Sugarcane

Sugarcane (Saccharum officinarum L.) is considered one of the major bioenergy crops grown globally. Thus, sugarcane research to improve sustainable production worldwide is a vital task of the scientific community, to address the increasing demands and needs for their products, especially biofuels. In this context, this book covers the most recent research areas related to sugarcane production and its applications. It is composed of 14 chapters, divided into 5 sections that highlight fundamental insights into the current research and technology on this crop. Sugarcane: Technology and Research intends to provide the reader with a comprehensive overview in technology, production, and applied and basic research of this bioenergy species, approaching the latest developments on varied topics related to this crop.

Sugarcane Biorefinery, Technology and Perspectives provides the reader with a current view of the global scenario of sugarcane biorefinery, launching a new expectation on this important crop from a chemical, energy and sustainability point-of-view. The book explores the existing biorefinery platforms that can be used to convert sugarcane to new high value added products. It also addresses one of today's most controversial issues involving energy cane, in addition to the dilemma "sugar cane vs. food vs. the environment", adding even more value in a culture that is already a symbol of case study around the world. Focusing on the chemical composition of sugarcane, and the production and processes that optimize it for either agricultural or energy use, the book is designed to provide practical insights for current application and inspire the further exploration of options for balancing food and fuel demands. Presents the productive chain of sugarcane and its implications on food production and the environment Includes discussions on the evolution of the sustainable development of the sugar-energy sector Contextualizes and premises for the technological road mapping of energy-cane Provides information on new technologies in the sugar-energy sector

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.

The enormous impact of sugarcane plantations in Hawai'i has overshadowed the fact that Native Hawaiians introduced sugarcane to the islands nearly a millennium before Europeans arrived. In fact, Hawaiians cultivated sugarcane extensively in a broad range of ecosystems using diverse agricultural systems and developed dozens of native varieties of kō (Hawaiian sugarcane). Sugarcane played a vital role in the culture and livelihood of Native Hawaiians, as it did for many other Indigenous peoples across the Pacific. This long-awaited volume presents an overview of more than one hundred varieties of native and heirloom kō as well as detailed varietal descriptions of cultivars that are held in collections today. The culmination of a decade of Noa Lincoln's fieldwork and historical research, Kō: An Ethnobotanical Guide to Hawaiian Sugarcane Cultivars includes information on all known native canes developed by Hawaiian agriculturalists before European contact, canes introduced to Hawai'i from elsewhere in the Pacific, and a handful of early commercial hybrids. Generously illustrated with over 370 color photographs, the book includes the ethnobotany of kō in Hawaiian culture, outlining its uses for food, medicine, cultural practices, and ways of knowing. In light of growing environmental and social issues associated with conventional agriculture, many people are acknowledging the multiple benefits derived from traditional, sustainable farming. Knowledge of heirloom plants, such as kō, is necessary in the development of new crops that can thrive in diversified, place-specific agricultural systems. This essential guide provides common ground for discussion and a foundation upon which to build collective knowledge of indigenous Hawaiian sugarcane.

