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Studies of the Glucosinolate-myrosinase System in Relation to Insect Herbivory on Oilseed Rape (Brassica Napus) and in Arabidopsis Thaliana - Bo Pontoppidan - 2001

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Environmental Stress Affects the Glucosinolate-myrosinase System in Brassica Species - Craig Stanton Charron - 2003

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The Role of the Glucosinolate-myrosinase System for the Interaction of Brassicaceae with the Turnip Sawfly Athalia Rosae (L.) - Nora Verena Travers-Martin - 2007

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Food Processing and Health: a Case on the Glucosinolate - Myrosinase System in Dried Broccoli - Teresa Oliviero - 2013

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Glucosinolates: Properties, Recovery, and Applications covers all the important aspects of glucosinolates (properties, processing and recovery issues, particular applications). Starting from the metabolism, health effects and biosynthesis of glucosinolates, the book then deals with recovery, analysis and processing issues in order to reveal their potential applications. Bringing the latest advances in the field, the book also covers practical approaches and applications, giving emphasis to their diversity in plants, the debate of “good” and “bad” glucosinolates, biosynthetic pathways and metabolism, the influence of the food supply chain on decomposition and intake, sustainable sources of glucosinolates, processing and cooking effects, and more. Written by team of chemists, biochemists, food scientists and technologists, this book is a helpful resource for anyone dealing with food science, technology and new product developments in food, natural products and in health industries. Thoroughly explores the most trending topics of glucosinolates, giving emphasis on their diversity in plants Covers properties, processing, recovery issues and particular applications of glucosinolates Brings the health effects of glucosinolates, metabolomics and decomposition


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Enzymatic Characterization of Nitrile Hydratases in Relation to the Glucosinolate-myrosinase System in Brassicaceae Plants - Nethaji J. Gallage - 2006

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Structural and Functional Studies of the Myrosinase-glucosinolate System in Arabidopsis Thaliana and Brassica Napus - Erik Andreasson - 2000

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Glucosinolates - Jean-Michel Mérillon - 2017-06-29

This is the first comprehensive reference compilation on the substance class of glucosinolates. This handbook introduces the reader to the sulfur-containing glucosinolates (S-glucosides), a class of secondary metabolites of almost all plants of the order Capparales, in particular in the family Brassicaceae (e.g. broccoli and other cabbages), derived from glucose and an amino acid. The book illustrates the natural variety of glucosinolate structures, mainly derived from the precursor amino acid. Chapters describe the resulting rich bioactivity of the glucosides, for example as anti-cancer agents, insecticides, nematicides, fungicides, their potential phytotoxic effects, antimicrobial activity and their possible role in neurodegenerative diseases and human health. Different methods for the extraction, characterization, quantification and processing of the glucosinolates are introduced, and potential applications are discussed. The fate of glucosinolates during food processing is also briefly addressed. This handbook is written by leading experts and structured in different sections addressing the natural occurrence of glucosinolates, their (bio-)synthesis, bioactivity, food processing of glucosinolate-containing vegetables, health and disease-related aspects, biotechnology, and methods applied in glucosinolate-research. It is thus a rich reference source for every reader working in the field, from chemists and biotechnologists, to life scientists, pharmacists and medical scientists.

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**Glucosinolates: Regulation of Biosynthesis and Hydrolysis** - Ralph Kissen - 2021-01-11

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**Induced plant responses to microbes and insects** - Corné M. J. Pieterse - 2014-04-14

Plants are members of complex communities and interact both with antagonists and beneficial organisms. An important question in plant defense-signaling research is how plants integrate signals induced by pathogens, insect herbivores and beneficial microbes into the most appropriate adaptive response. Molecular and genomic tools are now being used to uncover the complexity of the induced defense signaling networks that have evolved during the arms races between plants and the other organisms with which they intimately interact. To understand the functioning of the complex defense signaling network in nature, molecular biologists and ecologists have joined forces to place molecular mechanisms of induced plant defenses in an ecological perspective. In this Research Topic, we aim to provide an online, open-access snapshot of the current state of the art of induced plant responses to microbes and insects, with a special focus on the translation of molecular mechanisms to ecology and vice versa.

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**Thioglucosides—Advances in Research and Application: 2012 Edition** - 2012-12-26

Thioglucosides—Advances in Research and Application: 2012 Edition is a ScholarlyBrief™ that delivers timely, authoritative, comprehensive, and specialized information about Thioglucosides in a concise format. The editors have built Thioglucosides—Advances in Research and Application: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Thioglucosides in this eBook to be deeper than authoritative, informed, and relevant. The content of Thioglucosides—Advances in Research and Application: 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the 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, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com.

