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KEY=BREEDING - RAMOS MALDONADO

Diagnostics in Plant Breeding *Springer Science & Business Media “Diagnostics in Plant Breeding” is systematically organizing cutting-edge research reviews on the development and application of molecular tools for the prediction of plant performance. Given its significance for mankind and the available research resources, medical sciences are leading the area of molecular diagnostics, where DNA-based risk assessments for various diseases and biomarkers to determine their onset become increasingly available. So far, most research in plant genomics has been directed towards understanding the molecular basis of biological processes or phenotypic traits. From a plant breeding perspective, however, the main interest is in predicting optimal genotypes based on molecular information for more time- and cost-efficient breeding schemes. It is anticipated that progress in plant genomics and in particular sequence technology made recently will shift the focus from “explanatory” to “predictive” in crop science. This book assembles chapters on all areas relevant to development and application of predictive molecular tools in plant breeding by leading authorties in the respective areas.* **Precision Diagnostics and Innovations for Plant Breeding Research** *Major technological advances are necessary to reach the goal of feeding our world's growing population. To do this, there is an increasing demand within the agricultural field for rapid diagnostic tools to improve the efficiency of current methods in plant disease and DNA identification. The use of gold nanoparticles has emerged as a promising technology for a range of applications from smart agrochemical delivery systems to pathogen detection. In addition to this, advances in image classification analyses have allowed machine learning approaches to become more accessible to the agricultural field. Here we present the use of gold nanoparticles (AuNPs) for the detection of transgenic gene sequences in maize and the use of machine learning algorithms for the identification and classification of Fusarium spp. infected wheat seed. AuNPs show promise in their ability to diagnose the presence of transgenic insertions in DNA samples within 10 minutes through colorimetric response. Image-based analysis with the utilization of logistic regression, support vector machines, and k-nearest neighbors were able to accurately identify and differentiate healthy and diseased wheat kernels within the testing set at an accuracy of 95-98.8%. These technologies act as rapid tools to be used by plant breeders and pathologists to improve their ability to make selection decisions efficiently and objectively.* **New Diagnostics in Crop Sciences** *C A B International An overview of the development and application of diagnostic methods in crop sciences; Varietal identification of crop plants; Monoclonal antibody technology; Antibody probes in cereal breeding for quality and disease resistance; The interface between RFLP techniques, DNA amplification and plant breeding; Nucleic acid techniques in testing for seedborne diseases; Fungal immunodiagnostics in plant agriculture; Antibody approaches to plant viral diagnosis; Nucleic-acid-based approaches to plant virus and virosis diagnostics; Monitoring safety of plant foods: immunodiagnostics for mycotoxins and other bioactives compounds; Diagnostics for plant agrochemical: a meeting of chemistry and immunoassay; Measurement of polysaccharide-degradins enzymes in plants using chromogenic and colorimetric substrates; Iozyme variation and analysis in agriculturally important plants; The use of carbon isotope discrimination analysis plant improvement.* **Molecular Methods in Plant Disease Diagnostics Principles and Protocols** *CABI Using molecular methods for plant disease diagnosis provides diagnosticians with a number of advantages over more traditional methods. They can allow the identification of morphologically similar species, for example, or the detection of infection prior to symptom formation. Not only can molecular tools help by increasing the efficacy, accuracy and speed of diagnosis; their common technological basis provides further benefits, especially where resources are limited and traditional skills are hard to sustain. This book provides protocols for nucleic acid-based methods currently applied to plant pathogen detection and identification. It takes the practitioner through the full range of molecular diagnostic and detection methods and, as these generic techniques are appropriate for use on any target with minimal modification, also provides a useful resource for students of plant pathology and plant pathologists. Beginning with the background and future directions of the science, it then addresses DNA barcoding, microarrays, polymerase chain reactions (PCR), quality assurance and more, forming a complete reference on the subject.