Sugarcane Variety Tests in Florida

Bacterial and Nematode Diseases

Culture of Sugarcane for Sugar Production in Louisiana

An Ethnobotanical Guide to Hawaiian Sugarcane Cultivars

From State Intervention to a Free Market

Chemistry and Processing of Sugarbeet and Sugarcane

Sugarcane grows in all tropical and subtropical countries. Sucrose as a commercial product is produced in many forms worldwide. Sugar was first manufactured from sugarcane in India, and its manufacture has spread from there throughout the world. The manufacture of sugar for human consumption has been characterized from time immemorial by the transformation of the collected juice of sugar bearing plants, after some kind of purification of the juice, to a concentrated solid or semi solid product that could be packed, kept in containers and which had a high degree of keep ability. The efficiency with which juice can be extracted from the cane is limited by the technology used. Sugarcane processing is focused on the production of cane sugar (sucrose) from sugarcane. The yield of sugar & Jaggery from sugar cane depends mostly on the quality of the cane and the efficiency of the extraction of juice. Other products of the processing include bagasse, molasses, and filter cake. Sugarcane is known to be a heavy consumer of synthetic fertilizers, irrigation water, micronutrients and organic carbon. Molasses is produced in two forms: inedible for humans (blackstrap) or as edible syrup. Blackstrap molasses is used primarily as an animal feed additive but also is used to produce ethanol, compressed yeast, citric acid, and rum. Edible molasses syrups are often blended with maple syrup, invert sugars, or corn syrup. Cleanliness is vital to the whole process of sugar manufacturing. The biological software is an important biotechnical input in sugarcane cultivation. The use of these products will encourage organic farming and sustainable agriculture. The book comprehensively deals with the manufacture of sugar from sugarcane and its by-products (Ethyl Alcohol, Ethyl Acetate, Acetic Anhydride, By Product of Alcohol, Press mud and Sugar Alcohols), together with the description of machinery, analysis of sugar syrup, molasses and many more. Some of the fundamentals of the book are improvement of sugar cane cultivation, manufacture of Gur (Jaggery), cane sugar refining: decolourization with absorbent, crystallization of juice, exhaustibility of molasses, colour of sugar cane juice, analysis of the syrup, massecuites and molasses bagasse and its uses, microprocessor based electronic instrumentation and control system for modernisation of the sugar industry, etc. Research scholars, professional students, scientists, new entrepreneurs, sugar technologists and present manufacturers will find valuable educational material and wider knowledge of the subject in this book. Comprehensive in scope, the book provides solutions that are directly applicable to the manufacturing technology of sugar from sugarcane plant.

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

Can you survive an adventure on Sugarcane Island? The reader connects the passages through a series of decisions that can bring survival and rescue or certain death.

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

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

Sugarcane-based Biofuels and Bioproducts

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

Sugarcane Pricing

Sugarcane Biofuels

Molecular Marker Applications for Improving Sugar Content in Sugarcane

While the Yucatán Peninsula of Mexico may conjure up images of vacation getaways and cocktails by the sea, these easy stereotypes hide a story filled with sweat and toil. The story of sugarcane and rum production in the Caribbean has been told many times. But few know the bittersweet story of sugar and rum in the jungles of the Yucatán Peninsula during the nineteenth century. This is much more than a history of coveted commodities. The unique story that unfolds in John R. Gust and Jennifer P. Mathews's new history Sugarcane and Rum is told through the lens of Maya laborers who worked under brutal conditions on small haciendas to harvest sugarcane and produce rum. Gust and Mathews weave together ethnographic interviews and historical archives with archaeological evidence to bring the daily lives of Maya workers into focus. They lived in a cycle of debt, forced to buy all of their supplies from the company store and take loans from the hacienda owners. And yet they had a certain autonomy because the owners were so dependent on their labor at harvest time. We also see how the rise of cantinas and distilled alcohol in the nineteenth century affected traditional Maya culture and that the economies of Cancún and the Mérida area are predicated on the rum-influenced local social systems of the past. Sugarcane and Rum brings this bittersweet story to the present and explains how rum continues to impact the Yucatán and the people who have lived there for millennia.

Sugarcane exhibits all the major characteristics of a promising bioenergy crop including high biomass yield, C4 photosynthetic system, perennial nature, and ratooning ability. Being the largest agricultural commodity of the world with respect to total production, sugarcane biomass is abundantly available. Brazil has already become a sugarcane biofuels centered economy while Thailand, Colombia, and South Africa are also significantly exploiting this energy source. Other major cane producers include India, China, Pakistan, Mexico, Australia, Indonesia, and the United States. It has been projected that sugarcane biofuels will be playing extremely important role in world's energy matrix in recent future. This book analyzes the significance, applications, achievements, and future avenues of biofuels and bioenergy production from sugarcane, in top cane growing countries around the globe. Moreover, we also evaluate the barriers and areas of improvement for targeting efficient, sustainable, and cost-effective biofuels from sugarcane to meet the world's energy needs and combat the climate change.