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New Developments in the Biology of Chrysomelidae - Pierre Jolivet - 2021-10-25
This book summarizes what is actually known about the biology of Leaf Beetles. It is the most recent study in the field. The many and varied topics dealt with in this book cover almost all aspects of phylogeny, classification, paleontology, parasitology, biogeography, defenses, population biology, genetics and biological control as well as many other subjects. The most renowned specialists in these fields have been chosen to put together a diverse, state-of-the-art publication.

Biography of Plant-microbe Interactions - Federico Sánchez - 2006-01-01

Annual Plant Reviews, Insect-Plant Interactions - Claudia Voolkcl - 2014-05-02
This latest volume in Wiley Blackwell’s prestigious AnnualPlantReviews brings together articles that describe the biochemical, genetic, and ecological aspects of plant interactions with insect herbivores. The biochemistry section of this outstanding volume includes reviews highlighting significant findings in the area of plant signalling cascades, recognition ofherbivore-associated molecular patterns, sequestration of plant defense metabolites and perception of plant semiochemicals byinsects. Chapters in the genetics section are focused on genetics mapping of herbivore resistance traits and the analysis oftranscriptional responses in both plants and insects. The ecology section includes chapters that describe plant-insect interactions at a higher level, including multitrrophic interactions, investigations of the cost-benefit paradigm and the altitudinal-breadth hypothesis, and a re-evaluation of co-evolution int he light of recent molecular research. Written by many of the world’s leading researchers inthese subjects, and edited by Claudia Voolkcl and Georg Jander; this volume is designed for students and researchers with somebackground in plant molecular biology or ecology, who would like to learn more about recent advances or obtain a more in-depthunderstanding of this field. This volume will also be of great use and interest to a wide range of plant scientists and entomologists and is an essential purchase for universities and research establishments where biological sciences are studied and taught. To view details of volumes in Annual Plant Reviews, visit: ahref="http://www.wiley.com/go/apr" also available from Wiley: Plant Defense Dale Walters 9781405175890 Herbicides and Plant Physiology, 2nd Edn Andrew Cobb & John Reade 9781405123930

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Plant Molecular Evolution - J.J. Doyle - 2012-12-06
Plant molecular biology has produced an ever-increasing flood of data about genes and genomes. Evolutionary biology and systematics provides the context for synthesizing this information. This book brings together contributions from evolutionary biologists, systematists, developmental geneticists, biochemists, and others working on diverse aspects of plant biology whose work touches to varying degrees on plant molecular biology. It combines specific scientific articles, review articles and comments from outside people on it, which is unique in European Literature.

PhytoSfere'99 - Highlights in European Plant Biotechnology Research and Technology Transfer - G.E. de Vries - 2000-11-07
Humans face the challenge of producing enough food to meet the demands imposed by economic, biological and agricultural factors: rising population; rising income; and an expectation of higher quality food and a more diverse diet; decreasing amount of land available for food production; lowering environmental impact of agricultural practices and preserving biodiversity. Biotechnology is one of the most exciting and dynamic industries of our day. It offers us the possibility of reducing our dependence on intensive farming. Plant biotechnology is central to the search for effective, environmentally safe and economically sound alternatives to the use of chemical pesticides and the exhaustion of natural resources. Today, applied plant science has four overall goals: increased crop yield, improved crop quality, reducing production costs and reducing negative environmental impact. Biotechnology is proving its value in meeting these goals. It offers farmers higher yielding crops with lower costs of production and new outlets such as nutraceuticals and crop-based bio-factories. It offers the European economy the potential of high quality knowledge based job creation and the European consumer better quality, tastier and more nutritious food. Though there is public concern of genetic engineering, those who are close to the science understand that this is the next big frontier to be crossed. The potential and opportunities offered by plant biotechnology must not be missed. We must go forward on that basis rather than turning our backs on the science. PhytoSfere'99 provides a comprehensive overview for plant biotechnology. It combines specific scientific articles, review articles and comments from outside people on it, which is unique in European Literature.

The Response of the Myrosinase-glucosinolate System in Brassica Napus to Infection with Peronospora Parasitica - 2004
investigated within a basic and clinical research context for specific types of changes in common forms of cancer. This broad concept can now be drug will provide a cure for cancer has given way to the general view that population of cancer survivors. Since the first edition of this book was factors that could impact the prevention of cancer, the quality of life of cancer patients, and the risk of cancer recurrence in the rapidly increasing publication in 1999, the idea that there is a single gene pathway or single drug that will provide a cure for cancer has given way to the general view that dietary/environmental factors impact the progression of genetic and cellular changes in common forms of cancer. This broad concept can now be investigated within a basic and clinical research context for specific types of cancer. This book attempts to provide not only the theoretical and research basis for nutritional oncology, but will offer the medical oncologist and other members of multidisciplinary groups treating cancer patients practical information on nutrition assessment and nutritional regimens, including micronutrient and phytochemical supplementation. The editors hope that this volume will stimulate increased research, education and patient application of the principles of nutritional oncology. NEW TO THIS EDITION: * Covers hot new topics of nutrigenomics and nutrigenetics in cancer cell growth * Includes new chapters on metabolic networks in cancer cell growth, nutrigenetics and nutrigenomics * Presents substantially revised chapters on breast cancer and nutrition, prostate cancer and nutrition, and colon cancer and nutrition * Includes new illustrations throughout the text, especially in the breast cancer chapter * Includes integrated insights into the unanswered questions and clearly defined objectives of research in nutritional oncology * Offers practical guidelines for clinicians advising malnourished cancer patients and cancer survivors on diet, nutrition, and lifestyle * Provides information on the role of bioactive substances, dietary supplements, phytochemicals and botanicals in cancer prevention and treatment.

