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training2.4 The importance of HACCP in food manufacturing: the preventative mindset; 2.4.1 Food design; 2.4.2 Food manufacturing; 2.4.3 Globalization and trade; 2.5 The legal position; 2.6 Closing thoughts; Appendices; Appendix 1: Example of the make-up of an HACCP team; Appendix 2: Example of a product description; Appendix 3: Examples of process flow diagrams; Appendix 4: Hazard analysis tool as an example guide; Appendix 5: Examples of hazard analysis and CCP decision logic; Appendix 6: Example of the HACCP control chart References3 Thermal Processing; 3.1 Introduction; 3.2 Product classification; 3.3 Microbial destruction; 3.3.1 End-point thermal death time curve; 3.3.2 Survivor curve; 3.3.3 Thermal resistance curve; 3.4 Cold-spot temperature histories; 3.5 Lethality calculations; 3.5.1 The general method; 3.5.2 Other calculation methods; 3.6 Quality attributes; 3.7 Retort systems; 3.7.1 Steam retorts; 3.7.2 Overpressure retorts; References; 4 Food Chilling; 4.1 Theory; 4.1.1 Effect of chilling on micro-organisms; 4.1.2 Effect of chilling on enzymes and biochemical reactions 4.1.3 Effect of chilling on physical processes4.1.4 Effect of chilling on physiological processes; 4.2 Chilling operations; 4.3 Chilling equipment; 4.3.1 Refrigeration systems; 4.3.2 Moving air; 4.3.3 Direct contact; 4.3.4 Jacketed heat exchangers; 4.3.5 Immersion/spray; 4.3.6 Ice; 4.3.7 Vacuum; 4.3.8 Cryogenic; 4.4 Chilled storage; 4.4.1 Controlled atmosphere storage rooms; 4.5 Transportation; 4.5.1 Overland transport; 4.5.2 Sea transport; 4.5.3 Air transport; 4.6 Retail display; 4.6.1 Unwrapped products; 4.6.2 Wrapped products; 4.7 Conclusions; References; 5 Freezing; 5.1 Introduction 5.2 The physical and chemical aspects of freezing

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#### Sommario/riassunto

This book discusses how the agents of food biodeterioration operate, and examines the commercially-used industrial methods available to control them, allowing the production of safe and wholesome foods. There is an emphasis on the equipment employed to carry out the various methods of preservation.

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