An Attempt Has Been Made In This Book To Analyse And Assess The Policy, Procedure And Operation Of Pricing The Sugarcane In Maharashtra. Sugar And Sugarcane Commodities Are Controlled By The Central Government Policies Which Have Great Impact On The Policies And Procedures Formulated By The State Government In This Regard. The Theoretical Basis And Background Of Fixing The Cane Prices Have Been Studied. Procedures For Pricing Cane In Indian States And Foreign Countries Are Examined With A View To Vouch For The System. Other Related Issues Like Cost Of Cultivation Of Sugarcane, Terms Of Trade, Economics Of Sugar Recovery, Consequences And Implications Of Delicensing And Decontrolling Are Also Examined With A View To Understand The Forward And Backward Linkages Of Sugar Industry.

Sugarcane, an important source of sugar, plays a substantial role in world economy. As a C4 plant this has very efficient system for carbohydrate metabolism through photosynthesis. Crop improvement efforts have concentrated mainly on improving quality traits, mainly sugar content. This being a complex trait, involves a large number of target genes in the metabolic pathway. The complex polyploid nature of the crop makes it more difficult to pin point the key players in this complex pathway. Despite its importance, little is known about the exact mechanism of sucrose accumulation and its regulation in sugarcane. Many enzymes have been proposed to have a key role in determining the ultimate sucrose content in sugarcane. There are evidences to show that some of these like Sucrose Phosphate Synthase (SPS) and Sucrose Synthase (SuSy) are encoded by multiple genes that show organ specifity in sugarcane. Especially in a crop like sugarcane where the classical techniques are of limited help in elucidating various genetic complexities, molecular techniques can be of help in throwing some light on the grey areas. Molecular marker strategies will be of help in understanding some aspects of sucrose metabolism and its regulation in this crop, thus complementing the ongoing crop improvement programmes.

Just Like Sugarcane

Production of Ethanol from Sugarcane in Brazil

Agricultural Production, Bioenergy and Ethanol

Sugarcane Improvement Through Breeding

Status, Potential, and Prospects of the Sweet Crop to Fuel the World

Children of Sugarcane

This book offers an in-depth analysis of the Brazilian sugarcane complex with a special focus on technological advances that promote sustainable development. It first examines the question why sugarcane-based ethanol from Brazil is considered a superior alternative to fossil fuel compared to other biofuels produced on an industrial scale and subsequently analyzes the most dynamic areas within the sugarcane sector with regard to relevant actors, technologies and markets in order to determine if the sector can be considered an innovation system. The empirical research presented here is based on multiple research methods and derives its data from interviews with Brazilian experts of the sugarcane sector and by a thorough literature review. The book will be of special interest to researchers and practitioners interested in understanding the key mechanisms in successful innovation systems that promote a transition towards sustainable development and mobility.

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.

Sugarcane is a C4, perennial, sucrose-storing grass belonging to the genus Saccharum (Arceneaux, 1965) that originated in Asia, and it is a cultivated crop in tropical and subtropical countries throughout the world. Among the countries cultivating sugarcane, Brazil is the largest producer. Sugarcane has been harvested for human and animal consumption for centuries, and in recent decades, it has been used for fuel production by juice fermentation (first-generation ethanol). The primary sugarcane by-products are molasses, used as ruminant feed and as a sugar substitute, and bagasse, a source of fibres for animal diets and bioelectricity. This book discusses the production, consumption and agricultural management systems of sugarcane.