* **Diagnostic of the current state of intellectual property rights in Costa Rica, in the areas of biotechnology and plant breeding Plant Disease Management** *LAP Lambert Academic Publishing The plants get infected by different types of pathogenic organisms. Losses of crop due to diseases are immense.Diseases of crop plants are responsible for economic loss of farmers' distributors, sellers and consumers.The plant diseases considerably reduce the yield and quantity of grains. The text is prepared to provide the latest information on management of specific disease of a specific crop plant. Plant diseases are a matter of great concern globally but perfect method of management against diseases of crop plants requires for getting increase in yield. The text of management of diseases explained in simple language. Extensive references made the recent updates of the text. The book will be useful reference to graduate, post graduate & research students of Botany, agriculture, Plant Pathology, Microbiology, Plant Breeding, Plant Disease Diagnostics, Forestry, Agronomy, Crop development, Virology, Mycology & Environmental Biology. The book deals with disease management from Mechanical, cultural and eco-friendly approaches over cultivated crops. The book highlights on the equipment useful in plant disease managemen* **Marker-Assisted Plant Breeding: Principles and Practices** *Springer Marker-assisted plant breeding involves the application of molecular marker techniques and statistical and bioinformatics tools to achieve plant breeding objectives in a cost-effective and time-efficient manner. This book is intended for beginners in the field who have little or no prior exposure to molecular markers and their applications, but who do have a basic knowledge of genetics and plant breeding, and some exposure to molecular biology. An attempt has been made to provide sufficient basic information in an easy-to-follow format, and also to discuss current issues and developments so as to offer comprehensive coverage of the subject matter. The book will also be useful for breeders and research workers, as it offers a broad range of up-to-the-year information, including aspects like the development of different molecular markers and their various applications. In the first chapter, the field of marker-assisted plant breeding is introduced and placed in the proper perspective in relation to plant breeding. The next three chapters describe the various molecular marker systems, while mapping populations and mapping procedures including high-throughput genotyping are discussed in the subsequent five chapters. Four chapters are devoted to various applications of markers, e.g. marker-assisted selection, genomic selection, diversity analysis, finger printing and positional cloning. In closing, the last two chapters provide information on relevant bioinformatics tools and the rapidly evolving field of phenomics.* **Principles of Plant Genetics and Breeding** *John Wiley & Sons Until recently, plant breeders have depended primarily on classical tools to develop new and improved products for producers and consumers. However, with the advent of biotechnology, breeders are increasingly incorporating molecular tools in their breeding work. In recognition of the current state of methods and their application, this text introduces both classical and molecular tools for plant breeding. Topics such as biotechnology in plant breeding, intellectual property, risks, emerging concepts (decentralized breeding, organic breeding), and more are addressed in this state of the art text. The final 8 chapters provide a useful reference on breeding the largest and most common crops. In addition, over 25 plant breeders share their professional experiences while illustrating concepts in the text. Features include: Comprehensive presentation of both classical and molecular plant breeding tools Industry highlight essays from over 25 professional plant breeders Chapter introductions, summaries and discussion questions Easy reference glossary Reference chapters on breeding 8 of the largest and most common crops Artwork from the book is available to instructors online at www.blackwellpublishing.com/acquaah. An Instructor manual CD-ROM for this title is available. Please contact our Higher Education team at HigherEducation@wiley.com for more information.* **Molecular Marker Applications in Oat (Avena Sativa L.) Breeding and Germplasm Diagnostics Innovative diagnostic tools to optimise potato breeding: systematic analysis of cellular processes and their relation to plant internal oxygen concentrations (InnOx) Schlussbericht zum Verbundvorhaben ; Teilprojekt 6: De-novo Analyse der Proteinkomposition und - qualität der Knollen ; Laufzeit des Vorhabens : 01.09.2006 bis 31.07.2009 Plant Breeding Reviews** *John Wiley & Sons 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.