

Production and processing technologies of major, minor spices and condiments globally marketed from India

Editors

Dr. N. NARAYANA REDDY

Dr. ANILKUMAR G S



Sri Krishnadevaraya College of Horticultural Sciences

Department of Spices, Plantation, Medicinal and Aromatic Crops

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Dr.K.Gopal
VICE-CHANCELLOR



Dr.Y.S.R. Horticultural University
Venkataramannagudem – 534 101
West Godavari Dist., A.P.
Website: www.drysrhu.ap.gov.in

FOREWORD

India is acclaimed as the 'Land of Spices', and is the biggest producer and consumer of spices in the world. Besides whole spices and powders, oils and oleoresins are the primary categories of spices exported from the country. These spices are of exceptional quality and have a wide variety to suit every palate. India's crop management programs and post-harvest processing technologies are in line with contemporary global practices. Export of spices from India during 2023-24 touched an all-time high of 15,39,692 tons valued at \$ 4,464 million USD. Major items of export were chilli, turmeric, cumin, cardamom, black pepper and mint based products. There was also an increase in the export of seed spices (both in terms of quantity and value) in the same period. With stiff global competition from other producing countries, there is an increasing need to focus on cost reduction and quality upgradation.

Spices have been virtually indispensable in the culinary art of flavoring foods since antiquity. Many of them possess properties as colourant, odourant, preservative and/or nutraceutical. Apart from their application as flavourings, spices are now widely used in health, personal care and hygiene areas and thus, play a significant role in the economy of the producing country. The international trade in spices is estimated at about 906,700 tons valued at \$ 2125 million. India commands a formidable position in world spice trade with a share of 37% in volume and 23% in value.

Research and development activities on spices in India are undertaken by government institutions, regulatory and trade bodies, and the industry. Prominent among them are: Indian Institute of Spices Research (Calicut), National Research Centre on Seed Spices (Ajmer), a number of State Agricultural Universities, Central Food Technological Research Institute (Mysore), Regional Research Laboratories (Jammu, Trivandrum) and the Indian industry. These bodies are actively involved in spice research for improvement in production, productivity, quality, as well as for new application development and marketing. These efforts would certainly help the industry and with continued focus on specific goals, business growth could be faster and more sustainable.

Value addition and creation of opportunities in the industry exist via., better supply chain management and with the constant upgradation of processing and formulation technologies. Developing novel functional ingredients for specialty applications based on natural spices would be of increasing relevance in future years as numerous spice ingredients are being sought after globally, due to their acceptance as nutraceuticals. Though the health food industry in India is at its infancy, its immense potential would ensure that the momentum would increase in the coming years. The overall growth of the Indian spice industry would be linked to the ability to tap the existing traditional markets viz., for seed spices, spice oils and oleoresins as well as their expanding and emerging markets in nontraditional application areas such as natural colourants and health promoters. Consequently, in addition to providing adequate R & D inputs to support the existing business, the industry in collaboration with the

government agencies and institutions should allocate additional resource to explore potential non-traditional opportunities for these plants derived natural products. International market for organic spices is on the increase and popularization of biofertilizers and biocontrol of pests and diseases are called for in this context.

The book on **"Production and processing technologies of major, minor spices and condiments globally marketed from India"** provides a comprehensive account on scope and importance of spices, present status of spice industry in India, challenges, thrust areas and research support for spices, extraction methods and application of spice oils and oleoresins in food industry, classification of spices, botany, chemical composition, crop improvement, agro technology, post-harvest technology and end uses of major & minor spices and condiments which are globally marketed from India.

Dr. N. Narayana Reddy, Associate Dean, Professor and Head, Department of Spices, Plantation, Medicinal and Aromatic Crops, Sri Krishnadevaraya College of Horticultural Sciences (SKCHS), Ananthapur, A.P and Dr. Anilkumar G S, Assistant professor, Department of Spices, Plantation, Medicinal and Aromatic Crops, SKCHS with their vast experience in spices and condiment crops have brought their scientific and practical experience in collating and presenting the information quite concisely.

This narration of diverse spices and condiments in a solitary book would be quite informative and useful to a wide spectrum of readers. It gives me immense pleasure to present this book to all those who are passionate about spices and condiments - technologists, industrialists, extension workers, policy makers, farmers, researchers, teachers and students.

I congratulate the editors for their earnest efforts in bringing out this publication.



(Dr.K.Gopal)

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