COTTON
AGRONY

A Series of Monographs

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FOREWORD

Cotton is a unique crop species that has been a participant in many epics of history. It is one of only a few species that were domesticated in both the Old and New Worlds. Cotton was central to the success of the industrial revolution in Northern Europe, and it was a major thread that wove through the development of colonial empires. Cotton played a major role in the U.S. Civil War and in the economic recovery of the South after the war.

Cotton also has participated in the development of several technologies. The saw gin, which separates lint from seeds, permitted cotton to become a fiber for the masses. Competition from man-made synthetic fibers resulted in the development of processing technology that made cotton into a "wash-and-wear" fabric. Also, the myriad of insect pests and diseases that attack cotton spawned "Integrated Pest Management," a technology for the combined use of biological, mechanical, and chemical agents of control.

In plant research, cotton has shared in the establishment of many principles. Cytogenetic studies on cotton have prompted similar research on other species and provided the knowledge needed for the introgression of genes from ancestral and sister species. The elucidation of the nature of insect tolerance in cotton has led to new techniques in resistance breeding of crop species.

Yes, cotton is unique—it has survived history, been central to development of technologies, and played key roles in plant research. In the monograph, all aspects of cotton are discussed. The taxonomy, morphology, and physiology of this species are major topics of discussion; its genetics and the breeding of superior cultivars are treated thoroughly; growing and harvesting the crop are subjects examined; and the techniques of processing cotton and the crop’s impact on world trade are presented.

The American Society of Agronomy, the Crop Science Society of America, and the Soil Science Society of America are pleased to be the sponsors and publishers of the Cotton monograph. This compendium of the literature on cotton will provide a knowledge base for scientists who work in agronomic, crop, and soils research. It is a scholarly treatise from which new insights in plant research will occur, and a knowledge platform from which new cotton research and technologies will grow.

Kenneth J. Frey, President
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Crop Science Society of America

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PREFACE

Cotton is at once a fiber, food, and feed crop. The cotton plant is a warm-season woody perennial shrub that is grown as an annual field crop. Worldwide, over 30 million ha of cotton are grown between 47° N and 32° S Lat with over 50% of the production above 30° N Lat. From these crop plants comes cotton lint, an industrial raw material. Thus a renewable agricultural resource enters into competition with synthetic fibers in the textile industry. These crop plants produce not only lint but also the world's second most important oilseed.

Cotton has played a great role in the economy and politics of the world. Today the increased trade in grains and competition from synthetic fibers has reduced cotton's relative importance, but its world consumption continues to grow. Cotton will continue to be a significant commodity in future world trade.


The editorial committee met and enthusiastically developed a comprehensive subject matter outline and limited the monograph to a single volume treating the major subject matter areas.

The monograph starts with the history of cotton. Succeeding chapters treat the biology of the plant and the production of the crop. The remaining chapters are concerned with the industrial utilization of fiber and seed and the economics of cotton. The intent was to produce a timely monograph that would serve to introduce the world of cotton to those unfamiliar with the complexity of this agricultural-industrial commodity and to provide a technical reference for cotton specialists.

The Editors wish to thank the editorial committee for their assistance and contributions and to especially thank the authors for their dedicated efforts that produced the substance of this endeavor.

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