

Table of contents

Preface xv

About the Authors xvii

SECTION 1 BASICS OF FOOD MICROBIOLOGY

Chapter 1 The Trajectory of Food Microbiology 3

Chapter 2 Microbial Growth, Survival, and Death in Foods 13

Chapter 3 Spores and Their Significance 49

Chapter 4 Detection and Enumeration of Microbes in Food 69

Chapter 5 Rapid and Automated Microbial Methods 81

Chapter 6 Indicator Microorganisms and Microbiological Criteria 99

SECTION 2 FOODBORNE PATHOGENIC BACTERIA

Chapter 7 Regulatory Issues 121

Chapter 8 *Bacillus cereus* 145

Chapter 9 *Campylobacter* Species 157

Chapter 10 *Clostridium botulinum* 167

Chapter 11 *Clostridium perfringens* 189

Chapter 12 Enterohemorrhagic *Escherichia coli* 203

Chapter 13 *Listeria monocytogenes* 223

Chapter 14 *Salmonella* Species 243

Chapter 15 *Shigella* Species 261

Chapter 16 *Staphylococcus aureus* 271

Chapter 17 *Vibrio* Species 285

Chapter 18 *Yersinia enterocolitica* 297

SECTION 3 OTHER MICROBES IMPORTANT IN FOOD

Chapter 19 Lactic Acid Bacteria and Their Fermentation Products 311

Chapter 20 Yeast-Based and Other Fermentations 327

Chapter 21 Spoilage Organisms 343

Chapter 22 Molds 373

Chapter 23 Parasites 391

Chapter 24 Viruses and Prions 427

#### SECTION 4 CONTROL OF MICROORGANISMS IN FOOD

Chapter 25 Chemical Antimicrobials 457

Chapter 26 Biologically Based Preservation and Probiotic Bacteria 475

Chapter 27 Physical Methods of Food Preservation 489

Chapter 28 Nonthermal Processing 507

Chapter 29 Sanitation and Related Practices 527

Critical Thinking Skills 549

Useful Websites for Food Safety Information 553

Glossary 555

Answers to Crossword Puzzles 565

Answers to Selected Questions for Critical Thought 567

Index 585