

About Icrisat Core

Eventually, you will entirely discover a supplementary experience and attainment by spending more cash. yet when? reach you bow to that you require to acquire those every needs in the same way as having significantly cash? Why dont you attempt to acquire something basic in the beginning? Thats something that will guide you to comprehend even more a propos the globe, experience, some places, next history, amusement, and a lot more?

It is your totally own time to operate reviewing habit. along with guides you could enjoy now is **About Icrisat Core** below.

The Peanut Genome -
Rajeev K. Varshney
2017-12-16

This book presents the current state of the art in peanut genomics, focusing particularly on the latest genomic findings, tools and strategies employed in genome sequencing, transcriptomes and analysis, availability of public and private genomic resources, and ways to maximize the use of this information in peanut breeding programs.

Further, it demonstrates how advances in plant genomics can be used to improve crop breeding. The peanut or groundnut (*Arachis hypogaea* L. Millsp) is a globally important grain legume and oilseed crop, cultivated in over 100 countries and consumed in the form of roasted seeds, oil and confectionary in nearly every country on Earth. The peanut contributes towards achieving food and

nutritional security, in addition to financial security through income generation; as such, it is also vital to the livelihood of the poor in the developing world. There have been significant advances in peanut research, especially in the last five years, including sequencing the genome of both diploid progenitors, and the availability of tremendous transcriptome resources, large-scale genomic variations that can be used as genetic markers, genetic populations (bi- and multiparent populations and germplasm sets), marker-trait associations and molecular breeding products. The immediate availability of the genome sequence for tetraploid cultivated peanuts is the most essential genomic resource for achieving a deeper understanding of peanut traits and their use in breeding programs.

Integrated Watershed Management in Rainfed Agriculture - Suhas P. Wani

2011-09-16

This book provides a comprehensive presentation of the realization of improved rainfed agriculture yield in semi-arid and dry land areas. The incentive of watershed programs is to increase the return on investment with over 20% for 65% of the projects that are currently underperforming. Besides techniques to improve the livelihood of the many small *Genetics, Genomics and Breeding of Peanuts* - Nalini Mallikarjuna 2014-05-15 Peanut, an amphidiploid, is an important food and oil crop and has an interesting evolutionary history. This book provides a glimpse of the advances in genetic resources and genomics research of peanut made during the last decade. It contains an overview of germplasm, advances in genetic and genomic resources, genetic and trait mapping, proteomic and transcriptomic analyses, functional and comparative

genomics studies, and molecular breeding applications. This book should prove useful to students, teachers, and young researchers as a ready reference to the latest information on peanut genetics and genomics.

Enhancing Smallholder Farmers' Access to Seed of Improved Legume Varieties Through Multi-stakeholder Platforms - Essegbemon Akpo 2021-01-11

This open access book shares the experiences of Tropical Legumes III (TLIII) project in facilitating access to seed of improved legume varieties to smallholder farmers through innovation platforms. It highlights practices and guiding principles implemented in eight developing countries of sub-Saharan Africa and South Asia. This book details key processes that respective teams employed to create an innovation space that delivers seed, other inputs, knowledge and financial services to

agricultural communities and most importantly, the underserved farmers in remote areas of the drylands. It offers valuable insights into the pathway to establishing, promoting and operating innovation platforms to enhance the performance and competitiveness of legume crops' value chains, and addresses critical issues that must be considered to make innovation platforms more sustainable and attractive to beneficiaries. The book offers a wealth of practical insights for development workers, technical staff, and project managers. This publication is all about TLIII community of practice. It will definitely inspire other development workers and scientists to share their own experiences for others to learn from.

Genetic and Genomic Resources of Grain Legume Improvement - H. Thomas Stalker 2013-07-18
The genus *Arachis* has 80 diploid, aneuploid and

tetraploid species that have been separated into nine sections. The cultivated peanut *Arachis hypogaea* L. is an allotetraploid that originated from the two diploids in section *Arachis*, and there has been no apparent introgression from related wild species since its origin. Systematic acquisition of wild and cultivated species began in the 1960s and has resulted in large collections of both *Arachis* species and *A. hypogaea*. However, additional germplasm is needed to fill in gaps for several *A. hypogaea* botanical varieties, and large areas in South America remain unexplored for *Arachis* species. The cultivated germplasm collection has been evaluated for several diseases, but many useful traits have not been assessed in the germplasm collections. Significantly higher levels of disease and insect resistances are found in the *Arachis* species, but

introgression is difficult and very slow due to ploidy and genomic differentiation. Progress has been made in recent years for utilizing wild species genetic resources, including development of several cultivars.