Sugarcane has garnered much interest for its potential as a viable renewable energy crop. While the use of sugar juice for ethanol production has been in practice for years, a new focus on using the fibrous co-product known as bagasse for producing renewable fuels and bio-based chemicals is growing in interest. The success of these efforts, and the development of new varieties of energy canes, could greatly increase the use of sugarcane and sugarcane biomass for fuels while enhancing industry sustainability and competitiveness. Sugarcane-Based Biofuels and Bioproducts examines the development of a suite of established and developing biofuels and other renewable products derived from sugarcane and sugarcane-based co-products, such as bagasse. Chapters provide broad-ranging coverage of sugarcane biology, biotechnological advances, and breakthroughs in production and processing techniques. This text brings together essential information regarding the development and utilization of new fuels and bioproducts derived from sugarcane. Authored by experts in the field, Sugarcane-Based Biofuels and Bioproducts is an invaluable resource for researchers studying biofuels, sugarcane, and plant biotechnology as well as sugar and biofuels industry personnel.

Production, Cultivation and Uses

The House That Sugarcane Built

Advances in Sugarcane Biorefinery

Sugarcane

Marketing Sugarcane in Louisiana

Contributions to climate change mitigation and the environment

This book details the current status of research being conducted worldwide on bacterial and nematode diseases of sugarcane. The subject matter deals with new biotechnological and molecular tools for diagnosis and characterization of bacterial and nematode pathogens and reliable detection of these pathogens in infected samples. Important nematode sp

"Shanti is a heroine that the reader will not easily forget. The story that is told here is worth not only knowing but also remembering." – Siphiwe Gloria Ndlovu, author, filmmaker and academic Vividly set against the backdrop of 19th century India and the British-owned sugarcane plantations of Natal, written with great tenderness and lyricism, Children of Sugarcane paints an intimate and wrenching picture of indenture told from a woman's perspective. Shanti, a bright teenager stifled by life in rural India and facing an arranged marriage, dreams that South Africa is an opportunity to start afresh. The Colony of Natal is where Shanti believes she can escape the poverty, caste, and troubling fate of young girls in her village. Months later, after a harrowing sea voyage, she arrives in Natal only to discover the profound hardship and slave labour that await her. Spanning four decades and two continents, Children of Sugarcane demonstrates the lifegiving power of love, heartache, and the indestructible bonds between family and friends. These bonds prompt heroism and sacrifice, the final act of which leads to Shanti's redemption.

This book provides exhaustive information on several recent technologies that are employed for sugarcane improvement through biotechnology and will be of great interest to plant scientists, biotechnologists, molecular biologists and breeders who work on sugarcane crop. Topics discussed in this volume include genomics and transcriptomics, transgenic sugarcane for trait improvement, potential candidate promoters, new strategies for transformation, molecular farming, sugarcane as biofuel, chloroplast transformation, and genome editing.

This book presents topical research in the study of the production, cultivation and uses of sugarcane. Topics discussed in this compilation include the ecology and tactics of control for three sugarcane stalkboring species in West Africa; sugarcane diversification, productivity and competitiveness by geostatistical techniques and precision agriculture; sugarcane as feedstock for biomediated polymer production; sugarcane tillering and ratooning; products from the delignification of sugarcane bagasse; and, the adaptability and stability of sugarcane genotypes.

The Biology And Control of Weeds in Sugarcane

Fuel Ethanol Production from Sugarcane

Compendium of Bioenergy Plants

Sustainable Sugarcane Production

A Guide to Sugarcane Diseases

Culture of Sugarcane for Sugar Production in the Mississippi Delta

The Biology and Control of Weeds in Sugarcane provides a comprehensive discussion of the problems of weed control in sugarcane against the background of world-wide cultivation, with emphasis on Taiwan's intensive pattern of crop farming. The book is divided into 12 chapters which present the following concepts of weed control in sugarcane: botanical description of sugarcane; the cultivation of sugarcane in relation to weed control; weeds associated with sugarcane and their biological characteristics; losses in crop production caused by weeds; chemical control of weeds; crop tolerance and weed responses to chemicals; evaluation of new herbicides; research and practices of chemical weed control; and application techniques and equipment utilized in weed control. The book is an authoritative reference for agriculture students, lecturers, and scientists. The advances presented in the book are also an invaluable contribution to the expanding ""Weed Science"" and will serve as an excellent background and perspective for further weed studies.

