

BOOK REVIEWS

Vegetable Crop Pests

Roderick G. McKinlay [ed.]
CRC, Boca Raton, FL, 1992
406 pp., \$89.95
ISBN: 0-8493-7729-3

VEGETABLES AND THEIR CULTIVARS are a taxonomically and agriculturally diverse plant group containing annuals and perennials grown under diverse environmental conditions. Worldwide, vegetable production is second only to cereal crops. Because of the diversity of vegetables both in plant chemistry and the environments in which they are grown, there is a corresponding diversity in the invertebrate pests which attack them. Those of us involved in insect pest management of vegetables have been frustrated by not having a single source for information about the invertebrate pests of cultivated vegetables. This book attempts to fill that void. Its emphasis, as noted in the preface, is primarily the pest problems of temperate vegetables.

Vegetable Crop Pests is a very readable book organized around specific vegetable types and their pests. The introductory chapter, written by T. H. Coaker, provides a brief but concise summary of the classification and production of vegetables, their invertebrate pests, and management strategies to control the pests. The introduction is followed by eight chapters written by renowned workers who specialize on specific crop types (e.g., solanaceous, cruciferous, etc.). Each chapter begins with an introduction on the crop type, its use, its invertebrate pests; and more detailed sections on specific pests follow. The sections on pests are further divided into groupings (e.g., aphids, beetles). Specific pests are listed within each grouping. Information on a specific pest consists of its geographical distribution, life cycle, plant damage, and control. Depending on the crop, specific pests include insects, mites, nematodes, and slugs.

McKinlay remarks in the preface that this "authoritative reference . . . should be of value to students of agriculture and horticulture as well as researchers involved in the study of vegetable crops world-wide." In my opinion, the book goes a long way to achieving that end, although some caveats should be mentioned. The most important of these results from the fact that 3 of the 15 authors are from North America, whereas 11 are from the UK and 1 is from India. As a result, the book emphasizes pests and research from the UK and Europe. In some cases, serious pests in other temperate areas of the world are not mentioned; in other cases, sampling methods, thresholds, and control tactics developed in North America and other temperate parts of the world are omit-

ted. In addition, because the sections on control include specific insecticides, there are cases in which insecticides are listed which cannot be used in the United States (e.g., pirimicarb).

The quality of the chapters varies, although the structure of each chapter requires the authors to adhere to the same format (i.e., insect distribution, life history), and include the same general type of information. Individual authors, however, differ in the emphasis they place on such topics as sampling and thresholds, biological control, or host plant resistance although information on these topics is available in the literature and should be contained in each chapter. The quality of the black and white photographs and illustrations also varies considerably; several illustrations are of very poor quality. Other problems in this book include not having citations noted in the text for the crucifer section, although a section entitled "References and Bibliography" is included at the end of that chapter.

I was surprised that this book provides specific recommendations for pesticide use in each chapter. Although I presume that the intent of the authors was to give the current state on control recommendations, pesticides legal to use at the time of printing may no longer be legal. In addition, the only disclaimer regarding the legality of pesticide use and recommendation is a small note on page iv. No one should use the pesticide control remarks in this book without consulting a pesticide reference guide and the pesticide label. As a result, it may have been more valuable in the long run to eliminate specific pesticide names and concentrate more on general pesticide techniques (e.g., banding, foliar, baits), sampling and threshold methods, application techniques, and expand the biological and cultural control sections.

Despite these concerns, this book can be a valuable resource for those in general horticulture as well as entomology. I know that I will keep it within easy reach on my shelf. The primary benefit of this book is that it provides a compilation of the geographic distribution, life cycle and plant injury of each pest for specific crops. In that way it is similar to *Destructive and Useful Insects* by Metcalf et al. However, *Vegetable Crop Pests* focuses on vegetable pests only and as such is more detailed and more current. In the future, the ESA plans to create a series of publications like the excellent compendium series on diseases of specific crops published by the American Phytopathological Society. If such compendia are published, it is likely that much of the information would overlap with this book and comparisons of the advantages and disadvantages of each would have to be made. At present,

however, this book is the only reference for invertebrate pests of vegetable crops in the temperate areas. For entomologists just beginning research in a specific vegetable crop, this book would be a good tool for obtaining an overall view of the pests of the crop as well as providing an initial literature review.