Pigeonpea Variety ICPL 8863
- 1993

Smart Plant Breeding for Field Crops in Post-genomics Era - Devender

Sharma 2023-04-28

This book emphasizes on cutting-edge next-generation smart plant breeding approaches for maximizing the use of genomic resources generated by high-throughput genomics in the post-genomic era. Through this book the readers would learn about the recent development in the genomic approaches such as genotype by sequencing (GBS) for genomic analysis (SNPs, Single Nucleotide Polymorphism), whole-genome re-sequencing (WGRS) and RNAseq for

transcriptomic analysis (DEGs, Differentially Expressed Genes). To maximize the genetic gains in the cereal/food crops, the book covers topics on transgenic breeding, genome editing, high-throughput phenotyping, reliable/precision phenotyping and genomic information-based analysis. In the era of climate change and the ever-increasing population, food security and nutritional security are the primary concern of plant breeders, growers, and policymakers to address the UN's sustainable development goals. Chapters of this book cohere around these goals and covers techniques such as (QTL mapping, association studies, candidate gene identification), omics, RNAi [through micro RNA (miRNA), small interfering RNA (siRNA) and artificial micro RNA (amiRNA)]. It also covers other genomic techniques like antisense technology, genome editing

(CRISPR/cas9, base editing) and epigenomics that assist the crop improvement programmes to fulfil the UNs sustainable development goals. It explores the influence of rapidly available sequencing data assisting in the next generation breeding programmes. This volume is a productive resource for the students, researchers, scientists, teachers, public and private sector stakeholders involved in the genetic enhancement of cereal crops.

Oil Crops - Johann Vollmann
2009-09-18

When one is privileged to participate long enough in a professional capacity, certain trends may be observed in the dynamics of how challenges are met or how problems are solved. Agricultural research is no exception in view of how the plant sciences have moved forward in the past 30 years. For example, the once grand but now nearly forgotten art of whole plant physiology has given way almost

completely to the more sophisticated realm of molecular biology. What once was the American Society of Plant Physiologists' is now the American Society of Plant Molecular Biology; a democratic decision to indemnify efforts to go beyond the limits of the classical science and actually begin to understand the underlying biological basis for genetic regulation of metabolic mechanisms in plants. Yet, as new technologies open windows of light on the inner workings of biological processes, one might reminisce with faint nostalgia on days long past when the artisans of plant physiology, biochemistry, analytical chemistry and other scientific disciplines ebbed and waned in prominence. No intentional reference is made here regarding Darwinism; the plant sciences always have been extremely competitive. Technology is pivotal. Those

who develop and/or implement innovative concepts typically are regarded as leaders in their respective fields. Each positive incremental step helps bring recognition and the impetus to push a scientific discipline forward with timely approaches to address relevant opportunities.

Agricultural Research Management - G.

Loebenstein 2007-09-04

Quite simply, this is required reading for anyone involved in managing agricultural research. With a wealth of practical solutions and advice, it offers a how-to guide for managers as well as highlighting the differences in the way that different nations approach this key area of research – one of the most widespread forms of inquiry in the world. The lessons that can be learned from this brilliant study apply in equal measure to developed and developing nations.

Oilseeds - Chittaranjan Kole

2007-05-05

Part of the seven-volume series Genome Mapping and Molecular Breeding in Plants, the volume Oilseeds is devoted to oil-producing field crops such as soybeans, oilseed rape, peanuts, sunflowers, Indian mustard, Brassica rapa, black mustard and flax.

While the grouping of economic plants is conventionally based on their agricultural purposes, several crops covered in this volume have other uses besides yielding oils.

Brassica rapa is also used as a vegetable, the sunflower as an ornamental, and flax as a fibre crop. Black mustard, which is used as a condiment but is genetically close to other Brassica species, is also included here.