* **Microbial Plant Pathogens-Detection and Disease Diagnosis: Fungal Pathogens, Vol.1** *Springer Science & Business Media Morphological, biological, biochemical and physiological characteristics have been used for the detection, identification and differentiation of fungal pathogens up to species level. Tests based on biological characteristics are less consistent. Immunoassays have been shown to be effective in detecting fungal pathogens present in plants and environmental samples. Development of monoclonal antibody technology has greatly enhanced the sensitivity and specificity of detection, identification and differentiation of fungal species and varieties/strains. Nucleic acid-based techniques involving hybridization with or amplification of unique DNA have provided results rapidly and reliably. Presentation of a large number of protocols is a unique feature of this volume.* **Fundamentals of Field Crop Breeding** *Springer Nature This book is an advanced textbook and a reference book for the post-graduate plant-breeding students and the plant breeders. It consolidates fundamental concepts and also the latest advances in plant-breeding practices including development in crop genomics. It contains crop wise explanation on origin, reproduction, genetics of yield contributing traits, biotic and abiotic stresses, nutritional improvement and crop specific plant-breeding procedures and techniques. The chapters are planned to describe crop-focused breeding procedure for the major crop plants as per their economic importance. The recent developments in breeding of field crops have been reported. The recent progress made in mapping traits of economic importance has been critically reviewed for each crop. The progress made in markers assisted selected in few crops has been summarized. This book bridges the knowledge gap and bring to the researchers and students information on modern breeding tools for developing biotic and abiotic stress tolerant, climate resilient and micronutrient rich varieties of field crops. The chapters in book are contributed by experienced Plant Breeders.* **Genetic Manipulation of Woody Plants** *Springer Science & Business Media This Volume contains the papers presented by twenty-eight invited speakers at the symposium entitled, "Genetic Manipulation of Woody Plants," held at Michigan State University, East Lansing, Michigan, from June 21-25, 1987. Also included are abstracts of contributed poster papers presented during the meeting. That the molecular biology of woody plants is a rapidly expanding field is attested to by the large attendance and high level of enthusiasm generated at the conference. Leading scientists from throughout the world discussed challenging problems and presented new insights into the devel opment of in vitro culture systems, techniques for DNA analysis and manipulation, gene vector systems, and experimental systems that will lead to a clearer understanding of gene expression and regulation for woody plant species. The presence at the conference of both invited speakers and other scientists who work with nonwoody plant species also added depth to the discussions and applicability of the information presented at the conference. The editors want to commend the speakers for their well-organized and informative talks, and feel particularly indebted to the late Dr. Alexander Hollaender and others on the planning committee who assist ed in the selection of the invited speakers. The committee consisted of David Burger (University of California, Davis), Don J. Durzan (University of California, Davis) , Bruce Haissig (U. S. Department of Agriculture Forest Service), Stanley Krugman (U. S. Department of Agriculture Forest Service) , Ralph Mott (North Carolina State University), Otto Schwarz (Univer.sity of Tennessee, Knoxville), and Roger Timmis (Weyerhaeuser Company).* **Quantitative Genetics and Breeding Methods The Way Ahead : Proceedings of the Eleventh Meeting of the EUCARPIA Section Biometrics in Plant Breeding, Paris, France, August 30/31-September 1, 2000** *Editions Quae* **Fungal Wheat Diseases: Etiology, Breeding, and Integrated Management** *Frontiers Media SA* **Plant Pathology and Plant Diseases** *CABI This textbook provides a comprehensive introduction to all aspects of plant*

diseases, including pathogens, plant-pathogen interactions, their management, and future perspectives. Plant diseases limit potential crop production and are responsible for considerable losses in agriculture, horticulture and forestry. Our global food production systems are under increasing pressure from global trade, climate change and urbanization. If we could alleviate the losses due to plant diseases, we would be able to produce roughly 20% more food - enough to feed the predicted world population in 2050. Co-authored by a group of international teachers of plant pathology who have collaborated for many years, the book gives expert and seamless coverage. Plant Pathology and Plant Diseases: Addresses major advances in plant-pathogen interactions, classification of plant pathogens, and the methods of managing or controlling disease Is relevant for a global audience; it covers many examples of diseases with an impact worldwide but