

Cytological Effect Of Ethyl Methane Sulphonate And Sodium

Covering aspects of Cell Science, ranging from Basic and Applied, to their modern developments including cell cycle and check-point, Cytology and Genetics elucidates all relevant notions thoroughly.

Apomixis in Plants presents a comprehensive review of different aspects of asexual seed formation in plants. This is important in plant research since apomixis could greatly facilitate breeding in important crops. It is also interesting theoretically because it carries problems related to genetic variation and evolution to its extreme. The book features a broad selection of topics, including a historical review of ideas and landmarks in the field; comparisons with other types of asexual reproduction in higher plants and with related phenomena in animals and related plants; a presentation of cytology and embryology of apomicts and the diversified terminology in the field; views on the genetic background of apomixis and environmental effects on its expression; and the interrelation between apomixis and other traits. Additional topics covered include classical and modern theories of sexual versus asexual reproduction; geographical and taxonomical trends in apomicts; ecological implications of apomixis, and a review of future possibilities for using apomixis in plant breeding. Apomixis in Plants is an important reference volume for researchers and students in all areas of botany, ecology, and plant breeding.

The contributors include some of the most eminent specialists in the field of phycology. This volume focuses on cytological and developmental methods, each method already has been applied successfully to algae, and practical examples are given.

This study was conducted with the objective of enhancing salt tolerant in two rice (*Oryza sativa* L.) genotypes grown widely in Iraq, namely Amber 33 and Amber Baghdad which are sensitive to salinity. In this study, many experiments were carried out to investigate DNA markers associated with salinity tolerance by inducing genetic variation using Ethyl Methane Sulphonate (EMS) and UV-B (320 nm) radiation as a mutagen and then selecting tolerant plants. The first experiment included screening the sensitive genotype seedlings for salinity tolerance using Murashige and Skoog, 1962 medium (MS) supplemented with different sodium chloride (NaCl) concentrations. Seeds of two rice genotypes Amber 33 and Amber Baghdad were inoculated into half strength MS medium supplemented with 0.0, 50, 100, 150, 180 or 200 mM NaCl. The effect of NaCl was examined on seed germination, shoot height, root length, root number, and activities of antioxidative enzymes (peroxidase, catalase and ascorbate peroxidase). Addition of NaCl resulted in decreasing the means of all studied characters with increasing NaCl concentration except the activities of antioxidative enzymes since they increased significantly.

The book by M. Imran Kozgar aims to cover the problems of mutation breeding in pulse crops in the light of issues related to food insecurity and malnutrition, which according to FAO are the major threats at the present time. So far the research on induction of mutation in pulse crops is negligible compared to cereal crops, though the pulse crops and especially the chickpea are the largest grown crops in India. The main objective of the book is to reveal and explore the

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possibility of inducing genetic variability in early generations of mutated chickpea, describe the positive aspects of mutagenic treatments, evaluate the content of mineral elements (iron, manganese, zinc and copper) and physiological parameters of isolated high yielding mutant lines. The author hopes that his book will help to advance studies on pulse crops, and that in the long term it will help to reduce the food insecurity and malnutrition problems presently persisting in various developing countries, including India.

International Review of Cytology

Abstract: This book presents contemporary information on mutagenesis in plants and its applications in plant breeding and research. The topics are classified into sections focusing on the concepts, historical development and genetic basis of plant mutation breeding (chapters 1-6); mutagens and induced mutagenesis (chapters 7-13); mutation induction and mutant development (chapters 14-23); mutation breeding (chapters 24-34); or mutations in functional genomics (chapters 35-41). This book is an essential reference for those who are conducting research on mutagenesis as an approach to improving or modifying a trait, or achieving basic understanding of a pathway for a trait --.

Mulberry (*Morus* spp.) is an important horticultural plant in the sericulture industry. It belongs to the family Moraceae. The leaf of mulberry is used to feed the silkworm *Bombyx mori* L. It is also used as a fodder. Due to its economic and agricultural importance, mulberry is cultivated in many parts of the world. An estimated 60% of the total cost of silk cocoon production is for production and maintenance of mulberry plants. Therefore, much attention is needed to improve the quality and quantity of mulberry leaves. It is vital to increase the production of superior quality mulberry leaves with high nutritive value for the sericulture industry. Although a lot of research is going on in mulberry, very little effort has been made to compile the results of this research in a single book. This book provides an update of recent research works going on in this plant. It describes the taxonomy, conservation of germplasm, genetic diversity of various mulberry species, application of breeding techniques to improve the quality of mulberry, in vitro conservation, application of tissue culture techniques to improve mulberry species, production of haploids and triploids in mulberry and improvement of abiotic stress adaptive traits in mulberry with relevance to adaptiveness to global warming.

Plant Breeding Reviews is an ongoing series presenting state-of-the art review articles on research in plant genetics, especially the breeding of commercially important crops. Articles perform the valuable function of collecting, comparing, and contrasting the primary journal literature in order to form an overview of the topic. This detailed analysis bridges the gap between the specialized researcher and the broader community of plant scientists.

Chromosome Structure and AberrationsSpringer

Essays in Toxicology, Volume 7 presents essays on toxicology and related topics. The book presents essays on the effects of toxicants on reproductive performance; an overall view of carcinogenesis from an epidemiological viewpoint and the potentialities and limitations of the epidemiological method in cancer control; and the activity of cytochrome P450 and mixed-function oxidase in target and nontarget organisms. The text also includes essays on the toxicity of hexachlorophene and the use of hexachlorophene as an antibacterial agent; the methodology, dose measurement, and respiratory function assessment in respiratory toxicology; as well as behavioral toxicology, with focus on early warning and worker safety and health. Pharmacologists, biochemists, pathologists, neurophysiologists, epidemiologists, and toxicologists will find the book invaluable.

Induced mutagenesis is a common and promising method for the screening of new crops with improved production methods, and has made a tremendous contribution to crop improvement. Now, as the techniques of molecular biology become more widely adopted by plant breeders, this comprehensive summary sets mutation breeding within a contemporary context and relates it to other breeding techniques. This book opens a new chapter of inducing mutations at

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the gene level, and details techniques that can be used to harvest and exploit such mutation to improve the productivity of crops, particularly cereals, grains and vegetables. The chapters within this volume are supported by diagrams, tables and graphs to make the content more comprehensible. The book will be extremely useful for advanced undergraduates, graduates, postgraduate students, and research scientists of botany, agriculture, horticulture, genetics, biotechnology, biochemistry and agronomy.

Includes notices of research projects submitted to the Smithsonian Science Information Exchange concerning toxicological testing.

Contributed articles.

This book is a compilation of various chapters contributed by a group of leading researchers from different countries and covering up to date information based on published reports and personal experience of authors in the field of cytogenetics. Beginning with the introduction of chromosome, the subsequent chapters on organization of genetic material, karyotype evolution, structural and numerical variations in chromosomes, B-chromosomes and chromosomal aberrations provide an in-depth knowledge and easy understanding of the subject matter. A special feature of the book is the inclusion of a series of chapters on various types of chromosomal aberrations and their impact on breeding behaviour and crop improvement. The possible mechanism, their consequences and role in genetic analysis has been emphasized in these chapters. A few chapters have also been dedicated on various techniques routinely used in the laboratory by students and researchers. Each chapter ends with an extensive bibliography so that the students and researchers may find it relevant to consult more literature on the subject than a book of this size can offer. The book is intended to fulfill the needs of undergraduate and post graduate students of botany, zoology and agriculture besides, teachers and researchers engaged in the field of genetics, cytogenetics, and molecular genetics. In general the readers will find each chapter of the book informative and easy to understand.

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