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Pineapple under coconut

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Coconut + Pineapple + Banana + Black pepper



Cacao under coconut

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POLY CULTURE IN COCONUT

Compendium for students and scientists and guidelines for farmers and development workers It will be useful to the policy makers and planners for planning profitable coconut development in Tropics and Costal Plains in different continents world over

Authors
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 &
 Dr. K Sivaraman

Published by :



Foundation

Natural Resources
 India Foundation

(A not-for-profit NGO: for Research, Consultancy & Turn Key Jobs)

Brief about the book

This is an unique Compendium on **POLY CULTURE IN COCONUT IN HUMID TROPICS & COASTAL PLAINS**. It includes the latest research findings from major coconut growing countries.

Coconut, *Kalpavriksha*, is the livelihood security to millions of persons in Asia and Pacific regions as well as African countries. Coconut palms yield hundreds of products which are used for *food and drink, shelter and wellness, welfare and eco-friendly*.

Many coconut growers are small scale and marginal farm holders. Growing only coconut crop does not bring good income due to frequent price drop and failure of crop in some years due to vagaries of monsoon.

To make the crop more competitive it is necessary to consider inter, mixed, multiple, or multistoried-cropping/ integrated farming systems which help to increase the unit income from unit time in unit area.

It is also necessary to educate the nutritional and health benefits of coconut and its products so that the misconception of coconut bad for health will go and people will use coconut without fear and demand will increase.

Alternate uses of coconut oil as bio fuel is also gaining importance in Pacific countries as well as in some Asian countries.

Lot of research results and careful observations are available all over the coconut growing regions. An attempt is made by the authors to provide a valuable compendium for scientists, students, farmers and agriculture professionals.

The book contains 12 Chapters besides numerous references.

Chapter 1. General : Treats general descriptive aspects of coconut, botanical features, growth and development of coconut, global distribution, climatic and edaphic preparedness for coconut palm, contribution of coconut to poverty alleviation and economic sustainability, and the major components of cropping systems.

Chapter 2. Poly Culture in Coconut and Opportunities for Multiple Cropping : Includes the nature of holding size around the world; lay out for new planting, planting techniques, planting materials, density of planting and replanting techniques, weed management, moisture conservation, and bio physical environments of coconut gardens favouring cropping systems.

Chapter 3. Coconut Based Cropping Systems : Deals with inter-cropping with annuals, biennials, medicinal and aromatic plants, mixed cropping, high density cropping models, and home garden systems.

Chapter 4. Soil Fertility Management in Coconut Based Polyculture System : Highlights the coconut growing soil, nutrient management and requirement for component crops, maintaining and retaining soil fertility, integrated nutrient and water management systems for coconut based cropping system.

Chapter 5. Organic Recycling in Coconut Poly culture System : Describes the organic residues and different systems of composting including vermi-composting as means for low cost technology.

Chapter 6. Plant Health Management under Coconut Based Poly culture System : Details the various aspects of pests and diseases associated with cropping systems and their management including host ranges and bio control.

Chapter 7. Harvest and Storage of Coconut : Various harvest methods, tools for harvest and storage methods are explained.

Chapter 8. Coconut Products : Various products and by-products of Coconuts are described.

Chapter 9. Coconut for Health and Nutrients : Various health and nutritional aspects coconut and its products are discussed.

Chapter 10. Coconut oil as Bio diesel : Explains possibilities of using coconut oil as bio fuel in some Asia and Pacific countries

Chapter 11. Economics of Coconut Based Poly culture System : The Economics of various coconut based poly culture systems were described

Chapter 12. Strategies for Sustaining the Productivity of Coconut Lands Through Poly culture systems

Brief about Authors

DR. P. RETHINAM, Author

Dr. P. Rethinam was born on July 1, 1942 in Madurai, Tamil Nadu, India. He received an undergraduate degree in Agriculture from Agricultural College and Research Institute, Coimbatore, Tamil Nadu in 1963. He received his Masters in agriculture from Madurai University and doctorate in Agronomy from Tamil Nadu Agricultural University, Coimbatore. His professional career began in research in 1963. He was an Assistant Professor of Agronomy and Assistant Agronomist for four years. He was selected for All India Agricultural Research Services in 1976 and worked as a Scientist grade 1 & 2. He was selected as a Project Coordinator (Palms) in 1982 for the All India Coordinated Research Project on Palms. In this position he widened the scope of the project by including oil palm and palmyrah. He was also responsible for coordinating the release of the coconut hybrids and varieties for the first time in India in the year 1985 and subsequently paved way for releasing more hybrids and varieties from Kerala, Tamil Nadu, Andhra Pradesh & Maharashtra.