with an emphasis on disease of particular importance in a temperate context Features over 400 striking figures and colour photographs It is suitable for graduate students and advanced undergraduates studying plant pathology, biology, agriculture and horticulture. **Estonian Biotechnology Programme - Feasibility Study** *Ministry of Economics* **Nuclear Science Abstracts Handbook of Molecular Technologies in Crop Disease Management** *CRC Press The most effective, economic, and environmentally sound approach of managing crop disease in today's world is by breeding crops resistant to disease. The Handbook of Molecular Technologies in Crop Disease Management provides a top-to-bottom detailed view of crops, from their molecular level to ways to manipulate a higher resistance to disease through breeding. This comprehensive, single-source reference text covers the entire field of molecular breeding, transgenic technology, molecular plant pathology, and molecular disease diagnostics, presenting it all in clear, understandable language. The book contains an extensive bibliography and provides several tables and figures to clearly reinforce crucial points.* **Plant Pathogen Detection and Disease Diagnosis, Second Edition,** *CRC Press This work provides information on the detection, identification, and differentiation of all microbial plant pathogens - presenting modern protocols for rapid diagnosis of diseases based on biological, physical, chemical and molecular properties. It contains methods for the selection of disease-free seeds and vegetatively propagated planting materials and quarantine techniques for screening newly introduced plant materials.* **Plant Molecular Biotechnology in the Southeast Asian Context** *The relevance and problems of implementing plant molecular biology in the traditional agricultural economies of SE Asia is considered. Promising areas for agricultural improvement and utility include molecular marker technology for plant breeding, DNA diagnostics, transgenic plant technology, plant transformation for improving crop characteristic and producing novel products, studying desirable control elements to control gene expression and the molecular mechanisms underlying desirable traits. [Author's abstract].* **Bulletin A Textbook Of Biotechnology For Class-XII** *S. Chand Publishing Multiple choice questions with their answers are also incorporated to help students preparing for competitive examinations.* **The Molecular and Physiological Basis of Nutrient Use Efficiency in Crops** *John Wiley & Sons Efforts to increase efficient nutrient use by crops are of growing importance as the global demand for food, fibre and fuel increases and competition for resources intensifies. The Molecular and Physiological Basis of Nutrient Use Efficiency in Crops provides both a timely summary of the latest advances in the field as well as anticipating directions for future research. The Molecular and Physiological Basis of Nutrient Use Efficiency in Crops bridges the gap between agronomic practice and molecular biology by linking underpinning molecular mechanisms to the physiological and agronomic aspects of crop yield. These chapters provide an understanding of molecular and physiological mechanisms that will allow researchers to continue to target and improve complex traits for crop improvement. Written by leading international researchers, The Molecular and Physiological Basis of Nutrient Use Efficiency in Crops will be an essential resource for the crop science community for years to come. Special Features: coalesces current knowledge in the areas of efficient acquisition and utilization of nutrients by crop plants with emphasis on modern developments addresses future directions in crop nutrition in the light of changing climate patterns including temperature and water availability bridges the gap between traditional agronomy and molecular biology with focus on underpinning molecular mechanisms and their effects on crop yield includes contributions from a leading team of global experts in both research and practical settings* **Biotechnology and Plant Disease Management** *CABI As agricultural production increases to meet the demands of a growing world population, so has the pace of biotechnology research to combat plant disease. Diseases can be caused by a variety of complex plant pathogens including fungi, bacteria, viruses and nematodes, and their management requires the use of techniques in transgenic technology, biochemistry and genetics. While texts exist on specific pathogens or management practices, a comprehensive review is needed of recent developments in modern techniques and the understanding of how pathogens cause disease. This collection of studies discusses the key approaches to managing each group of pathogens within the context of recent developments in biotechnology. Broad themes include microbe-plant interactions, molecular diagnostics of plant pathogens and enhancing the resistance of plants.