COTTON SEED AND SEEDLINGS

THE COTTON FOUNDATION

Reference Book Series

The Cotton Foundation was created in 1955 to foster research and education for the cotton industry. Supported by membership dues and grants from agribusiness firms, the Foundation plays an integral role in focusing attention to high priority research and education needs. Foundation members include the world's finest manufactures and suppliers of cotton machinery, plant health products, transgenic technologies, planting seed, testing instruments, processing materials; and consulting, financial and communications services

The alliance of agribusiness and the cotton industry strengthens the ability of both to reach common objectives – enhance markets and profitability. Understanding that sales and service are ultimately linked to the vitality of the cotton industry, corporate suppliers support the Foundation with dues and special earmarked grants. The Foundation's offices are located at the National Cotton Council's headquarters in Cordova, Tennessee.

We are pleased to publish ***COTTON SEEDS AND SEEDLINGS***, the tenth in the series of cotton reference books. The first volume, ***COTTON PHYSIOLOGY*** was published in 1986; the second, ***WEEDS OF COTTON: Characterization and Control*** was published in 1992; the third, ***COTTON INSECTS AND MITES: Characterizations and Management***, was published in 1996; the fourth volume, ***VEGETABLE OILS AND AGROCHEMICALS*** became available in 1994; the fifth volume, ***COTTON HARVEST MANAGEMENT: Use and Influence of Harvest Aids*** and the sixth volume, ***BOLL WEEVIL ERADICATION IN THE UNITED STATES THROUGH 1999*** were both published in 2001; the seventh volume, ***STRESS PHYSIOLOGY IN COTTON*** was published in 2011; the eighth volume, ***FLOWERING AND FRUITING IN COTTON*** was published in 2012; and the ninth volume, ***LINKING PHYSIOLOGY TO MANAGEMENT*** was published in 2016.

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Delivering innovation to the farm starts with research and development. Bayer annually invests more than $1 billion to develop the most robust pipeline of products in the industry. Today, Bayer researchers throughout the world are actively working to discover, develop and deliver the next generation of agricultural products so farmers can get more out of each acre of farmland. Everything Bayer does is aimed at helping to make agriculture more productive and more profitable for farmers, as well as more efficient and more sustainable for our earth.

Bayer is proud to be a member of The Cotton Foundation and sponsor of ***COTTON SEEDS AND SEEDLINGS***, the tenth book in The Cotton Foundation's cotton reference book series. The sponsorship is a reflection of the company's belief that continued support of the development of technologies and materials that promote the production of more cost-effective, higher yielding cotton, will make a stronger cotton industry.

The editor and contributors of ***COTTON SEEDS AND SEEDLINGS*** are indebted to Charlie Yarwood for preparation and page setting of the manuscripts for publication. In addition, grateful acknowledgement is made to all that provided assistance to the contributors and to the peer reviewers of the chapters.

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FOREWORD

The Cotton Foundation Reference Book Series started with the publication of *COTTON PHYSIOLOGY* in 1986, edited by J.R. Mauney and J.M. Stewart, followed by a second book, *PHYSIOLOGY OF COTTON*, edited by J.M. Stewart, D.M. Oosterhuis, J.J. Heitholt, and J.R. Mauney published in 2010. In order to facilitate timely publication of pertinent information to the cotton community as a whole, this series has been continued using a smaller book format. Each book is focused on a particular topic within the study of cotton physiology. The books will be published in book form (hard copy) as well as on digitally under the auspices of the National Cotton Council as a continuation of the original Cotton Physiology book published in 1986. Each book has incorporated a special symposium on a topic chosen by members of the National Cotton Council, Agronomy and Physiology Conference and held at the Beltwide Cotton Conferences. Prominent speakers are invited to partake in the symposium, and together with additional invited authorities, will make up the subsequent book. The first of small physiology of cotton book series was on *STRESS PHYSIOLOGY IN COTTON* and was published in 2011. The subsequent book was entitled *FLOWERING AND FRUTING IN COTTON* and was published in 2012. *LINKING PHYSIOLOGY TO MANAGEMENT* was published in 2015. A symposium was held at the Beltwide Cotton Conferences in San Antonio in January 2013 and the subsequent book entitled *COTTON SEED AND SEEDLINGS* will be published in 2020.

PREFACE

As noted in the foreword, a substantial amount of information is available on the physiology of the cotton plant. It has long been recognized that productivity is influenced by genotype, management, and environment, and in the aforementioned books and other reviews on cotton physiology not mentioned herein, it has been argued that profitable cotton production hinges on a thorough understanding of the underlying physiological mechanisms that influence a given cotton genotype's response to management and environment. Therefore, it is the goal of the current book to clearly demonstrate how the physiology of the cotton crop dictates management decisions and how management decisions impact the physiology, growth, development, and yield of the cotton crop. Particular chapter foci include *Remote Sensing for Nitrogen Management*, *Plant-Insect Interactions and Cotton Development*, *Seeds and Planting*, *Irrigation Timing and Application Methods for Improving Water Use Efficiency*, *Plant-Based Irrigation Scheduling in Cotton*, and *Physiology of Host-Pathogen Interaction in Wilt Diseases of Cotton in Relation to Pathogen Management*. The interdisciplinary approach taken with the current book should highlight the importance of physiology in forming management decisions for multiple, seemingly disparate, aspects of the cotton production system.

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