plant biology, ecology, agronomy and human health to provide a comprehensive guide to plant-derived natural products. Plant-derived

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natural products: synthesis,
function and application
provides an informative and
accessible overview of the
different facets of the
field, ranging from an
introduction to the
different classes of natural

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products through
developments in natural
product chemistry and
biology to ecological
interactions and the
significance of plant-
derived natural products for
humans. In the final section

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of the book a series of chapters on new trends covers metabolic engineering, genome-wide approaches, the metabolic consequences of genetic modification, developments in traditional medicines and

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nutraceuticals, natural products as leads for drug discovery and novel non-food crops.

Molecular Stress Physiology of Plants

Molecular Biology of the Cell

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Plant Glycobiology – a sweet
world of lectins,
glycoproteins, glycolipids
and glycans

Plant Lectins

Advances in Botanical
Research

E3 Ubiquitin Ligases: From

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A reader friendly overview of the structure and functional relevance of natural glycosylation and its cognate proteins (lectins), this book is

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also one of the few books to cover their role in health and disease. Edited by one of the pioneering experts in the field and written by a team of renowned researchers this

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resource is a perfect
introduction for all
students in life and
medical sciences,
biochemistry, chemistry
and pharmacy. Website: WWW
.WILEY-

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VCH.DE/HOME/THE SUGAR CODE

Lectins are natural products found mainly in plants. Their properties are examined in this book. Microbes for Legume Improvement comprises 21

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chapters and provides comprehensive information on concepts of microbial technology for the improvement of legumes grown in different agro-ecosystems. The role of

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microbes including
symbiotic nitrogen fixers,
asymbiotic nitrogen fixing
bacteria (like
Azospirillum), plant
growth promoting
rhizobacteria (PGPR),

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phosphate-solubilizing
microbes, arbuscular
mycorrhizal fungi and
biocontrol agents in the
improvement of both
conventional and forage
legumes growth is

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discussed. The role of bacterial biofilms in legume-Rhizobium interactions and metal tolerant microbes in the improvement of legumes is dealt separately.

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Furthermore, recent findings on the taxonomic status of rhizobia, various signal molecules affecting symbiosis, legume-pathogen and legume-rhizobial interactions and

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proteomic analysis of legume-microbe interactions are addressed. This volume gives a broad view of legume disease management using microbes and

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presents strategies for the management of cultivated legumes. It is therefore of special interest to both academics and professionals working in the field of

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microbiology, soil
microbiology, environment
microbiology,
biotechnology and agronomy
as well as plant
protection sciences.
This book provides a

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comprehensive overview of
current knowledge in
mistletoe use from well
recognised researchers
from Argentina, England,
Greece, Korea,
Switzerland, USA and

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Germany, and will be an invaluable reference source for anyone with an interest in the wide range of applications of this plant and its therapeutic potential in cancer therap

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Plants that Fight Cancer,
Second Edition

A Handbook of
Environmental Toxicology
Essentials of Glycobiology
Tomatoes and Tomato
Products

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The Sugar Code

Lectins

This book presents in-depth insights into strategies involving plant growth-promoting rhizobacteria (PGPR), including

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***symbiotic/asymbiotic
nitrogen fixers and
associative/endophyte
bacteria, phosphate-
solubilizing microbes, as
well as arbuscular
mycorrhizal fungi and their***

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***active biomolecules in
legume production. It also
examines the latest
research findings on the
taxonomic status of
rhizobia and signal
molecules affecting***

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***rhizobia-legume symbiosis
to improve readers'
understanding of the
cultivation of legumes in
conventional and derelict
soil. The agronomically
important microflora***

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broadly discussed have offered solutions to some of the problems associated with expensive fertilizers used in many production systems. This second edition provides an

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***overview of metal toxicity
to legumes and presents
strategies for the
abatement of metal toxicity
to legumes. Aimed at
professionals,
practitioners, researchers***

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***and graduate students in
microbiology, crop
sciences, soil microbiology,
biotechnology and
environmental
microbiology, the book
focuses on the basic***

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***concepts and practical
aspects of useful soil
microbiota in legume
production.***

***The Lectins: Properties,
Functions, and Applications
in Biology and Medicine is a***

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10-chapter text that deals with the advances in research studies on the properties, functions, and applications of lectins in biology and medicine. The first two chapters consider

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the historical development, physicochemical properties, isolation, and remarkable specificity toward sugars of lectins. These topics are followed by a discussion on the molecular aspects of

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protein evolution, with a particular emphasis on lectins, which provide an excellent example of a family of homologous proteins. The following chapters explore the

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***diverse biological activities
of lectins and how these
properties are utilized for
the isolation and
characterization of
carbohydrate-containing
compounds in solution and***

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on cells. A chapter focuses on the functions of lectins in their natural milieu. This text further covers the importance of lectins in nonplant systems as exemplified by lectins that

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occur in vertebrates, slime molds, and bacteria. The last chapter highlights the nutritional significance of the occurrence of lectins in plant foods such as legumes. This book is an

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ideal source for organic chemists, protein researchers, and workers in the fields of biology and medicine.

