

Preface

In this era of emphasis on food safety and security, high-volume food processing and preparation operations have increased the need for improved sanitary practices from processing to consumption. This trend presents a challenge for the food processing and food preparation industry.

Sanitation is an applied science for the attainment of hygienic conditions. It is receiving additional attention from those in the food industry. During the past, inexperienced employees with few skills who have received little or no training have been given sanitation tasks. Still, sanitation employees should have knowledge about the attainment of hygienic conditions. In the past, these employees, including sanitation program managers, have had only limited exposure to this subject. Technical information has been limited primarily to a number of training manuals provided by regulatory agencies, industry and association manuals, and recommendations from equipment and cleaning compound firms. Most of this material lacks specific information about the selection of appropriate cleaning methods, equipment, compounds, and sanitizers for maintaining hygienic conditions in food processing and preparation facilities.

The purpose of this text, as with previous editions, is to provide sanitation information

needed to ensure hygienic practices and safe food. Sanitation is a broad subject; thus, principles related to contamination, cleaning compounds, sanitizers, and cleaning equipment, as well as specific directions for applying these concepts to attain hygienic conditions in food processing or food preparation operations, are discussed.

The discussion starts with the importance of sanitation and also includes information about regulations. Increased concerns about biosecurity necessitated the need to add Chapter 2, which addresses this subject. To enable the reader to understand more fully the fundamentals of food sanitation, Chapter 3 is updated and devoted to microorganisms and their effects on food products. Current information is provided on pathogenic microorganisms and rapid microbial determination methods. The ubiquity of allergens and concern of those affected suggested the need to add Chapter 4 on this subject. A discussion of contamination sources and hygiene has been updated (Chapters 5 and 6), including how management can encourage improved sanitation. Chapter 7 provides updated information on Hazard Analysis Critical Control Points (HACCP).

Chapter 8 is about quality assurance (QA) and sanitation. Updated information given here presents specific details on how to

organize, implement, and monitor an effective program.

Chapter 9 discusses cleaning compounds and contains current information on this subject. It examines characteristics of soil deposits and identifies the appropriate generic cleaning compounds for the removal of various soils. Also, it looks at how cleaning compounds function, identifies their chemical and physical properties, and offers information on their appropriate handling. Because of the importance of sanitizing, Chapter 10 discusses updated information about sanitizers and their characteristics. Specific generic compounds for various equipment and areas, as well as updated information on such compounds, are discussed.

Chapter 11 provides updated information on cleaning and sanitizing equipment best suited for various applications in the food industry. It provides detailed descriptions, including new illustrations of most cleaning equipment that may be used in food processing and food preparation facilities.

Current waste product handling, which remains a major challenge for the food industry, is discussed in detail in Chapter 12. This chapter contains updated information about the treatment and monitoring of liquid wastes. Pest control is another problem for the food industry. Chapter 13 provides updated discussion about common pests found in the food industry; their prevention, including chemical poisoning; Integrated Pest Management (IPM) and biological control; and the potential advantages and limitations of each method. New information

about sanitary design and construction is reviewed in Chapter 14.

Because sanitation is so important in low-moisture food processing, dairy, meat and poultry, seafood, fruit and vegetable, and beverage plants, a chapter is devoted to each of these areas. Chapters 15 through 20 present updated information on plant construction, cleaning compounds, sanitizers, and cleaning equipment that applies to those segments of the industry. These chapters provide the food industry with valuable guidelines for sanitation operations and specific cleaning procedures.

Chapter 21 is devoted entirely to current sanitation information for the foodservice industry. It provides instructions on how to clean specific areas and major equipment found in a foodservice operation.

Effective management practices can promote improved sanitation, a topic addressed in Chapter 22. The intent is not to provide an extensive discussion of management principles, but to suggest how effective management practices can improve sanitation.

This book is intended to provide an updated and concise discussion about sanitation of low-, intermediate-, and high-moisture foods. It can be used as a text for college students and in continuing education courses about sanitation. It will serve as a reference for food processing courses, industry-sponsored courses, and the food industry itself.

Appreciation is expressed to those organizations that provided figures to give further insight to information discussed. Also, I remember the support of my loving wife during the preparation of this revised edition.



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