Sugar Cane Engineering Book

Bioenergy for Sustainable Development and International Competitiveness
A Manual for Cane Sugar Manufacturers and Their Chemists
Fuel Ethanol Production from Sugarcane
Handbook of Cane Sugar Engineering
Sugarcane
Expanding Production in Latin America and Africa
Biotechnology to Enhance Sugarcane Productivity and Stress Tolerance
The Cuba Reader
A Manual for the Design and Operation of Sugar Refining Facilities
Spencer-Meade Cane Sugar Handbook
Agricultural Production, Bioenergy and Ethanol
Handbook of Cane Sugar Engineering
Biochemical Engineering and Biotechnology
Introduction to Cane Sugar Technology
Cane Sugar Engineering
Chemistry and Processing of Sugarbeet and Sugarcane
Manufacture and Refining of Raw Cane Sugar
Genetics, Genomics and Breeding of Sugarcane
The Complete Book on Sugarcane Processing and By-Products of Molasses (with Analysis of Sugar, Syrup and Molasses)
Beet and Cane Sugar Manufacture
Advances in Sugarcane Biorefinery
Practical Design and Theory
The Role of Sugar Cane in Africa
Agribusiness as the Future of Agriculture
Unit Operations in Cane Sugar Production
Sugarcane-based Biofuels and Bioproducts
Handbook of Sugar Refining
Sugar Cane Cultivation and Management
A Manual for Cane Sugar Manufacturers and Their Chemists
Cogeneration in the Cane Sugar Industry
Cane Sugar Engineering
Sugarcane
Sustainable Sugarcane Production
Handbook of Cane Sugar Engineering
Raising Cane
Proceedings of the Symposium on the Chemistry and Processing of Sugarbeet, Denver, Colorado, April 6, 1987 and the Symposium on the Chemistry and Processing of Sugarcane, New Orleans, Louisiana, September 3-4, 1987
The Political Economy Of Sugar In Western India
Sugar Technology
Handbook of Cane Sugar Engineering