Genetic Resources, Chromosome Engineering, and Crop Improvement -

Ram J. Singh 2006-11-02

Summarizing landmark research, Volume 4 of this essential series furnishes

information on the availability of germplasm resources that breeders can exploit for producing high-yielding oilseed crop varieties. Written by leading international experts, this volume presents the most up-to-date information on employing genetic resources to increas

Cash Crops - P.M.

Priyadarshan 2021-10-18

Cash crops are grown and sold for monetary gain and not necessarily for sustenance. They include coffee, tea, coconut, cotton, jute, groundnut, castor, linseed, cocoa, rubber, cassava, soybean, sweet potato, potato, wheat, corn and teff. While some of these crops have been improved for realizing yield potential, breeding of many of them is still in infancy.

Crops that underwent rigorous breeding have eventually lost much of the diversity due to extensive cultivation with a few improved varieties and the diversity in less bred species

is to be conserved. Over the past years, scholars and policy makers have become increasingly aware of the short and long-run impact of climatic factors on economic, food security, social and political outcomes . Genetic diversity, natural and induced, is much needed for the future generations to sustain food production with more climate resilient crops. In contrast, crop uniformity produced across the farm fields in the form of improved varieties is genetically vulnerable to biotic and abiotic stresses. Thus, it is essential and challenging to address the issue of compromising between maximizing crop yield under a given set of conditions and minimizing the risk of crop failure when conditions change. Cash crops are grown in an array of climatic conditions. Many of the world's poor still live in rural areas. Many are subsistence farmers, operating very small farms

using very little agricultural inputs for achieving marketable outputs. Conserving the diversity of these crops and addressing all issues of crop culture through modern tools of biotechnology and genomics is a real challenge. We believe the focus of this book is to fill an unmet need of this and other grower communities by providing the necessary knowledge, albeit indirectly via the academics, to manage the risks of cash crops breeding through managing genetic diversity.

Genetic and Genomic Resources of Grain Legume Improvement - Shivali Sharma 2013-07-18

Chickpea is an important protein-rich crop with considerable diversity present among 44 annual Cicer species. A large collection of chickpea germplasm including wild Cicer species has been conserved in different gene banks globally. However, the effective and efficient

utilization of these resources is required to develop new cultivars with a broad genetic base. Using core and mini-core collections, chickpea researchers have identified diverse germplasm possessing various beneficial traits that are now being used in chickpea breeding. Further, for chickpea improvement, the genus *Cicer* harbours alleles/genes for tolerance/resistance to various abiotic and biotic stresses as well as for agronomic and nutrition-related traits. Recent advances in plant biotechnology have resulted in developing large number of markers specific to chickpea in addition to technological breakthrough in developing high-throughput genotyping platforms for unlocking the genetic potential available in germplasm collections.

Genetics and Genomics of Setaria - Andrew Doust
2016-12-19
Setaria viridis and *S.italica*

make up a model grass system to investigate C4 photosynthesis, cell wall biosynthesis, responses to drought, herbicide, and other environmental stressors, genome dynamics, developmental genetics and morphology, and interactions with microorganisms. *Setaria viridis* (green foxtail) is one of the world's most widespread weeds, and its small size, native variation, rapidly burgeoning genetic and genomic resources, and transformability are making it the system of choice for both basic research and its translation into crop improvement. Its domesticated variant, *S. italica* (foxtail millet), is a drought-hardy cereal grown in China, India and Africa, and new breeding techniques show great potential for improving yields and nutrition for drought-prone regions. This book brings together for the first time evolutionary, genomic, genetic, and

morphological analyses, together with protocols for growing and transforming *Setaria*, and approaches to high throughput genotyping and candidate gene analysis. Authors include major *Setaria* researchers from both the USA and overseas.

Sorghum Molecular Breeding

- R. Madhusudhana

2015-08-20

This book provides an up-to-date overview of international research work on sorghum. Its comprehensive coverage of our current understanding of transgenic development in sorghum and the strategies that are being applied in molecular breeding make this book unique. Important areas such as genetic diversity, QTL mapping, heterosis prediction, genomic and bioinformatics resources, post-genome sequencing developments, molecular markers development using bioinformatics tools, genetic transformation and

transgenic research are also addressed. The availability of the genome sequence along with other recent developments in sequencing and genotyping technologies has resulted in considerable advances in the area of sorghum genomics. These in turn have led to the generation of a large number of DNA-based markers and resulted in the identification and fine mapping of QTL associated with grain yield, its component traits, biotic and abiotic stress tolerance as well as grain quality traits in sorghum. Though a large volume of information has accumulated over the years, especially following the sequencing of the sorghum genome, until now it was not available in a single reference resource. This book fills that gap by documenting advances in the genomics and transgenic research in sorghum and presenting critical reviews and future prospects. "Sorghum

Molecular Breeding” is an essential guide for students, researchers and managers who are involved in the area of molecular breeding and transgenic research in sorghum and plant biologists in general.

