

# Preface

Food and energy security are the most critical subjects for the sustenance of modern civilization. In view of the depleting oil resources and negative environmental impacts associated with the use of fossil fuels, there is a renewed interest in renewable biofuels, which can form the swivel for sustainable development in terms of socio-economic and environmental considerations. As it is a locally available resource, and there is a possible utilization at the local level, the developing nations are set to gain. Biofuel production and consumption in many developing countries like India, Philippines, Indonesia, Argentina, Nigeria, and Mozambique is at the nascent stage and are evolving. For example, India approved the National Policy on Biofuels on December 24, 2009, which envisaged the use of renewable energy resources as an alternate fuel to supplement transport fuels and proposed an indicative target of 20 % blending of biofuels by 2017. The bioethanol blending programme followed in India has two major bottlenecks; first, there is lack of sufficient ethanol for blending, and second, the purchase price of ethanol is low. It is anticipated that sooner these two issues will be addressed. The biofuel policy also identified sweet sorghum as a unique biofuel feedstock due to its potential to supply food, feed, and fodder simultaneously.

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) has a BioPower initiative that aims to empower the dryland poor to benefit from, rather than be marginalized by, the biofuels revolution. The Institute has developed diverse and improved sweet sorghum varieties, female hybrid parents, and hybrids that can be used as feedstock sources for bioethanol production. The fodder quality is good and nutritious for livestock. The Indian National Agricultural Research System (NARS) started working on sweet sorghum to produce sugar in mid-1980s to augment sugar production. However, this effort could not succeed due to crystallization problems with sweet sorghum juice. Since then many varieties like SSV 74, SSV 84, and RSSV 9 and also a hybrid, CSH 22SS were released to explore for bioethanol production as well as for fodder use.

This book on the characterization of tropical sweet sorghum chronicles sweet sorghum history, comparative performance with other competing feedstocks, breeding efforts, morpho-biochemical traits of rainy and post-rainy season adapted cultivars

(supported by colored photographs for easy identification) besides the status of commercialization which is described in five distinct chapters.

Written by highly experienced scientists from ICRISAT and CSIR-Indian Institute of Chemical Technology (CSIR-IICT), this lucid and comprehensive publication is a valuable source of information on the genesis and progress of sweet sorghum research and morpho-biochemical traits of tropical sweet sorghums. It will serve as an important source of reference to researchers, students, entrepreneurs, policymakers, and other stakeholders in India and in many developing countries as well.

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