Hayes' Principles and Methods of Toxicology has

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long been established as a reliable reference to the concepts, methodologies, and assessments integral to toxicology. The new sixth edition has been revised and updated while

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maintaining the same high standards that have made this volume a benchmark resource in the field. With new authors and new chapters that address the advances and

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***developments since the
fifth edition, the book
presents everything
toxicologists and students
need to know to
understand hazards and
mechanisms of toxicity,***

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***enabling them to better
assess risk. The book
begins with the four basic
principles of
toxicology—dose matters,
people differ, everything
transforms, and timing is***

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crucial. The contributors discuss various agents of toxicity, including foodborne, solvents, crop protection chemicals, radiation, and plant and animal toxins. They

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examine various methods for defining and measuring toxicity in a host of areas, including genetics, carcinogenicity, toxicity in major body systems, and the environment. This new

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***edition contains an
expanded glossary
reflecting significant
changes in the field. New
topics in this edition
include: The importance of
dose-response Systems***

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***toxicology Food safety The
humane use and care of
animals Neurotoxicology
The comprehensive
coverage and clear writing
style make this volume an
invaluable text for students***

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***and a one-stop reference
for professionals.***

***As food producers, plants
are constantly under attack
by insects. Over the course
of evolution, plants have
not only developed a***

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sophisticated defense apparatus but have also refined biochemical defense mechanisms to protect themselves, thereby maintaining the ecological balance. Plant-

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pest interactions induce an elaborate array of reactions involving the release of volatile compounds, effector and signaling molecules, trans-membrane proteins, and a variety of

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***enzymes and hormones.
This book offers a
comprehensive guide to the
strategies that plants
employ against insects and
other pests to ensure their
continued survival.***

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Addressing an important gap in the literature, it shares the latest findings in the field of plant-pest interactions for a broad audience. Providing an overview of the current

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***state of knowledge on plant-
pest interactions and their
role in the genetic
improvement of crops, it
offers an essential guide
for researchers and
professionals in the fields***

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***of agriculture, plant
pathology, entomology, cell
biology, molecular biology
and genetics.***

Ricebean

Protein Interactions

Induced Plant Resistance to

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Herbivory

***The Molecular Immunology
of Complex***

Carbohydrates-3

***Biorational Control of
Arthropod Pests***

Hayes' Principles and

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***Methods of Toxicology,
Sixth Edition***

BIOPROSPECTING OF PLANT
BIODIVERSITY FOR
INDUSTRIAL MOLECULES A
comprehensive collection of recent
translational research on

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bioresource utilization and
ecological sustainability
Bioprospecting of Plant
Biodiversity for Industrial
Molecules provides an up-to-date
overview of the ongoing search for
biodiverse organic compounds for

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use in pharmaceuticals, bioceuticals, agriculture, and other commercial applications. Bringing together work from a panel of international contributors, this comprehensive monograph covers natural compounds of plants,

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endophyte enzymes and their applications in industry, plant bioprospecting in cosmetics, marine bioprospecting of seaweeds, and more. Providing global perspectives on bioprospecting of plant biodiversity, the authors present

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research on enzymes, mineral micro-nutrients, biopesticides, algal biomass, and other bioactive molecules. In-depth chapters assess the health impacts and ecological sustainability of the various biomolecules and identify existing

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and possible applications ranging from ecological restoration to production of essential oils and cosmetics. Other topics include, bio-energy crops as alternative fuel resources, the role of plants in phytoremediation of industrial

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waste, and the industrial applications of endophyte enzymes. This comprehensive resource: Includes a thorough introduction to plant biodiversity and bioprospecting Will further the knowledge of application of

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different plants and improve research investigation techniques. Summarizes novel approaches for researchers in food science, microbiology, biochemistry, and biotechnology Bioprospecting of Plant Biodiversity for Industrial

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Molecules is an indispensable compendium of biological research for scientists, researchers, graduate and postgraduate students, and academics in the areas of microbiology, food biotechnology, industrial microbiology, plant

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biotechnology, and microbial biotechnology.