LUCERO REILLY

Bioenergy for Sustainable Development and International Competitiveness Elsevier
Introduction to Cane Sugar Technology provides a concise introduction to sugar technology; more specifically, cane sugar technology up to the production of raw sugar. Being intended originally for use in a post-graduate university course, the book assumes a knowledge of elementary chemical engineering as well as adequate knowledge of chemistry. In the field of sugar manufacture itself, the object of the book is to place more emphasis on aspects which are not adequately covered elsewhere. In accordance with this objective, attention has been concentrated mainly on processes and operation of the factory, and description of equipment is made as brief as possible, with numerous references to other books where more detail is available. The emphasis on operation rather than equipment has also been prompted by observation of quite a few factories in different countries where good equipment is giving less than its proper performance due to inefficient operation and supervision. The book is confined to the raw sugar process, which has been the author's main interest. Refining is discussed only to the extent required to explain refiners' requirements concerning quality of raw sugar.
A Manual for Cane Sugar Manufacturers and Their Chemists John Wiley & Sons
This book offers a broad understanding of bioethanol production from sugarcane, although a few other substrates, except corn, will also be mentioned. The 10 chapters are grouped in five sections. The Fuel Ethanol Production from Sugarcane in Brazil section consists of two chapters dealing with the first-generation ethanol Brazilian industrial process. The Strategies for Sugarcane Bagasse Pretreatment section deals with emerging physicochemical methods for biomass pretreatment, and the non-conventional biomass source for lignocellulosic ethanol production addresses the potential of weed biomass as alternative feedstock. In the Recent Approaches for Increasing Fermentation Efficiency of Lignocellulosic Ethanol section, potential and research progress using thermophile bacteria and yeasts is presented, taking advantage of microorganisms involved in consolidating or simultaneous hydrolysis and fermentation processes. Finally, the Recent Advances in Ethanol Fermentation section presents the use of cold plasma and hydrostatic pressure to increase ethanol production efficiency. Also in this section the use of metabolic-engineered autotrophic cyanobacteria to produce ethanol from carbon dioxide is mentioned.
Fuel Ethanol Production from Sugarcane Routledge
Biochemical Engineering and Biotechnology, 2nd Edition, outlines the principles of biochemical processes and explains their use in the manufacturing of every day products. The author uses a diirect approach that should be very useful for students in following the concepts and practical applications. This book is unique in having many solved problems, case studies, examples and demonstrations of detailed experiments, with simple design equations and required calculations. Covers major concepts of biochemical engineering and biotechnology, including applications in bioprocesses, fermentation technologies, enzymatic processes, and membrane separations, amongst others Accessible to chemical engineering students who need to both learn, and apply, biological knowledge in engineering principals Includes solved problems, examples, and demonstrations of detailed experiments with simple design equations and all required calculations Offers many graphs that present actual experimental data, figures, and tables, along with explanations
Handbook of Cane Sugar Engineering Elsevier
In print for over a century, it is the definitive guide to cane sugar processing, treatment and analysis. This edition expands coverage of new developments during the past decade--specialty sugars, plant maintenance, automation, computer control systems and the latest in instrumental analysis for the sugar industry.
Sugarcane Elsevier
Handbook of Cane Sugar Engineering focuses on the technologies, equipment, methodologies, and processes involved in cane sugar engineering. The handbook first underscores the delivery, unloading, and handling of cane, cane carrier and knives, and tramp iron separators. The text then examines crushers, shredders, combinations of cane preparators, and feeding of mills and conveying bagasse. The manuscript takes a look at roller grooving, pressures in milling, mill speeds and capacity, and mill settings. Topics include setting of feed and delivery openings and trash plate, factors influencing capacity, formula for capacity, fiber loading, tonnage records, linear speed and speed of rotation, sequence of speeds, hydraulic pressure, and types of roller grooving. The book then elaborates on electric and turbine mill drives, mill gearing, construction of mills, extraction, milling control, purification of juice, filtration, evaporation, sugar boiling, and centrifugal separation. The handbook is a valuable source of data for engineers involved in sugar cane engineering.
Expanding Production in Latin America and Africa Routledge
Sugarcane: Agricultural Production, Bioenergy and Ethanol explores this vital source for "green" biofuel from the breeding and care of the plant all the way through to its effective and efficient transformation into bioenergy. The book explores sugarcane's 40 year history as a fuel for cars, along with its impressive leaps in production and productivity that have created a robust global market. In addition, new prospects for the future are discussed as promising applications in agroenergy, whether for biofuels or bioelectricity, or for bagasse pellets as an alternative to firewood for home heating purposes are explored. Experts from around the world address these topics in this timely book as global warming continues to represent a major concern for both crop and green energy production. Focuses on sugarcane production and processing for bioenergy Provides a holistic approach to sugarcane’s potential – from the successful growth and harvest of the plant to the end-use product Presents important information for "green energy" options
John Wiley & Sons
Growing concerns about the impacts of climate change and dependence on fossil fuels have intensified interest in bioenergy from sugar cane and other crops, highlighting important linkages between energy, environment and development goals. This book focuses on Southern and Eastern Africa as regions with high potential for sugar cane and other energy crops. As regions characterised by severe poverty, the possibility to exploit a renewable energy resource offers valuable avenues for sustainable development and could support a more dynamic and competitive economy. It is shown that the bioenergy expansion will improve rural livelihoods, reduce costly energy imports, reduce GHG emissions, and offer new development paths.Drawing on international experience, particularly from Brazil and India, it is shown that harnessing this bioenergy and biomass potential will require significant increases in investment, technology transfer, and international cooperation. Because of its high efficiency, the authors argue that sugar cane should be viewed as a global resource for sustainable development and should command much greater focus and concerted policy action. Sugar cane is among the biomass resources that can avoid conflict with food security. Through an analysis of the agronomy and processing of sugar cane, economics and environmental impact, the chapters demonstrate that it offers a competitive and environmentally beneficial resource that can help to facilitate food and energy security within continuing economic development.
Biotechnology to Enhance Sugarcane Productivity and Stress Tolerance CRC Press
This volume is intended for reference by the commercial sugar cane grower. Disciplines are covered for the successful production of a sugar cane crop. A number of good books exist on field practices related to the growing of sugar cane. Two examples are R.P. Humbert's The Growing of Sugar Cane and Alex G. Alexander's Sugarcane Physiology. Volumes of technical papers, produced regularly by the International Society of Sugar Cane Technologists, are also a source of reference. Perhaps

foremost, local associations, such as the South African Sugar Technologists' Association, do excellent work in this regard. In my forty-five years of experience with the day-to-day problems of producing a satisfactory crop of sugar cane, deciding what should be done to produce such a crop was not straightforward. Although the literature dealing with specific subjects is extensive, I tried to consolidate some of the material to provide the man in the field with information, or an overview of the subject matter.

