

Dictionary Of Plant Genetics And Molecular Biology

Plant genetic resources is a rapidly expanding field of interest that is becoming increasingly important as global warming affects the patterns of world agriculture. Every country will have to consider more active breeding programmes to develop new varieties of crop plants adapted to the changing conditions. Plant genetic resources will provide the raw material for these breeding activities. This dictionary is in effect a glossary of the terms used in the field, defining words drawn from the many, diverse areas of interest that plant genetic resources involve, from plant taxonomy to molecular genetics. Over 1800 definitions are provided, all of which have been developed in consultation with experts in the field, particularly the genetic resources units of the international agricultural research centres of the Consultative Group on International Agricultural Research. IBPGR is one of these centres. Students, postgraduates and in particular the staff of national programmes in plant genetic resources will be interested in the book, as well as the libraries of connected institutions.

Online genetic testing services are increasingly being offered to consumers who are becoming exposed to, and knowledgeable about, new kinds of genetic technologies, as the launch of a 23andme genetic testing product in the UK testifies. Genetic research breakthroughs, cheek swabbing forensic pathologists and celebrities discovering their ancestral roots are littered throughout the North American, European and Australasian media landscapes. Genetic testing is now capturing the attention, and imagination, of hundreds of thousands of people who can not only buy genetic tests online, but can also go online to find relatives, share their results with strangers, sign up for personal DNA-based musical scores, and take part in research. This book critically examines this market of direct-to-consumer (DTC) genetic testing from a social science perspective, asking, what happens when genetics goes online? With a focus on genetic testing for disease, the book is about the new social arrangements which emerge when a traditionally clinical practice (genetic testing) is taken into new spaces (the internet). It examines the intersections of new genetics and new media by drawing from three different fields: internet studies; the sociology of health; and science and technology studies. While there has been a surge of research activity concerning DTC genetic testing, particularly in sociology, ethics and law, this is the first scholarly monograph on the topic, and the first book which brings together the social study of genetics and the social study of digital technologies. This book thus not only offers a new overview of this field, but also offers a unique contribution by attending to the digital, and by drawing upon empirical examples from our own research of DTC genetic testing websites (using online methods) and in-depth interviews in the United Kingdom with people using healthcare services.

Completely revised and updated with over 250 new entries, the third edition of this dictionary offers broad coverage of all aspects related to the field of plant sciences including biochemistry, plant physiology, cytology, ecology, genetics, evolution, biogeography, earth history, and earth sciences. New entries such as evo-devo, sister relationship, polytomy, and parallel sequencing make this the most up-to-date and comprehensive dictionary available. Useful appendices (The Universal Genetic Code, The Geologic Time-Scale, SI Units, Plant Classification, Fungi Classification) and a dedicated companion website featuring web links to relevant online resources support and enhance the A to Z entries. Clear, accessible, and concise, this is the ideal dictionary for students of botany, plant sciences and plant biology, environmental science and horticulture, as well as for amateur botanists and naturalists, and for the general reader with an interest in botany. The revised edition of the bestselling textbook, covering both classical and molecular plant breeding *Principles of Plant Genetics and Breeding* integrates theory and practice to provide an insightful examination of the fundamental principles and advanced techniques of modern plant breeding. Combining both classical and molecular tools, this comprehensive textbook describes the multidisciplinary strategies used to produce new varieties of crops and plants, particularly in response to the increasing demands to of growing populations. Illustrated chapters cover a wide range of topics, including plant reproductive systems, germplasm for breeding, molecular breeding, the common objectives of plant breeders, marketing and societal issues, and more. Now in its third edition, this essential textbook contains extensively revised content that reflects recent advances and current practices. Substantial updates have been made to its molecular genetics and breeding sections, including discussions of new breeding techniques such as zinc finger nuclease, oligonucleotide directed mutagenesis, RNA-dependent DNA methylation, reverse breeding, genome editing, and others. A new table enables efficient comparison of an expanded list of molecular markers, including Allozyme, RFLPs, RAPD, SSR, ISSR, DAMD, AFLP, SNPs and ESTs. Also, new and updated "Industry Highlights" sections provide examples of the practical application of plant breeding methods to real-world problems. This new edition: Organizes topics to reflect the stages of an actual breeding project Incorporates the most recent technologies in the field, such as CRISPR genome editing and grafting on GM stock Includes numerous illustrations and end-of-chapter self-assessment questions, key references, suggested readings, and links to relevant websites Features a companion website containing additional artwork and instructor resources *Principles of Plant Genetics and Breeding* offers researchers and professionals an invaluable resource and remains the ideal textbook for advanced undergraduates and graduates in plant science, particularly those studying plant breeding, biotechnology, and genetics.