Many plants produce enzymes collectively known as ribosome-inactivating proteins (RIPs). RIPs catalyze the removal of an adenine residue from a conserved loop in

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the large ribosomal RNA. The adenine residue removed by this depurination is crucial for the binding of elongation factors. Ribosomes modified in this way are no longer able to carry out protein synthesis. Most RIPs exist as single

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polypeptides (Type 1 RIPs) which are largely non-toxic to mammalian cells because they are unable to enter them and thus cannot reach their ribosomal substrate. In some instances, however, the RIP forms part of a

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heterodimer where its partner polypeptide is a lectin (Type 2 RIPs). These heterodimeric RIPs are able to bind to and enter mammalian cells. Their ability to reach and modify ribosomes in target cells means these proteins

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are some of the most potently cytotoxic poisons found in nature, and are widely assumed to play a protective role as part of the host plant's defenses. RIPs are able to further damage target cells by inducing apoptosis. In addition,

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certain plants produce lectins lacking an RIP component but which are also cytotoxic. This book focuses on the structure/function and some potential applications of these toxic plant proteins.

Advances in Botanical

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Research Academic Press

In recent years the field of entomology, due in part to the penetration of other disciplines, has made rapid progress. "Recent Advances in Entomological Research: From Molecular Biology

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to Pest Management" includes 25 chapters contributed by more than 40 distinguished entomologists and introduces the latest progress in entomology, from molecular biology, insect-plant interactions and insecticide toxicology, to

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emerging technologies in pest management. Not only is the book interesting and informative, but it provides useful, innovative research advances and will serve as a valuable resource for entomologists, zoologists, botanists

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and other researchers in the field of plant protection. Tong-Xian Liu is a professor of entomology at the College of Plant Protection, Northwest A&F University, China. Le Kang is a professor of entomology at the Institute of

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Zoology, Chinese Academy of
Sciences, China.

Principles and Methods of
Toxicology, Fifth Edition
Agriculture and Toxicology
Properties, Functions, and
Applications in Biology and

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Medicine

Microbes for Legume Improvement
Glycoconjugates
Advances in Legume Research
Written by an international team of
authors from a range of
educational, medical and research

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establishments, this book is an essential reference for advanced students and researchers in the areas of environmental sciences, ecology, agriculture, environmental health and medicine, in addition to industry and government

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personnel responsible for environmental regulations and directives. A Handbook of Environmental Toxicology focuses on two key aspects: human disorders and ecotoxicology as affected by major toxins

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originating from biological sources and pollutants, as well as radiation generated spontaneously or as a result of anthropogenic activity. A diverse array of these potentially harmful agents regularly appear in the atmosphere, soil, water and

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food, compromising both human health and biodiversity in natural and managed ecosystems.

Sustainable Management of Arthropod Pests of Tomato provides insight into the proper and appropriate application of

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pesticides and the integration of alternative pest management methods. The basis of good crop management decisions is a better understanding of the crop ecosystem, including the pests, their natural enemies, and the crop

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itself. This book provides a global overview of the biology and management of key arthropod pests of tomatoes, including arthropod-vectored diseases. It includes information that places tomatoes in terms of global food

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production and food security, with each pest chapter including the predators and parasitoids that have specifically been found to have the greatest impact on reducing that particular pest. In-depth coverage of the development of resistance in

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tomato plants and the biotic and abiotic elicitors of resistance and detailed information about the sustainable management of tomato pests is also presented. Provides basic biological and management information for arthropod pests of

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tomato from a global perspective, encompassing all production types (field, protected, organic) Includes chapters on integrated management of tomato pests and specific aspects of tomato pest management, including within

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protected structures and in organic production Presents management systems that have been tested in the real-world by the authors of each chapter Fully illustrated throughout with line drawings and color plates that illustrate key pest

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and beneficial arthropods
associated with tomato production
around the world
Legumes crops have an
extraordinary importance for the
agriculture and the environment. In
a world urgently requiring more

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sustainable agriculture, food security and healthier diets the demand for legume crops is on the rise. The International Legume Society (<http://ils.nsseme.com>) organizes a triannual series of conferences with the goal to serve

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as a forum to discuss interdisciplinary progress on legume research. The Second International Legume Society Conference (ILS2) hosted in October 2016 at Troia, Portugal was the starting point for the

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Research Topic “ Advances in Legume Research ” in FiPS, that was also open to spontaneous submissions.