Nutritional Oncology - George L. Blackburn - 2011-05-02
Nutritional oncology is an increasingly active interdisciplinary field where cancer is investigated as both a systemic and local disease originating with the changes in the genome and progressing through a multi-step process which may be influenced, especially in the breast cancer chapter by nutritional factors that could impact the prevention of cancer, the quality of life of cancer patients, and the risk of cancer recurrence in the rapidly increasing population of cancer survivors. Since the first edition of this book was published in 1999, the idea that there is a single gene pathway or single drug that will provide a cure for cancer has given way to the general view that dietary/environmental factors impact the progression of genetic and cellular changes in common forms of cancer. This broad concept can now be investigated within a basic and clinical research context for specific types of cancer. This book attempts to provide not only the theoretical and research basis for nutritional oncology, but will offer the medical oncologist and other members of multidisciplinary groups treating cancer patients practical information on nutrition assessment and nutritional regimens, including micronutrient and phytochemical supplementation. The editors hope that this volume will stimulate increased research, education and patient application of the principles of nutritional oncology. NEW TO THIS EDITION: * Covers hot new topics of nutrigenomics and nutrigenetics in cancer cell growth * Includes new chapters on metabolic networks in cancer cell growth, nutrigenetics and nutrigenomics * Presents substantially revised chapters on breast cancer and nutrition, prostate cancer and nutrition, and colon cancer and nutrition * Includes new illustrations throughout the text, especially in the breast cancer chapter * Includes integrated insights into the unanswered questions and clearly defined objectives of research in nutritional oncology * Offers practical guidelines for clinicians advising malnourished cancer patients and cancer survivors on diet, nutrition, and lifestyle * Provides information on the role of bioactive substances, dietary supplements, phytochemicals and botanicals in cancer prevention and treatment.

Food Bioactives - Munish Puri - 2017-04-07
This book focuses on various types of bioactive compounds, including secondary metabolites, oligosaccharides, polysaccharides, flavonoids, peptides/proteins, carotenoid pigments, quinones, terpenes, and polyunsaturated fatty acids, and presents an overview of their nutraceutical activities. It covers the current status and future potential of food compounds, as well as extraction technologies for bioactives derived from plant, fungi and marine-derived bioactive agents. Finally, health-promoting effects of plant, fungi and marine-derived bioactive agents are discussed. Chapters come from top researchers in this area from around the globe. The volume caters to the needs of undergraduate and post-graduate students in the area of food biotechnology, food bioprocessing, biotechnology, food engineering, etc., and also contains information pertinent to researchers.

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Natural Product Biosynthesis by Microorganisms and Plants - David A. Hopwood - 2012
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Sulfur Metabolism in Phototrophic Organisms - Rüdiger Hell - 2008-03-19
Sulfur is one of the most versatile elements in life. This book provides, for the first time, in-depth and integrated coverage of the functions of sulfur in phototropic organisms including bacteria, plants and algae. It bridges gaps between biochemistry and cellular biology of sulfur in these organisms, and of biology and environments dominated by them. The book therefore provides a comprehensive overview of plant sulfur relations from genome to environment.

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Nutrition of the Oilseed Rape Crop - M. R. J. Holmes - 1980
The Formation, Structure and Activity of Phytochemicals - Reinhard Jetter - 2015-09-29
This text provides both review and primary research articles for a broad audience of biologists, chemists, biochemists, pharmacologists, clinicians and nutrition experts especially those interested in the biosynthesis, structure, function and/or bioactivity of plant natural products. Recurring themes include the evolution and ecology of specialized metabolites, the genetic and enzymatic mechanisms for their formation and metabolism, the systems biology study of their cell/tissue/organ context, the engineering of plant natural products, as well as various aspects of their application for human health. In addition to analysis of current research, new developments in the techniques used to study plant natural products are presented and discussed, taking a detailed look at structure elucidation and quantification, "omic" (genomic/ proteomic/ transcriptomic/ metabolomics) profiling or for microscopic localization. In short, this series combines chapters from researchers that explain and discuss current topics in the most exciting new research in phytochemistry.