Chickpea Breeding and Management - Shyam S. Yadav 2007

The chickpea is an ancient crop that is still important in both developed and developing nations. This authoritative account by international experts covers all aspects of chickpea breeding and management, and the integrated pest management and biotechnology applications that are important to its improvement. With topics covered including origin and taxonomy, ecology, distribution and genetics, this book combines the many and varied research issues impacting on production and utilization of the chickpea crop on its journey from paddock to plate.

Sustainable Agriculture and New Biotechnologies - Nouredine Benkeblia 2016-04-19

Taking a broad and innovative informational approach, *Sustainable Agriculture and New Biotechnologies* is the first book to apply omic technologies to address issues related to understanding and improving agricultural sustainability in the food production process. The transformation from industrial to sustainable agriculture is discussed within the

Nutritional Quality Improvement in Plants - Pawan Kumar Jaiwal 2019-11-01

This book presents a detailed overview and critical evaluation of recent advances and remaining challenges in improving nutritional quality and/or avoiding the accumulation of undesirable substances in plants using a variety of strategies based on modern

biological tools and techniques. Each review chapter provides an authoritative and insightful account of the various aspects of nutritional enhancement of plants. In the course of the last two decades, several food crops rich in macro- and micronutrients have been developed to improve health and protect a large section of the populace in developing countries from chronic diseases. Providing extensive information on these developments, this book offers a valuable resource for all researchers, students and industrialists working in agriculture, the plant sciences, agronomy, horticulture, biotechnology, food and nutrition, and the soil and environmental sciences.

Pearl millet and sorghum improvement in India -

Carl E. Pray, Latha Nagarajan 2009

The spread of modern varieties and hybrids of pearl millet and sorghum

that began in the mid-1960s has had an important impact on small farmer welfare in India. The success and sustainability of these improved cultivars resulted from three types (or periods) of interventions by the Indian government: (1) increased investments in crop improvement by national and international agricultural systems during the 1970s; (2) development of efficient seed systems, with the gradual inclusion of the private sector in the 1980s; and (3) the liberalization of the Indian seed industry in the late 1990s. In addition to increased overall production levels of sorghum and millet, there have been substantial yield gains in semi-arid regions as well as improved cultivars adopted in some of the poorest areas of India. The innovations of new, hybrid technology have not been limited to the Green Revolution crops; they have also had significant impact on the

productivity of small-farmer households growing dryland crops, such as millet and sorghum in India.

Proven Successes in Agricultural Development - David J. Spielman
2010-01-01

The world has made enormous progress in the past 50 years toward eliminating hunger and malnutrition. While, in 1960, roughly 30 percent of the world's population suffered from hunger and malnutrition, today less than 20 percent do. Some five billion people now have enough food to live healthy, productive lives. Agricultural development has contributed significantly to these gains by increasing food supplies, reducing food prices, and creating new income and employment opportunities for some of the world's poorest people. This book examines where, why, and how past interventions in agricultural development have succeeded. It carefully

reviews the policies, programs, and investments in agricultural development that have reduced hunger and poverty across Africa, Asia, and Latin America over the past half century. The 19 successes included here are described in in-depth case studies that synthesize the evidence on the intervention's impact on agricultural productivity and food security, evaluate the rigor with which the evidence was collected, and assess the tradeoffs inherent in each success. Together, these chapters provide evidence of "what works" in agricultural development.

Legumes for Global Food Security - Jose C. Jimenez-Lopez
2020-08-12

Plant Breeding Reviews - Jules Janick
2011-10-07
Plant Breeding Reviews presents state-of-the-art reviews on plant genetics and the breeding of all types of crops by both traditional means and molecular

methods. Many of the crops widely grown today stem from a very narrow genetic base; understanding and preserving crop genetic resources is vital to the security of food systems worldwide. The emphasis of the series is on methodology, a fundamental understanding of crop genetics, and applications to major crops. The series is sponsored by the American Society for Horticultural Science and appears in the form of one or two volumes per year.