Insecticides are substances used to kill insects. They are used primarily in agriculture to control pests that

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infest crop. Nearly all insecticides have the potential to significantly alter ecosystems: many are toxic to humans and/or animals; some become concentrated as they spread along the food chain. The presence of these chemicals in

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both aquatic and terrestrial ecosystems has become an important issue globally. The book Insecticides - Agriculture and Toxicology provides information on the use of insecticides in pest management in order to enhance

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crop protection and their effects on
nontarget organisms.

Sustainable Management of
Arthropod Pests of Tomato
Plant-Pest Interactions: From
Molecular Mechanisms to Chemical
Ecology

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Insecticides

Handbook of Plant Lectins
Application and Resistance
Management

Issues in Biochemistry and
Geochemistry: 2012 Edition

The contributors to this book are

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authors of international and national standing, leaders in the field and trendsetters. The book covers emerging fields of science and important discoveries relating to tomatoes and related products. This

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*represents a one-stop shopping
of material related to tomatoes.*

*This book will be essential
reading for plant sc*

*Part II of this excellent work
covers proteoglycans and
mucins and deals with many*

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more examples of glycoprotein function. It also covers glycoproteins from four more species (slime mold, snails, fish, batracians). The content of the volume is very comprehensive in that most contributors are

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focussed on discussing, in depth, the wealth of most recent advances in their field, referring to previous reviews of older work for background information. This method effectively produces a very wide subject coverage in a

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smaller number of chapters/volumes. The volume is an important information source for all glycobiochemist researchers (senior investigators, post-doctoral fellows and graduate students), and as a good,

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*comprehensive, reference text
for scientists working in the life
sciences.*

*This Second Edition brings
readers up to date with all the
latest findings in lectin research.
Throughout this new edition,*

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*more than 200 figures and some
thirty tables help readers
visualize and understand key
concepts and processes. The
book starts with an overview of
lectin research followed by a
survey of the occurrence of*

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lectins in nature. Other areas covered include the nutritional effects of lectins and their functions in nature.

This book is for the guidance of those wishing to use stained cultures for virus studies. In this

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manual, sufficient illustrations are presented that may not be otherwise readily available to the reader and indicate the wide range of cytopathic changes. However, it has been necessary to limit the size of the pictures to

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a minimum - enough to convince the reader that the technique can be of great practical value for the recognition of many different viruses.

The Genus Viscum

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*Plant Glycobiology - A Sweet
World of Glycans, Glycoproteins,
Glycolipids, and Carbohydrate-
Binding Proteins
Glycoproteins II
Plant-derived Natural Products
Human Disorders and*

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Ecotoxicology

An increasing amount of cancer research is being directed towards the investigation of plant-derived anticancer compounds, many of which have been used in traditional herbal treatments for centuries.

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Plants that Fight Cancer is an up-to-date, extensive review of plant genera and species with documented anti-tumor and anti-leukaemic properties. Following an overview of the disease and the diverse methods of therapy and clinical

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testing, the book provides a detailed examination of the plants whose compounds are currently used in conventional cancer treatment, the species which show the greatest potential as future candidates, and other species with established

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anticancer properties. The third section explores each of more than 150 terrestrial plant genera and species, with a review of their traditional uses, mythology, botany, active ingredients, and product applications, along with photographs

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and illustrations and an analysis of expected results and risks. The text closes with a discussion of algal extracts and isolated metabolites with anticancer activity, a summary of published research for each species, and chemical structures of

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the most important compounds.

Protein interactions, which include interactions between proteins and other biomolecules, are essential to all aspects of biological processes, such as cell growth, differentiation, and apoptosis. Therefore,

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investigation and modulation of protein interactions are of significance as it not only reveals the mechanism governing cellular activity, but also leads to potential agents for the treatment of various diseases. The objective of this book

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is to highlight some of the latest approaches in the study of protein interactions, including modulation of protein interactions, development of analytical techniques, etc.

Collectively they demonstrate the importance and the possibility for

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the further investigation and modulation of protein interactions as technology is evolving.

For nearly 50 years, pest control was mostly based on broad-spectrum conventional insecticides such as organochlorines, organophosphates,

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carbamates and pyrethroids.

However, the severe adverse effects of pesticides on the environment, problems of resistance reaching crisis proportions and public protests led to stricter regulations and legislation aimed at reducing their

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use. Ways to reduce the use of synthetic pesticides in plant protection and to use more alternative and novel methods for pest control or biorational control are the challenges of pest control for the twenty-first century. The term

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biorational (biological + rational) pesticides can be defined as the use of specific and selective chemicals, often with a unique modes of action, that are compatible with natural enemies and the environment, with minimal effect on n- target

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organisms. Biorational control is based on a diversity of chemical, biological and physical approaches for controlling insect pests which results in minimum risk to man and the environment.