In an easy to use dictionary style of A–Z presentation, this volume lists the taxonomy and medicinal usage of Indian plants. Also given are both traditional Indian and international synonyms along with details of the habitats of the plants. This book, illustrated by over 200 full-color figures, is aimed at bringing out an updated Acute Study Dictionary of plant sources of Indian medicine. The text is based on authentic treatises which are the outcome of scientific screening and critical evaluation by eminent scholars. The Dictionary is presented in a user-friendly format, as a compact, handy, easy to use and one-volume reference work.

In the Dictionary of Plant Genetics and Molecular Biology, more than 3,500 technical terms from the fields of plant genetics and molecular biology are defined for students, teachers, and researchers in universities, institutes, and agricultural research stations. An excellent educational tool that will save you time and effort, this dictionary brings together into a single source the meaning and origin of terms from the fields of classical genetics, molecular genetics, mutagenesis, population genetics, statistics, plant biotechnology, evolutionary genetics, plant breeding, and plant biotechnology. Finding and understanding the precise meaning of many terms in genetics is crucial to understanding the foundation of the subject matter. For reasons of space, the glossaries provided at the end of most textbooks are highly inadequate. There is, then, dire need for a dictionary of terms in a single volume. You'll appreciate the helpful approaches and features of Dictionary of Plant Genetics and Molecular Biology, including: no terms that are of limited use, very general, or self-explanatory cross references for effective access to the materials and economy of space alternate names of terms, denoted with "Also referred to as . . ." or "Also known as . . ." multiple definitions for terms defined by different authors or for terms with different meanings in different contexts authors who coined, described, or contributed toward further understanding of a term are listed and respective publications are included in the Bibliography At last, there is compiled in a single volume the technical terms you need to know in order to understand plant genetics and molecular biology. As your knowledge grows, you'll uncover even more terms that you need to understand. You'll find yourself turning to this handy guide time and time again for help on all levels.

A newly revised edition of the standard reference for the field today—updated with new terms, major discoveries, significant scientists, and illustrations *Developmental biology* is the study of the mechanisms of development, differentiation, and growth in animals and plants at the molecular, cellular, and genetic levels. The discipline has gained prominence in part due to new interdisciplinary approaches and advances in technology, which have led to the rapid emergence of new concepts and words. The Dictionary of Developmental Biology and Embryology, Second Edition is the first comprehensive reference focused on the field's terms, research, history, and people. This authoritative A-to-Z

resource covers classical morphological and cytological terms along with those from modern genetics and molecular biology. Extensively cross-referenced, the Dictionary includes definitions of terms, explanations of concepts, and biographies of historical figures. Comparative aspects are described in order to provide a sense of the evolution of structures, and topics range from fundamental terminology, germ layers, and induction to RNAi, evo-devo, stem cell differentiation, and more. Readers will find such features of embryology and developmental biology as: Vertebrates Invertebrates Plants Developmental genetics Evolutionary developmental biology Molecular developmental biology Medical embryology The author's premium on accessibility allows readers at all levels to enhance their vocabulary in their field and understand terminology beyond their specific focus. Researchers and students in developmental biology, cell biology, developmental genetics, and embryology will find the dictionary to be a vital resource.

This book integrates many fields to help students understand the complexity of the basic science that underlies crop and food production.