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Cocoa Pest and Disease Management in Southeast Asia and Australasia

P. J. Keane & C.A.J. Putter [eds.]
Food and Agriculture Organization, Rome, 1992
223 pp., \$25
ISBN 92-5-103039-1

COCOA IS AN IMPORTANT cash crop that is indigenous to the Andes and the Amazon basin of the Americas. This crop has been cultivated in this tropical region for more than 3,000 yr. This collection of papers presents the major constraints to cocoa production in the Americas and its unique pest problems as an introduced crop in Southeast Asia and Australasia. Because most disease and pest problems did not coevolve with cocoa in Asia, this introduced status of cocoa presents Asian and Australasian researchers with the challenging problems addressed in this book. It will be of particular use to plant production and protection specialists including plant managers and extension personnel involved in cocoa production. Most of the papers are by specialists from Indonesia, Malaysia, Papua New Guinea, Australia, the Philippines, and South Pacific Islands.

Cocoa Pest and Disease Management describes constraints to cocoa production, basic research, case histories, and policy issues. Many of the articles deal entirely with cocoa diseases; others present our current knowledge on biology, ecology, control, epidemiology, and fungicide screening results. Four of the book's 24 chapters are devoted to insect pests; six concern both insects and pathogens. Basic cocoa breeding research is presented in three papers, with emphasis on yield and favorable agronomic qualities. In one paper, insect resistance is highlighted as an economical means of providing help to resource-poor smallholders (more than 60% of all cocoa growers).

National policies for cocoa development and protection in Indonesia are the focus of two papers. Issues including provision of extension and seed distribution services, creation and implementation of policies on pest control and quarantine, and use of exotic germplasm are covered in the first paper. The second paper describes production strategies, commodity processing and handling, marketing and credit facilities for

small holders, as well as production of specialty market (fine flavor) cocoas by estates.

Major insect pests in Southeast Asia include mirid bugs (especially *Helopeltis* spp. and *Pseudodoniella* spp.), cocoa pod borer (*Conopomorpha cramerella* [Snellen]), wood boring and leaf feeding beetles, and caterpillars. A paper on integrated pest management in Malaysia provides a list of pests and constraints to growing cocoa seedlings. Various chapters discuss pest control strategies including those presently available, those being developed, and others proposed for the future. Cultural control is given equal attention to chemical control. Some pests (e.g., mirids) appear to be best managed by using pesticides; others (e.g., cocoa pod borer) can be managed primarily with cultural practices. In addition to major pests, the book also contains information on occasional and secondary pest species and methods to control them. Population levels of these secondary pests may be exaggerated by pesticide misuse or overuse.

Ecological complexities of control, especially the influence to surrounding vegetation on pest populations, are discussed in two chapters. For example, shade trees are important to the survival of cocoa seedlings and in deterring mirids; however, these trees can exasperate certain disease problems. Classical biological control methods have generally been unsuccessful according to one article from Indonesia, but the augmentation and conservation of indigenous natural enemies is considered to be economical, practical, and effective.

From resource-poor small holders to commercial estates and plantations, there are distinct differences among cocoa growers in Asia. Although resources are important in promoting IPM strategies, only one paper describes insect control tactics accordingly. Although the book reflects a diversity of perspective, a more orderly organization would enhance the quality and utility of this book. For example, except for the title, the last paper (25) is identical to a previous paper (23). Despite these mechanical weaknesses, this book is an important cross-disciplinary compilation of practical information and advice on cocoa in Southeast Asia from policy to production.

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EPA's Pesticide Fact Sheet Database (software)

M. M. Walker & L. H. Keith
Lewis Publishers, Chelsea, MI, 1992
22 pp., \$295
ISBN 0-87371-663-9

ANOTHER TOOL in pesticide information databases has become available with the release of