Breeding Plantation Tree Crops: Tropical Species

Tree species are indispensable to support human life. Due to their long life cycle and environmental sensitivity, breeding trees to suit day-to-day human needs is a formidable challenge. Whether they are edible or industrial crops, improving yield under optimal, sub-optimal and marginal areas calls for united efforts from the scientists around the world. While the uniqueness of coconut as kalavriksha (Sanskrit meaning tree-of-life) marks its presence in every continent from Far East to South America, tree crops like cocoa, oil palm, rubber, apple, peach, grapes and walnut prove their environmental sensitivity towards tropical, sub-tropical and temperate climates. Desert climate is quintessential for date palm. Thus, from soft drinks to breweries to beverages to oil to tyres, the value addition offers a spectrum of products to human kind, enriched with nutritional, environmental, financial, social and trade related attributes. Taxonomically, tree crops do not
Plantation Crops

Concentrated to a few families, but spread across a section of genera, an attribute so unique that contributes immensely to genetic biodiversity even while cultivated at the commercial scale. Many of these species influence other flora to nurture in their vicinity, thus ensuring their integrity in serving the genetic biodiversity. While wheat, rice, maize, barley, soybean, cassava, and bananas makeup themajor food staples, many fruit trees species contribute greatly to nutritional enrichment in human diet. The edible part of these species is the source of several nutrients that makes additives for the daily diet of humans, for example, vitamins, sugars, aromas and flavour compounds, and raw material for food processing industries. Tree crops face an array of agronomic and horticultural problems in propagation, yield, appearance, quality, diseases and pest control, abiotic stresses and poor shelf-life.

The Role of Plantation Crops in Agricultural Development

Plantation Crops are large-scale farms that specialize in cash crops and cultivated on an extensive scale in a large contiguous area, owned and managed by an individual or a company. The crops include tea, coffee, rubber, cocoa, coconut, arecanut, oil palm, palmyrah, cashew, cinchona, etc. These plantation crops are high value commercial crops of greater economic importance and play a vital role in a nation's economy. Probably the single most important factor a plantation has on the local environment is the site where the plantation is established. If natural forest is cleared for a planted forest then a reduction in biodiversity and loss of habitat will likely result. In some cases, their establishment may involve draining wetlands to replace mixed hardwoods that formerly predominated with pine species. If a plantation is established on abandoned agricultural land, or highly degraded land, it can result in an increase in both habitat and biodiversity. A planted forest can be profitably established on lands that will not support agriculture or suffer from lack of natural regeneration. However, the prospects of spice crop production are bright because of its high market demand. The most common type of spice crops grown are onion, garlic, ginger, black pepper, hot pepper, celery, shallots, leek, bay leaf, and tanglad. Among these crops however, only onion, garlic, ginger, black pepper, and hot pepper are grown commercially because of their high market demand and usefulness. Spices are primarily used as food seasoning. In addition to their culinary uses, spices are also utilized as flavoring agent in beverages, active ingredient in syrubic medicines, coloring agent of textiles, and an important constituent in cosmetic and perfume products. This Book Plantation and Spices Crops presents an overview of the importance of plantation crops and spice plants, as well as...
Plantation crops have been traditional export earners but their importance declined when industrial and engineering goods became major export products. Interest in them was revived through new technology and marketing methods. Plantation crop development is another way of containing the environmental deterioration caused by the modern agro-systems. Plantation and forestry could go hand in hand and could develop what is called a forestry-plantation system: plantation development if it is in wasteland, could propagate mixed crop species along with soil conservation and linkage with other sectors thus improving the role of plantation crops. Thous