* **International Review of Cytology** *Academic Press International Review of Cytology* **Crop Breeding and Biotechnology** *Pointer Publishers Biotechnology has revolutionized the concepts in agriculture, food, industrial feed stocks and health care in the past three decades. It has furnished techniques to enhance agricultural productivity, raise value added products and health care systems and has ensured better environments. Rapid advances in diverse areas of biotechnology have ushered tremendous new tools to affect change in agriculture, medicine and cell biology. The present volume entitled Crop Breeding and Biotechnology furnishes information on recent advances in Biotechnology. Written by leading experts it offers the most comprehensive and up-to-date information on selected topics, most sought after by researchers and students at the graduate and postgraduate level. Each chapter discusses the current status. The strength of this volume is lavishly used images, and extensive literature citation in each chapter. Certain to become the standard reference for biotechnologists, molecular biologists, breeders, applied biologists, a must for teachers and students engaged in teaching and research in plant physiology, plant breeding, crop improvement and other aspects of plant sciences, the book is the definitive source for those who are keen to remain updated with the recent advances in biotechnology pertinent to crop breeding.* **MANAGING INTELLECTUAL PROPERTY : The Strategic Imperative** *PHI Learning Pvt. Ltd. The book, now in its fifth edition, offers a comprehensive treatment of Intellectual Property concepts and their applications in Indian industry. It provides a strategic framework for IP management, leading to competitive advantage for a business enterprise. Besides explaining the conceptual framework and practices of IP management, the book discusses IP as a strategic tool, its commercial exploitation and strategies for risk management of IP. Web-based material comprising chapter-wise PowerPoint Presentations (PPTs) and Multiple Choice Questions is available at www.phindia.com/sople. This book is primarily intended as a text for postgraduate students of management, students of engineering and those who are pursuing certificate, postgraduate diploma or degree courses in IPR. In addition, professionals and corporate decision-makers should find the text valuable.NEW TO THE FIFTH EDITION • A new chapter has been introduced on Filing Patent Applications. • Numerous sections such as clinical research regulations, planned purification, combination therapy, alternate delivery, trade dress trademark protection, trademark caution notice, comparative advertising and trademark violation, contributory and vicarious infringement, two statutes for farmers' rights, incremental innovation, piracy in fashion design, patentable or not patentable biotech inventions have now been incorporated in the respective chapters. • More cases/caselets have been introduced in the present edition. KEY FEATURES • Discusses IPs such as Patents, Copyrights, Trademarks, Trade Secrets, Designs, Semiconductor Circuit Layouts and Geographical Indications, etc. • Practices issues of IPRs in Cyber Space, Fashion Design, Biotechnology and Pharmaceutical industry. • Classifies systems in practice for various IPs. • Provides IPRs legal provision in Indian context. • Includes a comprehensive glossary of important terms. • Encloses CD-ROM containing Intellectual Property Rights' laws in India as per the latest amendments.* **Agricultural Nanobiotechnology Modern Agriculture for a Sustainable Future** *Springer Nanobiotechnology in agriculture is a new knowledge area that offers novel possibilities to achieve high productivity levels at manageable costs during the production and merchandising of crops. This book shows us how we can use the cutting-edge knowledge about agriculture, nanotechnology, and biotechnology to increase the agricultural productivity and shape a sustainable future in order to increase the social welfare in rural areas and preserve the environmental health. Specialists from several countries will provide their feedback on a range of relevant topics such as environment-friendly use of nanofertilisers, nanodevices, nano-food packaging, nanocoating and nanocarriers and their relationship with the modern agriculture.