"A user-friendly A-to-Z resource for the technical terms that apply to plant cell, tissue, and organ culture. Filled with illustrations of key concepts and references to up-to-date textbooks, papers, and reviews, this handy guidebook defines both the terms that come from plant tissue culture, and those that originate from plant anatomy, genetics, stress physiology, growth regular research, microbiology, and plant pathology. Dictionary of Plant Tissue Culture is essential for anyone involved in tissue culture or using plant tissue culture systems for plant cloning, secondary metabolic production, plant pathology, and genetic manipulations."--BOOK JACKET.

Arguably one of the oldest scientific traditions, plant breeding began in Neolithic times, with methods as simple as saving the seeds of desirable plants and sowing them later. It was not until the re-encounter with Mendel's discoveries thousands of years later that the genetic basis of breeding was understood. Developments since then have provided further insight into how genes acting alone, or in concert with other genes and the environment, result in a particular phenotype. From Abaxial to Zymogram, the Dictionary of Plant Breeding contains clear and useful definitions of the terms associated with plant breeding and related scientific/technological disciplines. This second edition of a bestseller defines jargon, provides helpful tables, examples, and breeding schemes, and includes a list of crop plants with salient details. Packed with data and organized to make that data easy to access, this revised and expanded reference provides comprehensive coverage of the latest discoveries in cytogenetics, molecular genetics, marker-assisted selection, experimental gene transfer, seed sciences, crop physiology, and genetically modified crops. A complex subject, plant breeding draws from many scientific and technological disciplines, often making it difficult to know the precise meanings of many terms and to accurately interpret specific concepts. Most dictionaries available are highly specific and fragmentary. As in the previous edition, this dictionary unifies concepts by including the specific terms of plant breeding and terms that are adjusted from other disciplines. Drawing on the author's 30 years of experience, the dictionary provides an encyclopedic list of commonly used technical terms that reflect the latest developments in the field.

Concise definitions and descriptions to more than 1,000 terms—illustrated and fully referenced The Dictionary of Plant Tissue Culture is a user-friendly A-to-Z resource for the technical terms that apply to plant cell, tissue, and organ culture. Filled with illustrations of key concepts and references to up-to-date textbooks, papers, and reviews, this handy guidebook defines both the terms that come from plant tissue culture, and those that originate from plant anatomy, genetics, stress physiology, growth regular research, microbiology, and plant pathology. It's an essential resource for anyone involved in tissue culture or using plant tissue culture systems for plant cloning, secondary metabolic production, plant pathology, and genetic manipulations. The Dictionary of Plant Tissue Culture is an invaluable reference tool for teachers, students, and researchers working in basic and applied plant tissue culture. The book's entries are cross-referenced where appropriate, with references mainly to general textbooks on plant anatomy, biochemistry and histochemistry, developmental biology, genetics, microbiology, micropropagation, plant breeding, plant biotechnology, plant pathology and plant tissue culture. From ABA (abscisic acid) to zygotic embryo, this concise glossary will save you valuable time in your efforts to find concise definitions and descriptions to more than 1,000 terms. Entries to the Dictionary of Plant Tissue Culture include: acclimatization caulogenesis feeder cells hyperhydricity indexing micro-grafting phytosanitary certificate re-invigoration synseed totipotency and much more! The Dictionary of Plant Tissue Culture is an essential reference resource for undergraduate and postgraduate students, teachers, researchers, and technicians working in plant tissue culture and genetic engineering.

Plant Improvement By Man Began Many Thousands Of Years Ago. Pre Agricultural Man Learned That Seeds Put Into The Ground At A Certain Time Of The Year Produced Similar Seed-Producing Plants. This Was The Beginning Of Domestication Of Plants And Led To The Production Of The First Crops. Since Then, There Have Been A Lot Of Discoveries That Have Led To The Development Of The Plants And Flora. Plant Science Is A Growing Field That Is Constantly Evolving To Promote Changes That Benefit Both The Industry And Accommodate The Growing Populations That We Are Facing. With The Many Innovative Ideas And Constant Findings, Plant Science Has Provided Many Great Additions To Society. This Dictionary At Hand Is A Small Contribution To The Vast Field Of Plant Breeding And Genetics. The Terms And Their Definitions In This Have Been Compiled In This Dictionary After An Intensive Research. We Hope That The Efforts That Have Been Put In To Make This Dictionary Are Beneficiary To You And Your Study.

