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INTRODUCTION TO CROP PROTECTION

Cover: Biology of the types of pests discussed in Chapter 2.

INTRODUCTION TO CROP PROTECTION

W. B. Ennis, Jr., Editor

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FOREWORD

The accelerated pace of research, augmented by sophisticated instrumentation and techniques, and new opinions, imparts to crop science a rapidly changing character as new discoveries replace and/or add to former concepts. New findings force us to reevaluate and often reconstruct the foundations on which crop science rests.

The Teaching Improvement Committee of the Crop Science Society of America identified the urgent need for developing contemporary reading materials aimed at upper level undergraduate college students. A current presentation of the dynamic state of modern crop science is a formidable challenge worthy of the best talents of eminent research and teaching personnel in the field. This task necessitates assembling the most capable representatives of the various disciplines within crop science and bringing them together in teams of writers to prepare a series of publications based on contemporary research. The Crop Science Society of America and the American Society of Agronomy have undertaken this large assignment by selecting more than 100 specialists who will contribute to making the Foundations of Modern Crop Science books a reality.

The authors and editors of this series believe that the new approach taken in organizing subject matter and relating it to current discoveries and new principles will stimulate the interest of students. A single book cannot fulfill the different and changing requirements that must be met in various programs and curricula within our junior and senior colleges. Conversely, the needs of the students and the prerogatives of teachers can be satisfied by well-written, well-illustrated, and relatively inexpensive books planned to encompass those areas that are vital and central to understanding the content, state, and direction of modern crop science. The Foundations for Modern Crop Science books represent the translation of this central theme into volumes that form an integrated series but can be used alone or in any combination desired in support of specific courses.

The most important thing about any book is its authorship. Each book and/or chapter in this series on Foundations for Modern Crop Science is written by a recognized specialist in his discipline. The Crop Science Society of America and the American Society of Agronomy join the Foundations for Modern Crop Science Book Writing Project Committee in extending special acknowledgment and gratitude to the many writers of these books. The series is a tribute to the devotion of many important contributors who, recognizing the need, approach this major project with enthusiasm.

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PREFACE

The term, "Crop Protection," has become of increasing significance with the advent of improved and complex technology for protecting crops against different kinds of pests. This book intends to acquaint undergraduate students with the principles and the complexities of integrating all the technologies required to provide a total crop protection.

The writing of this book involved the efforts of over 50 scientists representing a large number of disciplines concerned with one or more important aspects of protecting crops against pests. An attempt is made to bring together some of the current thinking pertaining to the integration of various approaches and technologies into comprehensive crop protection systems whose aims are not only to reduce losses caused by pests, but also to preserve a quality environment. Modern communications, transportation, effective and safe pesticides, computers, biocontrol agents, and other technologies allow us to devise total crop protection programs not considered attainable a few years ago.

The information presented, together with the suggested readings, will introduce the reader to emerging techniques, concepts, and components of crop protection systems. The contributors to this book are eminent scientists in their fields of specialization. Thus the student has an opportunity to capitalize on the expert knowledge of specialists.

Special thanks is due a Steering Committee who provided invaluable assistance for this book. This committee was a multidisciplinary group that helped develop the format and content for the book, select the authors, and review the adequacy of each chapter. In addition, internationally known scientists helped coordinate different parts of the book. The coordinators worked with the authors of the various chapters in writing detailed outlines of the subject matter and reviewing the manuscripts before they were submitted to the editor. I cannot over-emphasize the inestimable contributions of the Steering Committee and the substantial assistance of the coordinators throughout the writing of this book.

Grateful acknowledgment is made of the outstanding contributions of the many authors who cooperated so effectively in writing the different chapters. The manner in which so many scientists joined together in this undertaking is a successful example of multidisciplinary cooperation. Such cooperation will be required increasingly to cope with the emerging and future complexities of devising and implementing integrated crop protection methodology for pests of all kinds.

The assistance of Mrs. Betti Patterson, Secretary, Agricultural Research Center, Ft. Lauderdale, in retyping, editing, and organizing the different parts of the book is acknowledged with appreciation.

W. B. Ennis, Jr.

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