In 1987, he became the first Assistant Director General, Plantation Crops at the Indian Council of Agricultural Research Head Quarters, New Delhi. During that period, he was responsible for research coordination and management for 3 institutes, 3 National Research Centers and five Coordinated Projects. He was the founder Director of the National Research Center for Oil Palm, Pedavegi, Andhra Pradesh in India (1995-2000). In that capacity, he created superior research facilities and formulated original research projects. His contribution in bringing up the irrigated oil palm in the country as small holders' crop was greatly recognized by the oil palm growers and processors in the country. This crop has now emerged as one of the most profitable crop. He was also functioning as Ecosystem Director for the Coastal Ecosystem under National Agricultural Technology Program (NATP). He coordinated, formulated and implemented various research programmes in agriculture, horticulture, animal science, fisheries, etc. In 2001, he was nominated as Chairman, Coconut Development Board, Ministry of Agriculture, Kochi, Government of India. In that role, he introduced many innovative development programmes on community approach for the benefit of coconut growers and processors.

In 2002, he was the first Indian to be elected as the Executive Director of Asia and Pacific Coconut Community, an Inter-Governmental organization. In that capacity, he introduced many new innovations in production, processing, and marketing promotional activities. He produced many publications in the form of



Brief about Authors

books, technical bulletins, and popular research articles. He served in many national and international committees. He was also the Vice President for BUROTROP (2002-2004) and member of COGENT Steering Committee since 2002. He was the winner of Konda Reddy Gold medal and Rolling Shield, Dr. Nathanael Gold Medal for best research work at TNAU, Coimbatore and Life Time Achievement Award in Plantation Crops by farmers of Andhra Pradesh. Recognising his contribution to the Global Coconut Research and Development, he was conferred with Kalpa Vriksha Award at the International Coconut Summit 2007 by Swedeshi Nalikera Mission and Peekay Tree Crops Foundation. He is the founder President of Society for Promotion of Oil Palm Research and Development. He is a Fellow of Indian Society for Plantation Crops and Horticulture Society of India and life member of many scientific societies in India. He has many years of experience in research and development including teaching for more than four decades of which three decades were in coconut research and development.

His contribution to the value addition of coconut, such as promoting tender coconut water, virgin coconut oil, coconut bio diesel etc. are well known in the Asian & Pacific countries. He had published 186 articles, co-edited two volumes of the books on Recent Advances in Plantation Crops, edited 25 books and many technical bulletins and reports, DVDs, CDs of APCC intellectual database, etc. He helped in establishing coconut seed gardens in the country and introduced the project of setting up of seed garden by private entrepreneurs. His contribution in the prevention of root wilt disease by eradication in the northern Kerala, organizing surveys jointly with Agriculture Department in Kerala, eradication of Thatipaka disease of Andhra Pradesh, management of Ganoderma wilt disease, crown chocking disease, introducing coconut based cropping models in the coconut growing regions of the country etc. had created a greater impact. Setting up of farmers field school of coconut in 9 Asia Pacific and African countries, introducing outreach programme to train the coconut farmers to produce biological agents for themselves, formulating guidelines for organic coconut farming, creating an awakening in the Pacific countries to go for value addition of coconut rather than exporting only copra at lower price are worth mentioning contribution. The health and nutritive benefit of coconut and its products were popularized through technical bulletins, circulated to more than 58 countries around the world through the UNESCAP annual meetings and organizing health seminars in Indonesia & USA popularizing the coconut products through international fares are also worth mentioning. He is instrumental for creating a great awareness for the value addition for coconut, both nationally and internationally.

Brief about Authors

DR. K. SIVARAMAN, Author

Dr. K. Sivaraman, born on 5th July 1954 in Tuticorin District, Tamil Nadu. Graduated in Agriculture from Agricultural College and Research Institute (AC &RI), Madurai, Tamil Nadu in 1975. He did his post graduate course at AC &RI, Coimbatore in the year 1977. He received his doctoral degree from Tamil Nadu Agricultural University, Coimbatore, India where he specialized in cropping systems. He started his career as a plantation crops researcher at Central Plantation Crops Research Institute (CPCRI), Kasaragod, Kerala, India in 1978. In 1983, he joined CPCRI Regional Station in Calicut, which later became Indian Institute of Spices Research (IISR). In a career spanning 28 years, he has contributed significantly in the field of agronomy and farming systems management with specific reference to spices and coconut. He has been involved in the development of agro-technologies for spices at IISR at Calicut.

As Director of Directorate of Arecanut and Spices Development at Calicut under the Ministry of Agriculture, Government of India, he was involved in implementing and monitoring development programmes on arecanut, spices and medicinal and aromatic plants. Presently he is involved in the study of long-term organic farming with particular reference to sugarcane at Sugarcane Breeding Institute (ICAR), Coimbatore, where he is a principal scientist. He has published more than 60 scientific papers in coconut and spices and six books including Cropping Systems in the Tropics Principles and Management, Indian Spices and Utilization, Spices and Herbs in Coconut Based Intensive Farming Systems in India, and Turmeric the genus *Curcuma*.



High Density Multi-Species Cropping System