Biodiversity in Agriculture - Jack Rodney Harlan
2012-02-23

Brings together research from a range of fields to address key questions relating to agriculture: its origins and long-term sustainability.

Technologies in Plant Biotechnology and Breeding of Field Crops - Kamaluddin
2022-10-05

This edited book is a comprehensive compilation of principles, conventional

and molecular approaches used to develop improved varieties and hybrids of major crops in light of their origin, evolution, taxonomy, production and productivity and need by human civilization. The book covers breeding prospects of all important food and commercial crops. It highlights the importance of breeding tools and techniques in ensuring food security. This book is of interest to teachers, researchers, agriculture scientists, capacity builders, and policymakers. Also, the book serves as additional reading material for undergraduate and graduate students of agriculture, soil science, and environmental sciences. National and international agricultural scientists and policymakers will find this book useful.

Molecular Breeding in Wheat, Maize and Sorghum - Mohammad Anwar Hossain
2021-06-30

The global population is projected to reach almost 10

billion by 2050, and food and feed production will need to increase by 70%. Wheat, maize and sorghum are three key cereals which provide nutrition for the majority of the world's population. Their production is affected by various abiotic stresses which cause significant yield losses. The effects of climate change also increase the frequency and severity of such abiotic stresses. Molecular breeding technologies offer real hope for improving crop yields. Although significant progress has been made over the last few years, there is still a need to bridge the large gap between yields in the most favorable and most stressful conditions.

Biology and Breeding of Food Legumes - Aditya Pratap 2011

Food legumes are important constituents of the human diet and animal feed where they are crucial to a balanced diet, supplying high quality proteins. These

crops also play an important role in low-input agricultural production systems by fixing atmospheric nitrogen. Despite systematic and continuous breeding efforts through conventional methods, substantial genetic gains have not been achieved. With the rise in demand for food legumes/pulses and increased market value of these crops, research has focused on increasing production and improving the quality of pulses for both edible and industrial purposes. "Biology and Breeding of Food Legumes" covers the history, origin and evolution, botany, breeding objectives and procedures, nutritional improvement, industrial uses and post-harvest technology and also recent developments made through biotechnological intervention.

Genomics of Tropical Crop Plants - Paul H. Moore
2008-01-03

For a long time there has

been a critical need for a book to assess the genomics of tropical plant species. At last, here it is. This brilliant book covers recent progress on genome research in tropical crop plants, including the development of molecular markers, and many more subjects. The first section provides information on crops relevant to tropical agriculture. The book then moves on to lay out summaries of genomic research for the most important tropical crop plant species.

Food Security and Climate Change - Shyam Singh Yadav 2019-02-26

This book looks at the current state of food security and climate change, discusses the issues that are affecting them, and the actions required to ensure there will be enough food for the future. By casting a much wider net than most previously published books—to include select novel approaches,

techniques, genes from crop diverse genetic resources or relatives—it shows how agriculture may still be able to triumph over the very real threat of climate change. Food Security and Climate Change integrates various challenges posed by changing climate, increasing population, sustainability in crop productivity, demand for food grains to sustain food security, and the anticipated future need for nutritious quality foods. It looks at individual factors resulting from climate change, including rising carbon emission levels, increasing temperature, disruptions in rainfall patterns, drought, and their combined impact on planting environments, crop adaptation, production, and management. The role of plant genetic resources, breeding technologies of crops, biotechnologies, and integrated farm management and agronomic good practices are included, and demonstrate the

significance of food grain production in achieving food security during climate change. Food Security and Climate Change is an excellent book for researchers, scientists, students, and policy makers involved in agricultural science and technology, as well as those concerned with the effects of climate change on our environment and the food industry.

Grain Legumes - Antonio M. De Ron 2015-08-27

This book is devoted to grain legumes and include eight chapters devoted to the breeding of specific grain legume crops and five general chapters dealing with important topics which are common to most of the species in focus. Soybean is not included in the book as it is commonly considered an oil crop more than a grain legume and is included in the Oil Crops Volume of the Handbook of Plant Breeding. Legume species belong to the Fabaceae family and are characterized

by their fruit, usually called pod. Several species of this family were domesticated by humans, such as soybean, common bean, faba bean, pea, chickpea, lentil, peanut, or cowpea. Some of these species are of great relevance as human and animal food. Food legumes are consumed either by their immature pod or their dry seeds, which have a high protein content.

