

How to Use This Handbook

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This handbook is designed primarily for practitioners of integrated pest management (IPM) programs in corn, including growers, crop consultants, extension agents, and company agronomists and sales representatives. However, students and researchers also will find valuable information in this handbook. Our primary objective is to provide fundamental and useful information about management of corn insects throughout the United States and Canada. Although this handbook focuses on insect pests of corn, noninsect pests (e.g., mites, symphylans, and slugs) also are covered. The first three sections of the handbook provide information about corn and corn production, principles and practices of corn insect management, and an overview of the pests that occur in corn, including insects, weeds, plant pathogens, birds, and mammals. The remainder of the handbook is devoted to discussions of insects and related pests of corn and to beneficial organisms. Authors are identified at the end of each section, and a list of references for additional information is provided for most sections. A glossary provides definitions for unfamiliar words. A section on sources of local information provides addresses of entomology departments throughout the United States and Canada.

Identification of Insects and Diagnosis of Injury

The introduction to identification of insects and diagnosis of injury (page 22) explains how to use the list of corn insect pests grouped by injury classification, the key to corn injury caused by insect pests, and the key to corn pests. The list and keys provide directions to sections in the handbook in which color photographs of

the insects and examples of injury to corn accompany detailed discussions about the pests. The keys and the color photographs provide assistance for identifying insects and diagnosing injury caused by insects in corn. Unknown insects and unfamiliar symptoms of injury often can be identified first by using the keys and then by comparing specimens with the color photographs.

Insect Pests of Corn and Their Management

Insect pests that attack corn are discussed in sections arranged alphabetically by common name for easy reference. Within each section, information is provided on scientific classification, origin and distribution, description (aids in identification), pest status (relative importance of the pest), injury (aids in diagnosis), life history, and management.

Suggestions for management are included as an overview of control tactics that are effective for a specific pest. If insecticides are useful for managing a pest, they are mentioned, but trade names are not identified. Economic thresholds, when known, also are provided. However, economic thresholds may vary from one region of North America to another. Refer to a state's Cooperative Extension Service guidelines for management of insects in corn and to obtain information about specific insecticides and regionally accepted economic thresholds.

Beneficial Organisms

The section on beneficial organisms, including insect pathogens (entomopathogens), parasitoids, and predators, provides information about their potential for natural or applied biological control of corn insect pests. The information varies among organisms because of their diversity. However, a genuine attempt was made to include all or most of the following information for each organism: scientific classification, origin and distribution, description, biology or life history, degree of natural control, sampling methods (where appropriate), potential for biological control, and effects of crop or insect management on the organism. Tables in some sections list the corn insect pests infected (pathogens), parasitized, or preyed upon by the different beneficial organisms.