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Processing; 13. Fruits, Vegetables, and Nuts; 14. Beverages; 14.1 Alcoholic Beverages; 14.2 Carbonated Beverages; 14.3 Bottled Water; 14.4 Fruit and Vegetable Juices; 14.5 Milk and Milk Products; 14.6 Pasteurization; 15. Canned Foods; 16. Food Service/Restaurants; 17. Export Foods; 18. Imported Foods; 19. Conclusions; 20. Acronyms; References; 3 Food Safety Engineering; 1. Introduction; 2. Intervention Technologies; 2.1 Novel Non-Thermal Intervention Technologies; 2.1.1 High-Pressure Processing 2.1.2 Pulsed Electric Field Processing 2.1.3 Irradiation; 2.1.4 Ultraviolet Disinfection; 2.2 Chemical Interventions; 2.2.1 Ozone; 2.2.2 Other Chemical Interventions; 2.3 Hurdle Approach; 3. Control/Monitoring/Identification Techniques; 3.1 Chromogenic Microbiological Media; 3.2 Molecular and Immunological Assays Methods; 3.2.1 DNA Probe Methods; 3.2.2 Polymerase Chain Reaction Assays; 3.2.3 ELISA; 3.3 Biosensors; 3.4 Fourier Transform Infrared Spectrometry; 4. Packaging Applications in Food Safety; 4.1 Active Packaging; 4.2 Intelligent or "Smart" Packaging; 4.3 Tamper Evident Packaging 5. Tracking and Traceability 6. Byproducts of Processing; 6.1 Acrylamide; 6.2 3-MCPD; 7. Conclusions; Acknowledgment; References; 4 Farm Machinery Automation for Tillage, Planting Cultivation, and Harvesting; 1. Introduction; 2. Vehicle Guidance; 2.1 Guidance Strategies; 2.1.1 Manual Vehicle Guidance; 2.1.2 Operator-Assisted Vehicle Guidance; 2.1.3 Semi-Autonomous Vehicle Guidance; 2.1.4 Fully Autonomous Vehicle Guidance; 3. Implement Guidance Systems; 4. Guidance Methods; 4.1 GPS; 4.2 Machine Vision; 4.3 Dead Reckoning; 4.4 Inertial; 4.5 Crop Feelers; 4.6 Furrow Following 5. Challenges Facing Autonomous Vehicles

Sommario/riassunto

Handbook of Farm, Dairy and Food Machinery Engineering is the essential reference for engineers who need to understand those aspects of the food industry from farm machinery to food storage facilities to the machinery that processes and packages our foods. The process of getting food from "farm to fork," as the saying goes, involves more than planting, harvesting, shipping, processing, packaging and distributing-though those are all key components. Effective and efficient food delivery systems are built around processes that maximize the effort while minimizing cost, time,