* **Introgression Breeding in Cultivated Plants** *Frontiers Media SA* **Innovative diagnostic tools to optimize potato breeding: systematic analysis of cellular processes and their relation to plant internal oxygen concentrations - InnOx Abschlussbericht der Partner der Universität Potsdam im Verbundvorhaben ; Laufzeit des Verbundvorhabens: 1. Juli 2006 bis 30. Juni 2009 Biotechnology: Potentials and Limitations Report of the Dahlem Workshop on Biotechnology: Potentials and Limitations Berlin 1985, March 24–29** *Springer Science & Business Media hurdle will be in the latter area. The technological hurdles will be formi dable but will not limit what happens: once the basic ideas are available, the technology will be developed. The unique part of biotechnology will be to imagine what the possibilities are. There was a discussion in several of the groups on the problems of intro ducing a novel science into a social and economic context. What biotech nologists are learning on this matter is not novel, although that does not make it any less important or difficult. People in the development of elec tronics and computers, in the pharmaceutical industry, and in many other types of industry that have grown from university research have had to face these problems in the past. It is the old situation of having to reinvent the wheel again and again. There is one aspect on which biotechnology seems to have handled this inherent difficulty better than some of our predecessor technologies: the people in the biotechnology companies by and large take a rather academic approach to free communication with one another at meetings such as this and open publication of many of their basic findings in the literature. This seems unique and certainly is different from the experience of the recent Silicone Valley Industry, which in other ways tries to emulate an academic environment, but not in open and free publication.* **Official Gazette of the United States Patent and Trademark Office Trademarks Emerging Trends in Plant Pathology** *Springer Nature This book offers a comprehensive guide to the identification, detection, characterization, classification and management of plant pathogens and other beneficial microbes in agriculture. The science of plant pathology is a dynamic field and, given the growing interest in sustainable agricultural practices, plant disease management has also gained importance. Further, there has been a shift from traditional chemical-based methods to eco-friendly integrated disease management strategies with a greater focus on bio-control and other eco-friendly technologies. This book provides a comprehensive and timely account of latest concepts and advances in the field of plant pathology, including detection and diagnosis, host resistance, disease forecasting and plant biotechnological approaches. Accordingly, it will be of great interest to academics and all stakeholders working in the fields of plant pathology, microbiology, biotechnology, plant breeding, and other life sciences.* **Color Illustration of Diagnosis and Control for Modern Sugarcane Diseases, Pests, and Weeds** *Springer This book systematically presents 40 pests, 7 natural pest enemies, and 20 diseases and weeds commonly encountered in sugarcane production, combining clear colour photos with detailed scientific descriptions. It covers a range of related topics, including morphological identification, habits and frequency of occurrence, prevention and control measures, symptom identification, characteristics of infections and epidemics, parasitic (predator) characteristics, ways of utilising natural pest enemies, main species and distribution, fluctuation in the field, and chemical control of weeds. With novel content presented in simple, straightforward language, the book provides a valuable reference guide for scientific researchers, educators and industrial practitioners, as well as students and advisers at agricultural universities.* **Quantitative Genetics, Genomics and Plant Breeding, 2nd Edition** *CABI This book presents state-of-the-art, authoritative chapters on contemporary issues in the broad areas of quantitative genetics, genomics and plant breeding. Section 1 (Chapters 2 to 12) emphasizes the application of genomics, and genome and epigenome editing techniques, in plant breeding; bioinformatics; quantitative trait loci mapping; and the latest approaches of examining and exploiting genotype-environment interactions. Section 2 (Chapters 13 to 20) represents the intersection of breeding, genetics and genomics. This section describes the use of cutting-edge molecular breeding and quantitative genetics techniques in wheat, rice, maize, root and tuber crops and pearl millet. Overall, the book focuses on using genomic information to help evaluate traits that can combat biotic/abiotic stresses, genome-wide association mapping, high-throughput genotyping/phenotyping, biofortification, use of big data, orphan crops, and gene editing techniques. The examples featured are taken from across crop science research and cover a wide geographical base.* **Plant Breeding Abstracts Globalizing Industrial Research and Development Agricultural Biodiversity and Biotechnology in Economic Development** *Springer Science & Business Media This volume summarizes the current state of knowledge in the economic literature of management of agricultural biotechnology and biodiversity in agricultural and economic development. It identifies key issues confronting policy makers in managing biodiversity and biotechnology and provides a broad, multi-disciplinary analysis of the linkage between the two. It is especially innovative in its use of plant genetic resource management as the basis for is analysis.*