As a result of the emergence of the modern Sciences like biotechnology, bioinformatics, etc. which are as advancing fields of study, the life Sciences have acquired increasing importance and relevance. In order to cater to the needs of a wide spectrum of students and teachers in the present day fast developing scenario, we are presenting this dictionary of plant Sciences. The concept of Plant Sciences, Sense lato, is very broad in scope and may included all braches of knowledge concerned with plants like Agriculture, Forestry, Pharmaceutical medical Plants, etc. However, this book is mainly concerned with botany in a broad sense including fungi, bacteria and viruses: although the last three may sometimes be treated as separate groups. This dictionary

includes 3850 entries including a supplement. The main dictionary covers all branches of Botany like morphology, taxonomy, physiology, genetics, Ecology, economic botany, evolution etc. The supplement is mainly meant for advanced level students and teachers and all those interested in plants in a general way. It lays emphasis on the interrelationship of botany with allied subjects and latest developments like biotechnology, genomics, environmental sciences, plant diversity, Conservation, etc.

The only available paperback dictionary of zoology. This dictionary is a comprehensive and up-to-date reference work on all aspects of the study of animals. With over 5,000 entries, it is ideal for students and will be invaluable to amateur naturalists and all those with an interest in the subject. - ;This is the only available paperback dictionary of zoology. This dictionary is a comprehensive and up-to-date reference work on all aspects of the study of animals. Now with over 5,000 entries, it is ideal for students and will be invaluable to amateur naturalists and all those with an interest in the subject. It is illustrated with clear line drawings, and supported by useful appendices on the genetic code, endangered animals, and SI units. Wide coverage including animal behaviour, ecology, physiology, genetics, cytology, evolution, Earth history, zoogeography. Full taxonomic coverage of arthropods, other invertebrates, fish, reptiles, amphibians, birds, and mammals. Completely revised to incorporate the discovery of 'extremophiles' - organisms living in environments formerly considered impossibly hostile - and the taxonomic reclassification that this has entailed. Featuring entries on genetics, evolutionary studies, and mammalian physiology. -

From Abaxial to Zymogram, make sense out of the confusing terminology of plant breeding! The Encyclopedic Dictionary of Plant Breeding and Related Subjects is the first comprehensive book that contains clear and useful definitions of the terms associated with plant breeding and related scientific/technological disciplines. This well-organized guide defines all of the jargon surrounding this ever-evolving topic and provides helpful tables, examples, and breeding schemes to make the data easy to access and utilize. It also includes a list of crops, weeds, and other important plants that includes common names, scientific descriptions, chromosome numbers, genome constitution, DNA content, and other data where available. From the author: "Until now, it has been difficult to find the precise meaning of many terms and to accurately interpret the specific concepts of plant breeding. Most dictionaries and glossaries available have been highly specific or fragmentary, and no attempt has been made to provide a comprehensive compilation of plant breeding terms. My intention in the creation of this book was to include not only the terms of the present, but also some of the terms used during the long history of plant breeding. In order to serve students, teachers, and research workers as well as plant breeders and seed producers, this book is supplemented by breeding schemes, tables, examples, and a list of crop plants including some details." The Encyclopedic Dictionary of Plant Breeding and Related Subjects is an ideal single source for precise definitions of the terms used in: agronomy horticulture forestry seed production genetics, molecular genetics, population genetics, and cytogenetics biotechnology biochemistry mutagenesis biometry botany cytology ecology plant evolution laboratory technologies If you make the Encyclopedic Dictionary of Plant Breeding and Related Subjects a part of your collection, you'll find yourself, your colleagues, and your students referring to it again and again. Order this first-of-its-kind volume today!