This volume of the Bioenergy Plants compendium contains a collection of chapters that focus on the history, economics, and practical sciences related to sugarcane. As one of the key biofuel crops in the world that is under large-scale cultivation, sugarcane is attracting interests for its adoption and emulation worldwide. With a high ratio of energ

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.

Just like sugarcane, your time is in God's hand, and your field has been prepared. The soil in which you now grow is designed to make you thrive with excellence, to grow to your maximum potential. The distance between you and the next cane is perfect; for while you sway in the wind and your upper lush greenery touches other sugarcane plants, the space in which you have existed is just for your outreached roots to support your position. Nobody can take your space; while all sugarcane looks just like you, your space is your space. You're tightly fitted together as a field, and your green combined with the green of others looks good for uniformity. There are rows of gutters running far and long beside you to supply water for all the sugarcane plants. But while you bask in your freedom to be you, I must warn you, there is a reason you have been raised right; there is a reason you're lush and green; there is a reason you're solid, firm, tall and straight. While you're outstandingly radiant in your exclusive beauty, accompanied by many other sugarcane plants as pretty as yourself, there is a reason for your very existence: You will be set on fire. You will be cut down. You will be left alone. You will be dragged. You will be crushed. You will rise again. You will be productive and multiply.

The Louisiana Burguières

The Role of Innovation in a Dynamic Sector on Its Path Towards Sustainability

Pest Management in Sugarcane

Biotechnology to Enhance Sugarcane Productivity and Stress Tolerance

Sugarcane Academy

Technologies, Commercialization, Policy Issues and Paradigm Shift for Bioethanol and By-Products

Climate change is a challenge facing human life. It will change mobility and asks for new energy solutions. Bioenergy has gained increased attention as an alternative to fossil fuels. Energy based on renewable sources may offer part of the solution. Bio ethanol based on sugar cane offers advantages to people, the environment and the economy. Not surprisingly, governments currently enact powerful incentives for the development and exploitation of bio ethanol.However, every inch we come closer to this achievement, evokes more scepticism. Many questions are raised relating to whether sugar cane is really a sustainable solution. Still much is unknown about the net release of carbon dioxide and what the impacts of sugar cane expansion are on green house gas emissions.This book looks at the scientific base of the debate on sugar cane bio ethanol. Authors from Europe, Brazil and the USA capture many aspects of what is known and address assumptions while not denying that still much is unknown. It covers impacts on climate change, land use, sustainability and market demands. This publication discusses public policy impacts, technology developments, the fuel-food dilemma and the millennium development goals. This makes this publication unique and extremely relevant for policymakers, scientists and the private energy sector worldwide.

"Vividly set against the backdrop of 19th century India and the British-owned sugarcane plantations of Natal, written with great tenderness and lyricism, Children of Sugarcane paints an intimate and wrenching picture of indenture told from a woman's perspective. Shanti, a bright teenager stifled by life in rural India and facing an arranged marriage, dreams that South Africa is an opportunity to start afresh. The Colony of Natal is where Shanti believes she can escape the poverty, caste, and troubling fate of young girls in her village. Months later, after a harrowing sea voyage, she arrives in Natal only to discover the profound hardship and slave labour that await her. Spanning four decades and two continents, Children of Sugarcane demonstrates the lifegiving power of love, heartache, and the indestructible bonds between family and friends. These bonds prompt heroism and sacrifice, the final act of which leads to Shanti's redemption. " --