Coconut and arecanut are classified as palms, an attempt is made in this study to include them and study some other plantation crops like cashewnut to the development of agricultural and the rural sector in the particular region. The study is divided into two parts—Part I comprising coconut—arecanut and Part II cashewnut. Contents Part I; Chapter 1: Plantation Crops; Chapter 2: Introduction to Coconut-Arecanut Cultivation; Chapter 3: Coconut; Chapter 4: Coconut Cultivation in Dakshina Kannada; Chapter 5: Arecanut; Chapter 6: Paddy; Chapter 7: Cardamom, Pepper and Rubber; Chapter 8: Summary and Conclusion; Chapter 9: Energy and Economics in Tea Processing; Part II; Chapter 10: Some Problems of Rural Development; Chapter 11: Cashewnut: An Introduction; Chapter 12: The Project;
Undoubtedly, the book would serve as a one-stop-shop for gaining knowledge on molecular markers, genomics, transcriptomics, in vitro culture and genetic engineering of plantation crops. This book would stimulate healthy scientific discussions and help further the research interests of plantation crops. It would serve post-graduate students, researchers and academicians, who are involved in biotechnology related aspects of plantation crops.
Plantation crops play an important role in the livelihood security of millions of farmers. However, they are predominantly grown in economically and ecologically vulnerable zones. Being perennial in growth pattern, plantation crops are exposed to climatic stresses and experience climate change in their life cycle. Thus, it becomes important to understand the effects of climate change on plantations and develop adaptation strategies. This book summarizes the information on plantation crops in climate change context, apart from providing adaptation options and mitigation potential of plantation crops in lucidly written 15 chapters by the domain experts. It is hoped that this book will be useful to all the stakeholders involved in plantation research, development, extension and policy planning besides students and all those involved in assessing the impacts and developing adaptation and mitigation strategies for improving plantation productivity in changing climates.

Plantation Crops, Opportunities and Constraints
Issued as a supplement to the Journal of plantation crops.

Technical Communication - Commonwealth Bureau of Horticulture and Plantation Crops

Over the last five centuries, plantation crops have represented the best and worst of industrialized agriculture – “best” through their agronomic productivity and global commercial success, and “worst” as examples of exploitative colonialism, conflict and ill-treatment of workers. This book traces the social, political and evolutionary history of seven major plantation crops – sugarcane, banana, cotton, tea, tobacco, coffee and rubber. It describes how all of these were domesticated in antiquity and grown by small landowners for thousands of years before European traders and colonists sought to make a profit out of them. The author relates how their development and spread were closely associated with government expansionist policies. They stimulated the exploration of far off lands, were the focus of major conflicts and led to the enslavement of both native and displaced peoples. From the southern United States, Latin America and the Caribbean, to Asia and Africa, plantation crops turned social structures upside down leading to revolution and government change. The economies of whole countries became tied to the profits of these plantations, leading to internal power struggles to control the burgeoning wealth. Open warfare routinely broke out between the more powerful countries and factions for trade dominance. This book shows that from the early 1500s to today, at least one of the plantation crops was always at the center of world politics, and that this still continues today, for example with the development of oil palm plantations in Southeast Asia. Written in an accessible style, it is fascinating supplementary reading for students of agricultural, environmental and colonial history.
steps taken to control insect pests through the utilization of natural enemies as a component of IPM will yield positive results. Being the first of its kind in the area of biological control in relation to insect pests of social forestry, this book besides laying special emphasis on the biology and ecology of major biocontrol agents, also highlights several potential biological control agents like the reduviids, ants and spiders. The extent of control these agents can exercise on their pest populations as well as the rate at which they can build-up their populations are evident from bioenergetics and life-table studies. This volume which is the outcome of a National Seminar held at the Entomology Research Institute, Loyola College, Madras provides a wealth of information of considerable significance to Forestry research and management.
In order to popularize organic farming among the farmers, it is felt that such technologies without the use of any inorganic fertilizers and plant protection chemicals are made available to them. Though many technologies have been generated but, there continues to be considerable gap between the needs and availability. This book, "Organic Farming in Plantation Crops" written by experts in the field, covering organic farming practices of important plantation crops, tries to bridge this gap. As valuable source of information to all those involved in organic farming including scientists, developmental personnel, policy makers, NGOs and farmers, it is expected to stimulate and motivate more intensified R & D efforts, favourable policy initiatives to spread organic farming of plantation crops at the grass roots level for the production of safe food under healthy environmental conditions.
The book provides a wide ranging, up-to-date and methodical account of the role of various plantation crops in the nation’s economy and the new opportunities as well as the challenges that they offer to farmers, scientists, researchers and consumers alike.

The book covers almost all valuable chapters regarding the following topics: Introduction, Arecanut, Cashew, Nut, Cocoa, Coconut, Tea, Rubber, Coffee, Palmyrah Palm, Oil Palm, Betelvine.

Introduction to Spices, Plantation Crops, Medicinal and Aromatic Plants.