Now in its fifth edition and for the first time available as an electronic product with all entries cross-linked. This very successful long-seller has once again been thoroughly updated and greatly expanded. It now contains over 13,000 entries, and comprehensively covering genomics, transcriptomics, and proteomics. Each entry contains an extensive explanation, including a comprehensive listing of synonyms and acronyms, and all formulas have been redrawn to create a uniform style, while most of the figures are custom designed for this dictionary. The ultimate reference for all terms in the -omics fields.

Owing to its considerable winter hardiness, rye is a cereal that played a major role in the feeding of European populations throughout the Middle Ages. Recent data shows that rye is grown on about 5.4 million hectares, with a world production of approximately 13 million tons. While still an important bread food in many countries, rye produced for bread making has decreased or stagnated, whereas production is increasing for other market segments. Particularly, rye for feeding, ethanol processing, and biogas is promoted in Europe. The first comprehensive monograph on rye, *Rye: Genetics, Breeding, and Cultivation* gathers all the relevant and historic information from botany and genetics to utilization and sustainability of rye. The book covers taxonomy, morphology, and other botany-related aspects of rye. It describes its physiology, cytology, and genetics, including use for genetic improvement of other cereals. The author addresses various types of breeding such as population, hybrid, and molecular breeding. He also discusses rye cropping, including seeding techniques, fungal and viral diseases, and predators. The book examines the various uses for rye beyond bread making. This includes feeding, biomass and biogas production, ethanol production, and other important characteristics such as phytosterol content and antioxidant activity. It also explores the nutritional value of rye. Written by a leading expert in the field, this monograph compiles the most important facets of rye research, past and present.

One of the oldest scientific traditions, plant breeding began in Neolithic times with methods as simple as saving the seeds of desirable plants and sowing them later. It was not until the re-encounter with Mendel's discoveries thousands of years later, the genetic basis of breeding was understood. Developments following have provided further insight into how genes acting alone or in concert with other genes and the environment, result in a particular phenotype. From Abaxial to Zymogram, the third edition of Dictionary of Plant Breeding contains clear and useful definitions of the terms associated with plant breeding and related scientific/technological disciplines. It defines jargon; provides helpful tables, examples, and breeding schemes; and includes a list of crop plants with salient details. Packed with data and organized to make that data easy to access, this revised and expanded reference provides comprehensive coverage of the latest discoveries in cytogenetics, molecular genetics, marker-assisted selection, experimental gene transfer, CRISPR technology, seed sciences, crop physiology, and genetically modified crops. Features: Provides a comprehensive list of technical terms used in plant breeding Explores the historical development of crop improvement Discusses applications of molecular genetics and biotechnology Includes numerous figures, drawings, tables, and schemes supplementing the glossary A complex subject, plant breeding draws from many scientific and technological disciplines, often making it difficult to know the precise meanings of many terms and to accurately interpret specific concepts. As in the previous editions, this dictionary unifies concepts by including the specific terms of plant breeding and terms that are adjusted from other disciplines. Drawing on Rolf Schlegel's 50 years of experience, the book provides an encyclopedic list of commonly used technical terms that reflect the latest developments in the field.

Introduction and overview; State of the art of DNA storage: results of a world wide survey; DNA storage as a complementary conservation strategy; Platforms for DNA banking; The role of bioinformatics in coordinating conservations efforts; DNA banks: a primary resource for conservation research; Tissue collections as a means of storing DNA: a contribution to the conservation of

Colombian biodiversity; Opportunities, limitations and needs for DNA banks; A model for DNA banking to enhance the management, distribution and use of ex situ stored PGR.

A comprehensive paperback dictionary of botany, this edition provides over 5500 concise entries and includes coverage of biochemistry, plant physiology, cytology, ecology, genetics, evolution, biogeography, Earth history, and the Earth sciences. Previous ed.: 1998.