This book presents valuable research

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and advances in technologies related to ricebean cultivation production and utilization. Focusing on ricebean as a possible solution to the problems of nutritional insecurity and growing populations in developing countries, it provides

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comprehensive insights into its nutritional significance as an alternative food legume and discusses its utilization to prevent potential food calamities. This book is a valuable resource for food scientists and technologists,

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agricultural scientists, nutritionists
and researchers.

Recent Advances in Entomological
Research

Synthesis, Function, and
Application

Properties and Biomedical

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Applications

Plant Biochemistry

Mistletoe

Viral Cytopathology

***Basic information needed to
understand essentials of
glycobiology***

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This timely book provides an overview of the anatomical, chemical, and developmental features contributing to plant defense, with an emphasis on plant responses that are induced by wounding or

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herbivore attack. The book first introduces general concepts of direct and indirect defenses, followed by a focused review of the different resistance traits. Finally, signal perception and

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***transduction mechanism for
the activation of plant defense
responses are discussed.***

***Sugar chains (glycans) are
often attached to proteins and
lipids and have multiple roles
in the organization and***

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function of all organisms.

***"Essentials of Glycobiology"
describes their biogenesis and
function and offers a useful
gateway to the understanding
of glycans.***

Founded on the paradox that

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all things are poisons and the difference between poison and remedy is quantity, the determination of safe dosage forms the base and focus of modern toxicology. In order to make a sound determination

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***there must be a working
knowledge of the biologic
mechanisms involved and of
the methods employed to
define these mechanisms.
While the vastness of the field
and the rapid accumulation of***

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data may preclude the possibility of absorbing and retaining more than a fraction of the available information, a solid understanding of the underlying principles is essential. Extensively revised

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and updated with four new chapters and an expanded glossary, this fifth edition of the classic text, Principles and Methods of Toxicology provides comprehensive coverage in a manageable and

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accessible format. New topics include 'toxicopanomics', plant and animal poisons, information resources, and non-animal testing alternatives. Emphasizing the cornerstones of toxicology-

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***people differ, dose matters,
and things change, the book
begins with a review of the
history of toxicology and
followed by an explanation of
basic toxicological principles,
agents that cause toxicity,***

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***target organ toxicity, and
toxicological testing methods
including many of the test
protocols required to meet
regulatory needs worldwide.
The book examines each
method or procedure from the***

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standpoint of technique and interpretation of data and discusses problems and pitfalls that may be associated with each. The addition of several new authors allow for a broader and more diverse

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***treatment of the ever-changing
and expanding field of
toxicology. Maintaining the
high-quality information and
organizational framework that
made the previous editions so
successful, Principles and***

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Methods of Toxicology, Fifth Edition continues to be a valuable resource for the advanced practitioner as well as the new disciple of toxicology.

Bioprospecting of Plant

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***Biodiversity for Industrial
Molecules
Composition: Structure, and
Function
The Lectins
From Molecular Biology to
Pest Management***

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The fully revised and expanded fourth edition of Plant Biochemistry presents the latest science on the molecular mechanisms of plant life. The book not only covers the basic principles of plant biology, such

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as photosynthesis, primary and secondary metabolism, the function of phytohormones, plant genetics, and plant biotechnology, but it also addresses the various commercial applications of

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plant biochemistry. Plant biochemistry is not only an important field of basic science explaining the molecular function of a plant, but is also an applied science that is in the position to contribute to the

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*solution of agricultural and
pharmaceutical problems.
Plants are the source of
important industrial raw
material such as fat and starch
but they are also the basis for
the production of*

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pharmaceuticals. It is expected that in the future, gene technology will lead to the extensive use of plants as a means of producing sustainable raw material for industrial purposes. As such, the

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techniques and use of genetic engineering to improve crop plants and to provide sustainable raw materials for the chemical and pharmaceutical industries are described in this edition. The

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*latest research findings have
been included, and areas of
future research are identified.*

*Offers the latest research
findings in a concise and
understandable manner*

Presents plant metabolism in

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*the context of the structure and
the function of plants Includes
more than 300 two-color
diagrams and metabolic
schemes Covers the various
commercial applications of
plant biochemistry Provides*

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*extensive references to the
recent scientific literature*