The Cuba Reader Routledge

This book offers comprehensive coverage of the design, analysis, and operational aspects of biomass gasification, the key technology enabling the production of biofuels from all viable sources--some examples being sugar cane and switchgrass. This versatile resource not only explains the basic principles of energy conversion systems, but also provides valuable insight into the design of biomass gasifiers. The author provides many worked out design problems, step-by-step design procedures and real data on commercially operating systems. After fossil fuels, biomass is the most widely used fuel in the world. Biomass resources show a considerable potential in the long term if residues are properly handled and dedicated energy crops are grown. Includes step-by-step design procedures and case studies for Biomass Gasification Provides worked process flow diagrams for gasifier design. Covers integration with other technologies (e.g. gas turbine, engine, fuel cells)

A Manual for the Design and Operation of Sugar Refining Facilities Handbook of Cane Sugar Engineering

The sugarcane crop, one of the most important crops commercially grown in about 115 countries of the world, faces a number of problems, such as low cane productivity, biotic and abiotic stresses, high cost of cultivation, postharvest losses, and low sugar recovery. This volume addresses these issues and provides a comprehensive account of the major advancements in sugarcane research. The book is compilation of recent achievements in sugarcane development and cultivation. It covers a number of improvements made in cane and sugar yield using both conventional and new biotechnological approaches by agricultural scientists and researchers. The comprehensive coverage includes sustainable sugarcane cultivation, development, and management of sugarcane production, covering farming and biotechnology, entomology, pathology, breeding, physiology, biotechnology, agronomy, seed production, and more. It also presents research on modern crop production methods in a comprehensive and easily understood manner. With chapters from expert researchers from internationally renowned institutes (primarily in India), the volume presents the latest information from the literature at the international level to make it usable to many agroecological regions of the world. It will be a valuable resource for agronomists, breeders, plant physiologists, farmers, and students of agricultural sciences.

Spencer-Meade Cane Sugar Handbook Elsevier

Gene Editing in Plants, Volume 149 aims to provide the reader with an up-to-date survey of cutting-edge research with gene editing tools and an overview of the implications of this research on the nutritional quality of fruits, vegetables and grains. New chapters in the updated volume include topics relating to Genome Engineering and Agriculture: Opportunities and Challenges, the Use of CRISPR/Cas9 for Crop Improvement in Maize and Soybean, the Use of Zinc-Finger Nucleases for Crop Improvement, Gene Editing in Polyploid Crops: Wheat, Camelina, Canola, Potato, Cotton, Peanut, Sugar Cane, and Citrus, and Gene Editing With TALEN and CRISPR/Cas in Rice. This ongoing serial contain contributions from leading scientists and researchers in the field of gene editing in plants who describe the results of their own research in this rapidly expanding area of science. Shows the importance of revolutionary gene editing technology on plant biology research and its application to agricultural production Provides insight into what may lie ahead in this rapidly expanding area of plant research and development Contains contributions from major leaders in the field of plant gene editing

Agricultural Production, Bioenergy and Ethanol Springer

This book provides a reference work on the design and operation of cane sugar manufacturing facilities. It covers cane sugar decolorization, filtration, evaporation and crystallization, centrifugation, drying, and packaging,

Handbook of Cane Sugar Engineering John Wiley & Sons

Like any book, this one is part of a dialogue. Over the years, I have asked thousands of questions, of myself and others, and tried to answer some. Out of all this discussion, a written pattern has grown. It is certainly not a definitive pattern. Among those whose words have been woven into it, there are many who might have fashioned it better. There are some who would have selected different colors and textures, or who might have preferred a totally different pattern. I am conscious of their voices and wish that I could adequately present them all. First and foremost are the voices of farmers and other villagers, whose experiences I have tried to understand and represent. A few of them will read this book and decide whether I learned anything from all their patient answers. If they were so inclined, they could tell more about the subject than I ever can.

Biochemical Engineering and Biotechnology Academic Press

Advances in Sugarcane Biorefinery: Technologies, Commercialization, Policy Issues and Paradigm Shift for Bioethanol and By-Products, by Chandel and Tomé, compiles the basic and applied information covering cane and biomass processing for sugar and ethanol production, as well as by-products utilization for improving the economy of sugarcane biorefineries. In this unique collection of 14 chapters, specialists in their field provide critical insights into several topics, review the current research, and discuss future progress in this research area. The book presents the most current advances in sugarcane biorefinery, including sugarcane crop cultivation, new sugarcane varieties, soil health, mechanization of crop, technical aspects of first and second generation ethanol production, economic analysis, life cycle assessment, biomass logistics and storage, co-generation of heat and electricity, process intensification and alternative by-products utilization. The book also explores the business ecosystem of sugarcane biorefineries, marketing analysis of ethanol demand and price dwindling patterns, aiming for a futuristic scenario. This book will be especially useful for scientists, researchers and technicians who are working in the area of biomass based biorefineries, as well as professionals in the sugar and alcohol industry. It also brings relevant content for policy makers, market analysts, agriculture scientists and managers. Presents technological updates on biomass processing, system biology, microbial fermentation, catalysis, regeneration and monitoring of renewable energy and recovery processes Includes topics on techno-economic analysis, life cycle assessment, sustainability, markets and policy Explores the future potential of biorefineries with zero or near zero waste, and the potential of valorization of all by-products, including alternatives to current applications and the management of a large amount of residues