Globally, grain legumes are the most relevant source of plant protein, especially in many countries of Africa and Latin America, but there are some constraints in their production, such as a poor adaptation, pest and diseases and unstable yield. Current research trends in Legumes are focused on new methodologies involving genetic and omic studies, as well as new approaches to the genetic improvement of these species, including the relationships with their symbiotic rhizobia.

Cereal Nitrogen Fixation -

1986

Welcome address, Inaugural address, Cereal nitrogen fixation: problems and potentialities, Cereal nitrogen fixation research under the BNF coordinated project of the ICAR, Associative biological nitrogen fixation research at haryana agricultural university, Studies on the interactions between Azospirillum and pearl millet, response of pearl millet to inoculation with Azospirillum brasilense at varying levels of nitrogen, Rhizosphere ecology and nitrogen fixation of Azospirillum in pearl millet, Response of sorghum and Pearl Millet Genotypes to Azospirillum and Azotobacter inoculations, Research on cereal nitrogen fixation at ICRISAT, Yield and nitrogen gains of sorghum as influenced by Azospirillum brasilense, Azotobacter inoculation: Nitrogen economy and response of sorghum CSH 1, Response of sorghum

cultivars to inoculation with azospirillum, Nitrogen transformations by A. brasilense strain 12S form sorghum roots, Effect of Azotobacter chroococcoom and Azospirillum brasilense inoculations and nitrogen on yields of sorghum, Maize, Pearl Millet, and Wheat, Root-associated nitrogen fixation in finger millet, Heterotrophic nitrogen fixation as influenced by fertilizers in rice-soil systems, Effect of certain organic amendments and potassium on the bacterization of ride with Azotobacter Chroococcum, Studies on vesicular arbuscular mycorrhiza in cereals at ICRISAT Center(abstract only), The use of ELISA (Enzyme-linked immunosorbent assay) for quality assessment of bacterial inoculants(abstract only).

Fundamentals of Field Crop Breeding - Devendra Kumar Yadava 2022-05-05

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.

Annual report of the International Institute of Tropical Agriculture - International Institute of Tropical Agriculture 1990

Plant Breeding Reviews, Volume 41 - Irwin Goldman
2018-03-27

Plant Breeding Reviews presents state-of-the-art reviews on plant genetics and the breeding of all types of crops by both traditional means and molecular methods. Many of the crops widely grown today stem from a very narrow genetic base; understanding and preserving crop genetic resources is vital to the security of food systems worldwide. The emphasis of the series is on methodology, a fundamental

understanding of crop genetics, and applications to major crops.

Core Journals in Plant Breeding - V. Venkatesan 1989

Sorghum in the 21st Century: Food - Fodder - Feed - Fuel for a Rapidly Changing World - Vilas A.

Tonapi 2021-01-04

Sorghum is the most important cereal crop grown in the semi-arid tropics (SAT) of Africa, Asia, Australia and Americas for food, feed, fodder and fuel. It is the fifth most important cereal crop globally after rice, wheat, maize and barley, and plays a major role in global food security. Sorghum is consumed in different forms for various end-uses. Its grain is mostly used directly for food purposes. After the release of the proceedings of two international symposia in the form of books "Sorghum in Seventies" and "Sorghum in Eighties", global sorghum research and development

have not been documented at one place. Of course, few books on sorghum have been released that focus on specific issues/research areas, but comprehensive review of all aspects of recent development in different areas of sorghum science has not been compiled in the form a single book. This book is intended to fill in a void to bridge the gap by documenting all aspects of recent research and development in sorghum encompassing all the progress made, milestones achieved across globe in genetic diversity assessment, crop improvement and production, strategies for high yield, biotic and abiotic stress resistance, grain and stover quality aspects, storage, nutrition, health and industrial applications, biotechnological applications to increase production, including regional and global policy perspectives and

developmental needs. This book will be an institutional effort to compile all the latest information generated in research and development in sorghum across the globe at one place.