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Insect-Plant Biology - Louis M. Schoonhoven - 2005-12-01
“This multidisciplinary approach will appeal to students in agricultural entomology, plant sciences, ecology, and indeed anyone interested in the principles underlying the relationships between the two largest groups of organisms on earth: plants and insects.”--BOOK JACKET.

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Bioactive Compounds in Foods - John Gilbert - 2009-01-21
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resistance. They cover chemical structures, biosynthesis, bioactivity, Inherent toxicants and processing contaminants are both non-essential, bioactive substances whose levels in foods can be difficult to control. The volume covers both types of compound for the first time, examining their beneficial as well as their undesirable effects in the human diet. Chapters have been written individually comprehensive reviews, and topics have been selected to illustrate recent scientific advances in understanding of the occurrence and mechanism of formation, exposure/risk assessment and developments in the underpinning analytical methodology. A wide range of contaminants are examined in detail, including pyrrolizidine alkaloids, glucosinolates, phytocarotins, and mycotoxins. Several process contaminants (e.g. acrylamide and furan), which are relatively new but which have a rapidly growing literature, are also covered. The book provides a practical reference for a wide range of experts: specialist toxicologists (chemists and food chemists), hygienists, government officials and anyone who needs to be aware of the main issues concerning toxicants and process contaminants infood. It will also be a valuable introduction to the subject for postgraduate students.

**Plant Natural Products** - Herwig O. Gutzeit - 2014-05-05

In contrast to existing books which either focus exclusively on the pharmacological properties of plant natural products or cover the secondary metabolism of plants as one section in general plant science book, this is the first to cover all aspects in one volume. It has all the features of a modern textbook, including color figures, questions and answers and a complimentary website. In addition, the introductory chapters provide sufficient background knowledge in the chemistry and biochemistry of plant natural products and their biotechnological applications to allow its use as a true stand-alone text for student courses.

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**Thioglucosides—Advances in Research and Application: 2012 Edition** - 2012-12-26

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**Molecular Host Plant Resistance to Pests** - S. Sadasivam - 2003-07-15

Sadasivam and Thayumanavan (both of the Center for Plant Molecular Biology, Tamil Nadu Agricultural U., India) catalogue known information regarding plant-borne chemicals that seem to be associated with pest mechanism of action.

**Molecular Host Plant Resistance to Pests** - S. Sadasivam - 2003-07-15

This 31-chapter volume provides insight into many biologically active products that promise relief from a broad spectrum of agricultural problems. Individual chapters discuss such topics as structure-function relationships for naturally occurring cyclic peptides, production of herbicidal and insecticidal metabolites by soil microorganisms, biological activities of fungal products, phenol glucosides in plant defense against herbivores, allelopathy as a model for natural herbicide actions, terpenoids as models for new agrochemicals, plant constituents as oviposition deterrents to lepidopterous insects, and pentatomid sex pheromones.

**Biologically Active Natural Products** - Horace G. Cutler - 1988

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**Introduction to Ecological Biochemistry** - J. B. Harborne - 2014-06-28

Ecological biochemistry concerns the biochemistry of interactions between animals, plants and the environment, and includes such diverse subjects as plant adaptations to soil pollutants and the effects of plant toxins on herbivores. The intriguing dependence of the Monarch butterfly on its host plants is chosen as an example of plant-animal coevolution in action. The ability to isolate trace amounts of a substance from plant tissues has led to a wealth of new research, and the fourth edition of this well-known text has consequently been extensively revised. New sections have been provided on the cost of chemical defence and on the release of predator-attracting volatiles from plants. New information has been included on cyanogenesis, the protective role of tannins in plants and the phenomenon of induced defence in plant leaves following herbivory.

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The control of diseases in crops is still largely dominated by the use of fungicides, but with the increasing incidence of fungicide resistance, plus mounting concern for the environment resulting from excessive agrochemical use, the search for alternative, reliable methods of disease control is gaining momentum. The purpose of this important book is to examine the development and exploitation (or potential for exploitation) of a range of non-chemical approaches to disease control, with a focus on the need for a greater understanding of crop ecology as the basis for effective disease control in the field. Chapters in the book, written by international experts in the subject area, include coverage of: biological control methods, host-plant resistance, the exploitation of tolerance, and the use of bacteriophages. Carefully edited by Professor Dale Walters, widely respected for his work in the area of crop protection, Disease Control in Crops is an essential reference book for plant pathologists, microbiologists, plant and agricultural scientists and crop protection specialists, including those working within, and providing consultancy to, the agrochemical industries. Libraries in all universities and research establishments where biological sciences and agriculture are studied and taught should have copies of this timely publication on their shelves.