This inspiring story of a post-Katrina classroom "reminds us all that heroes hold small hands on field trips, clean paint brushes, and sing morning songs" (Phillip Done, author of 32 Third Graders and One Class Bunny: Life Lessons from Teaching). As floodwaters from Hurricane Katrina surged at their heels, those fleeing New Orleans had their minds more on safety than on whether their children would be missing school. But when a group of evacuee parents who settled in New Iberia, Louisiana, realized they would not be returning home quickly, they set about reconstructing their families' lives. And so they turned to beloved New Orleans schoolteacher Paul Reynaud, whose fierce determination and unwavering spirit transformed an abandoned office into a one-room schoolhouse. This is the story of Sugarcane Academy: twenty-five students, their devoted parents, an inspiring teacher, and the boundless power of learning. "This wonderful memoir manages to do what a flood of news-reporting could not: see the tragedy of Katrina through the eyes of children. The story of the Sugarcane Academy, an improvised one-room school in a sugarcane parish in south Louisiana, will be one of the lasting books of our tragedy." —Andrei Codrescu, author of New Orleans, Mon Amour: Twenty Years of Writings from the City

This book examines the experiences of seasonal, migrant sugarcane workers in Brazil, analyzing the deep-seated inequalities pervasive in contemporary Brazil. Education, employment, income, health, and relative political power are forefront in this study of the living and working conditions of the transient population. Based on ten years of qualitative research dominated by in-depth interviews with migrant sugarcane workers, this project argues that the ills of the sugarcane industry are symptomatic of an overarching problem of unequal access to opportunities by all Brazilian citizens. The project is unique in its use of a single industry as an expression of the multifarious problems of socioeconomic, regional, and racial inequality. The author explores details of the labor migration experience with a central premise that the conditions are not a direct outcome of the industry, but rather a manifestation of fundamental inequalities rooted in Brazil's colonial history.

Production, Consumption and Agricultural Management Systems

How a New Orleans Teacher and His Storm-Struck Students Created a School to Remember

Sugarcane and Rum

Sugarcane Biotechnology: Challenges and Prospects

Sugarcane ethanol

Kō

From enhancing the flavour of food to providing a substrate for fermentation, sugar is renowned worldwide for its importance as a commodity. For many centuries sugarcane has been cultivated and developed, and we now have a huge range of crop varieties. Based on Blackburn's highly successful Sugarcane, originally published in 1984, this new edition has been fully revised and expanded by an international team of widely respected sugarcane specialists. Focussing on the agricultural aspects of the crop, this book follows a logical progression from the botany and breeding through to planning cultivation, control of weeds, pests and diseases, harvest management and payment for cane. An invaluable asset to those involved in planning or running sugar estates as well as small producers An easy-to-follow reference for students and agriculturalists alike Comprehensive reference sections and further reading

The success of Brazil in the large-scale production and use of fuel ethanol has been widely discussed and analyzed by other countries interested in adopting policies designed to encourage the use of biofuels. Within this context, certain questions arise: Could the Brazilian experience be replicated in other countries? What were the conditions that enabled the creation of the Brazilian Proálcool (National Ethanol Program and what lessons can be learned? To examine these issues, it is important to understand the functioning of the key, interconnected markets (those for sugarcane, sugar and ethanol), which, from their inception, were the objects of extensive government intervention until 1999. Two main conditions enabled the creation of Proálcool: robust production of sugarcane and sugar (tightly regulated by the government, which applied the numerous regulations then in place); and the military regime that was in place at the time, whose decision-making and enforcement powers were quite broad, facilitating the carrying out of the necessary actions, as well as making it easier to coordinate the activities of the various stakeholders and sectors involved. This book increases understanding of the functioning of the sugarcane supply chain in Brazil, not only during the phase of government intervention but also in recent years (in the free-market environment). The lessons, positive and negative, gleaned from the Brazilian experience can contribute to reflection on and the development of alternative modalities of biofuel production in other countries, making the book of interest to scholars and policy-makers concerned with biofuel and renewable resources as well as economic development.