Genetic and Genomic Resources of Grain Legume Improvement - Mohar Singh
2013-07-18

Grain legumes, including common-bean, chickpea, pigeonpea, pea, cowpea, lentil and others, form important constituents of global diets, both vegetarian and non-vegetarian. Despite this significant role, global production has increased only marginally in the past 50 years. The slow production growth, along with a rising human population and improved buying capacity has substantially reduced the per capita availability of food legumes. Changes in environmental climate have also had significant impact on production, creating a need to identify stable

donors among genetic resources for environmentally robust genes and designing crops resilient to climate change. Genetic and Genomic Resources of Grain Legume Improvement is the first book to bring together the latest resources in plant genetics and genomics to facilitate the identification of specific germplasm, trait mapping and allele mining to more effectively develop biotic and abiotic-stress-resistant grains. This book will be an invaluable resource for researchers, crop biologists and students working with crop development. Explores origin, distribution and diversity of grain legumes Presents information on germplasm collection, evaluation and maintenance Offers insight into pre-breeding/germplasm enhancement efforts Integrates genomic and genetic resources in crop improvement Internationally contributed work

The Sorghum Genome -

Sujay Rakshit 2017-01-18

This book provides insights into the current state of sorghum genomics. It particularly focuses on the tools and strategies employed in genome sequencing and analysis, public and private genomic resources and how all this information is leading to direct outcomes for plant breeders. The advent of affordable whole genome sequencing in combination with existing cereal functional genomics data has enabled the leveraging of the significant novel diversity available in sorghum, the genome of which was fully sequenced in 2009, providing an unmatched resource for the genetic improvement of sorghum and other grass species. Cultivated grain sorghum is a food and feed cereal crop adapted to hot and dry climates, and is a staple for 500 million of the world's poorest people. Globally, sorghum is also an

important source of animal feed and forage, an emerging biofuel crop and model for C4 grasses, particularly genetically complex sugarcane.

Peanuts - Thomas Stalker 2015-12-29

Peanuts: Genetics, Processing, and Utilization (Oilseed Monograph) presents innovations in crop productivity and processing technologies that help ensure global food security and high quality peanut products. The authors cover three central themes, modern breeding methods for development of agronomic varieties in the U.S., China, West Central Africa, and India, enhanced crop protection and quality through information from the peanut genome sequence, and state-of-the-art processing and manufacturing of products in market environments driven by consumer perception, legislation, and governmental policy. Discusses modern breeding

methods and genetically diverse resources for the development of agronomic varieties in the U.S., China, India, and West Central Africa Provides enhanced crop protection and quality through the application of information and genetic tools derived from analysis of the peanut genome sequence Includes state-of-art processing and manufacture of safe, nutritious, and flavorful food products

Plant Breeding Reviews - Jules Janick 2014-11-12
Plant Breeding Reviews presents state-of-the-art reviews on plant genetics and the breeding of all types of crops by both traditional means and molecular methods. Many of the crops widely grown today stem from a very narrow genetic base; understanding and preserving crop genetic resources is vital to the security of food systems worldwide. The emphasis of the series is on methodology, a fundamental

understanding of crop genetics, and applications to major crops. It is a serial title that appears in the form of one or two volumes per year.

Genetic and Genomic Resources for Grain Cereals Improvement - Mohar Singh 2015-11-10

Genetic and Genomic Resources For Cereals Improvement is the first book to bring together the latest available genetic resources and genomics to facilitate the identification of specific germplasm, trait mapping, and allele mining that are needed to more effectively develop biotic and abiotic-stress-resistant grains. As grain cereals, including rice, wheat, maize, barley, sorghum, and millets constitute the bulk of global diets, both of vegetarian and non-vegetarian, there is a greater need for further genetic improvement, breeding, and plant genetic resources to secure the future food supply. This book is an invaluable

resource for researchers, crop biologists, and students working with crop development and the changes in environmental climate that have had significant impact on crop production. It includes the latest information on tactics that ensure that environmentally robust genes and crops resilient to climate change are

identified and preserved. Provides a single-volume resource on the global research work on grain cereals genetics and genomics Presents information for effectively managing and utilizing the genetic resources of this core food supply source Includes coverage of rice, wheat, maize, barley, sorghum, and pearl, finger and foxtail millets