Introduction to Cane Sugar Technology Elsevier

Handbook of Cane Sugar EngineeringElsevier

Cane Sugar Engineering Academic Press

Sugarcane is the most important plant source for sugar and alcohol production and is cultivated in more than 80 countries in tropical and subtropical areas. However, environmental factors negatively influence its yield and jeopardize the prospect to meet the increasing demand for sugar, other sugarcane derived by products and bioethanol. The development of stress tolerant plants is fundamental for the maintenance and increase of crop yields. Biotechnology to Enhance Sugarcane Productivity and Stress Tolerance provides a comprehensive account of both theoretical and practical aspects of sugarcane production. It contains extensive coverage of genome mapping and molecular breeding in sugarcane and presents the status of the elucidation and improvement of plant genomes of economic interest. Through 14 chapters written by eminent scientists with global influence, this book examines various methods for sugarcane improvement through biotechnology. The book focuses on genetic and physical mapping, positioning, cloning, and monitoring of desirable genes using biotechnological approaches for high sugarcane productivity and the development of stress tolerance. Additional information includes the bioengineering of sugarcane, procedures to boost productivity, genetics and assessments for resistance to drought and salinity, genetics for high yields, and various topics of research on sugarcane genetics. It serves as a detailed reference source for cane growers, sugar and sugarcane technologists, students, and professors.

Chemistry and Processing of Sugarbeet and Sugarcane ASIA PACIFIC BUSINESS PRESS Inc.

In recent years, there has been a rapid expansion of the growing of crops for use in bioenergy production rather than for food. This has been particularly the case for sugarcane in Latin America and Africa. This book examines the further potential in the context of the food versus fuel debate, and as a strategy for sustainable development. Detailed case studies of two countries, Colombia and Mozambique, are presented. These address the key issues such as the balance between food security and energy security, rural and land development policies, and feasibility and production models for expanding bioenergy. The authors then assess these issues in the context of broader sustainable development strategies, including implications for economics, employment generation, and the environment. The book will be of great interest to researchers and professionals in energy and agricultural development.

Manufacture and Refining of Raw Cane Sugar Springer Science & Business Media

The world of sugar production has undergone massive changes in the last decade which have resulted in the emergence of many technological changes as technologists strive to develop more efficient and cheaper processes. This is the first book to be published for several years which describes the current state of sugar technology. It presents the recent developments in beet and cane sugar manufacturing; describes the chemistry of sugar processing and products; and considers trends and future possibilities in sugar production systems and products. The book comprises two sections: beet and cane. The overview of the crop and the production systems that begins each section serves as a framework for the papers that follow. Several papers, i.e. those on sucrose chemistry - are relevant to both sugarcane and sugarbeet. The authors of the papers are all invited speakers well known in their respective fields. The book should be on the shelf of all sugarcane and sugarbeet factories and refiners around the world as well as those companies who are sugar users or who supply goods and services to the sugar industry. It can also be used as a text by universities offering training courses in sugar processing technology.

Genetics, Genomics and Breeding of Sugarcane Elsevier

The first all-in-one reference for the beet-sugar industry Beet-Sugar Handbook is a practical and concise reference fortechnologists, chemists, farmers, and research personnel involvedwith the beet-sugar industry. It covers: * Basics of beet-sugar technology * Sugarbeet farming * Sugarbeet processing * Laboratory methods of analysis The book also includes technologies that improve the operation andprofitability of the beet-sugar factories, such as: * Juice-softening process * Molasses-softening process * Molasses-desugaring process * Refining cane-raw sugar in a beet-sugar factory The book ends with a review of the following: * Environmental concerns of a beet-sugar factory * Basics of science related to sugar technology * Related tables for use in calculations Written in a conversational, engaging style, the book is userfriendly and practical in its presentation of relevant scientificand mathematical concepts for readers without a significantbackground in these areas. For ease of use, the book highlightsimportant notes, defines technical terms, and presents units inboth metric and British systems. Operating problem-solving relatedto all stations of sugarbeet processing, frequent practicalexamples, and given material/energy balances are other specialfeatures of this book.

The Complete Book on Sugarcane Processing and By-Products of Molasses (with Analysis of Sugar, Syrup and Molasses) Elsevier

The fast-growing sugarcane plant is a major source of sugar (sucrose) in tropical and sub-tropical regions. The high productivity of the plant also makes it a key target for use as an energy crop. The fiber of the plant is used to generate electricity and produce ethanol as a fuel.Sugarcane is a hybrid of two species, each of which is genetically c