This report presents a cost analysis of hydrous Ethanol from sugarcane using a typical process. In this process, sucrose is extracted from sugarcane and it is fermented to produce hydrated Ethanol. The sugarcane bagasse is burned for electricity generation. This report was developed based essentially on the following reference(s): "Ethanol", Ullmann's Encyclopedia of Industrial Chemistry, 7th edition Keywords: Ethyl Alcohol, Bioethanol, Biomass

This book is a comprehensive survey of breeding principles and practices employed by sugarcane growers and researchers throughout the world. Included within its scope are important genera and species concepts, morphological information, clarification of certain generic names, a description of germplasm collection and utilization, discussion of the complex issues involved in genetic manipulation, and a summary of sugarcane improvement through breeding over the past century. The book is compiled so that information proceeds from the general to the specific. Basic concepts of evolution, taxonomy, morphology, and anatomy form the groundwork for information regarding germplasm collection, cyto-genetics, genetics, and flowering. Methods of practical application are presented in the ensuing chapters, which deal with hybridization, tissue culture, seed handling, selection criteria, and breeding for tolerance. Figures, tables, and photographs accompany text where appropriate. All key words are indexed and extensive bibliographies follow each chapter.

Technology and Research

Policy, Procedure, and Operations

Sugarcane Biorefinery, Technology and Perspectives

Sugarcane Labor Migration in Brazil

The Sugarcane Complex in Brazil

The Bittersweet History of Labor and Life on the Yucatán Peninsula

Sugarcane is an important industrial crop of India. Perhaps this could be the largest agroprocessing industry in India. This industry is mainly situated in rural India and has changed the face of rural India to a great extent in a real sense. The sugarcane is grown in India wherever irrigation facility is available. The sugarcane was previously used for Gur making which was the major form of consumption in day to day use for tea, sweets etc. Since the inception of sugar mills in 1930, sugar could be made popular in place of gur since it has a better shelflife and easiness in handling while making use. This crop was grown on area of 1176000 hac in 1930 which has gone up to 5114000 hac in 2018. There are about 525 sugar mills as on 2017–18 as against 29 in 1930–31 with average crushing capacity 644 t/day in 1940–41 to 4439 t/day in 2017–18 with sugar production 0.934 million tons in1940–41 to 32.328 million tons in 2017–18 and recovery 8.96 in 1930–31 to 10.73 in 2017–18 and molasses production 3336000 tons in 1935–36 to 13980000 tons in 2017–18.

The House That Sugarcane Built tells the saga of Jules M. Burguières Sr. and five generations of Louisianans who, after the Civil War, established a sugar empire that has survived into the present. When twenty-seven-year-old Parisian immigrant Eugène D. Burguières landed at the Port of New Orleans in 1831, one of the oldest Louisiana dynasties began. Seen through the lens of one family, this book traces the Burguières from seventeenth-century France, to nineteenth- century New Orleans and rural south Louisiana and into the twenty-first century. It is also a rich portrait of an American region that has retained its vibrant French culture. As the sweeping narrative of the clan unfolds, so does the story of their family-owned sugar business, the J. M. Burguières Company, as it plays a pivotal role in the expansion of the sugar industry in Louisiana, Florida, and Cuba. The French Burguières were visionaries who knew the value of land and its bountiful resources. The fertile soil along the bayous and wetlands of south Louisiana bestowed on them an abundance of sugarcane above its surface, and salt, oil, and gas beneath. Ever in pursuit of land, the Burguières expanded their holdings to include the vast swamps of the Florida Everglades; then, in 2004, they turned their sights to cattle ranches on the great frontier of west Texas. Finally, integral to the story are the complex dynamics and tensions inherent in this family-owned company, revealing both failures and victories in its history of more than 135 years. The J. M. Burguières Company's survival has depended upon each generation safeguarding and nourishing a legacy for the next.

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.

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