Sequencing of the maize genome has opened up new opportunities in maize breeding, genetics and genomics research. This book highlights modern trends in development of hybrids, analysis of genetic diversity, molecular breeding, comparative and functional genomics, epigenomics and proteomics in maize. The use of maize in biofuels, phytoremediation and

This beautifully illustrated glossary comprises over 2400 terms commonly used to describe vascular plants. The majority are structural terms referring to parts of plants visible with the naked eye or with a x10 hand lens, but some elementary microscopical and physiological terms are also included, as appropriate. Each term is defined accurately and concisely, and whenever possible, cross referenced to clearly labelled line drawings made mainly from living material. The illustrations are presented together in a section comprising 127 large format pages, within which they are grouped according to specific features, such as leaf shape or flower structure, so allowing comparison of different forms at a glance. The illustrations therefore provide a unique compilation of information that can be referred to independently of the definitions. This makes the glossary a particularly versatile reference work for all those needing a guide to botanical terminology and plant structure.

The purpose of this book is to present classical plant development in modern, molecular-genetic terms. The study of plant development is rapidly changing as plant genome projects uncover a multitude of new genes. This book provides a framework for integrating gene discovery and genome analysis into the context of plant development. Molecular Genetics of Plant Development is designed to be used as a text-book for upper-division or graduate courses in plant development. The book will also serve as a reference book for scientists in the field of plant molecular biology or plant molecular genetics. The book is also useful for general development courses in which both animal and plant development are presented.

This unique dictionary is an authoritative and up-to-date reference book on all aspects of the study of plants. While many of the over 5,000 entries in The Concise Oxford Dictionary of Botany have been taken from the highly acclaimed Oxford Dictionary of Natural History, a substantial number have been written especially for this volume. Completely comprehensive, this dictionary offers concise and accessible explanations of terms from biogeology, evolution, earth history, and all the earth sciences, as well as up-to-date entries on more current fields of interest such as ecology, genetics, plant physiology, biochemistry, and cytology. In addition, the book offers world-wide coverage of taxonomic groups and takes full account of recent taxonomical revisions. One-third of the entries are devoted to taxa, from bacteria and fungi to the main groups of flowering and non-flowering plants. Brief biographical sketches of important botanists are also included. With almost twice the number of entries as any similar dictionary, The Concise Oxford Dictionary of Botany is perfect for amateur botanists, and anyone interested in the world around us.

Kew's highly acclaimed plant dictionary clearly defines 4,905 entries used by botanists to describe plants in textbooks, scientific papers, floras and field guides. This second edition includes 400 new terms including a section of vegetation types, and more than 730 entries are illustrated with detailed line drawings as well as 32 plates of grouped terms. The Kew Plant Glossary provides an essential reference for students, teachers, researchers, conservationists, horticulturalists, agriculturalists and gardeners.--COVER. This comprehensive dictionary provides an essential reference for plant pathologists and agriculturalists at all levels, listing the authoritative names of all major plant pathogens. The 11,000 entries, which include fungi from over 500 genera, 800 viruses, bacteria, mollicutes, nematodes and virioids, contain brief descriptions and thorough supporting references. There are also entries for the names of diseases and disorders, crops and their pathology, fungicides, taxonomic groups, terminology, toxins, vectors and past plant pathologists. Overall, the volume provides a wide-ranging resource for all those working in the discipline. In this new edition over 3000 entries have been added and many existing entries updated and expanded. In addition, common disease names such as "blight" and "canker" are now more conveniently included under the relevant crop.

This reference covers all aspects of botany and ranges into related fields such as agriculture and horticulture. Containing encyclopedic information and including substantial articles on major terms and concepts as well as shorter articles and cross-reference definitions, the book is intended primarily for A level students and first-year university students studying botany and biology but, as it covers both pure and applied aspects, it will also provide a useful reference service for students and others with interests in agriculture, horticulture, physical geography and related fields

This dictionary is helpful to students and those involved in farm activities as it contains the nature of plants, inheritance of various characters and describe about various improvements in crop plants for the advantage of human beings. With the knowledge of plant breeding and genetics this can be possible. This dictionary is meant for such as knowledge. The techniques and technical words being explained in this dictionary may be immensely useful in improving plants to get high production from them. The dictionary can be very useful for plant breeders and students alike.

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