

# Contents

	Important notice concerning the information in this book	iii
	Preface	v
<b>Chapter 1</b>	<b>Why is food safety your concern?</b>	<b>1</b>
	<b>What are the food safety hazards you should know about?</b>	<b>1</b>
	Microbial hazards	1
	Chemical hazards	3
	Physical hazards	4
	<b>Taking responsibility for food safety – it’s the Law</b>	<b>5</b>
	The Australia New Zealand food standards system	5
	<b>The benefits of taking food safety issues seriously</b>	<b>9</b>
	Health and wellbeing of your customers	11
	Viability and growth of your business	13
	Continued popularity of products in your industry sector	15
	Minimising the overall cost to society	16
	Protecting the reputation of Australia’s food industry	17
	<b>Key messages from Chapter 1</b>	<b>19</b>
<b>Chapter 2</b>	<b>Food safety hazards – under the spotlight</b>	<b>21</b>
	<b>Microbial hazards – pathogenic microorganisms and their toxins</b>	<b>21</b>
	Pathogenic foodborne bacteria	22
	Pathogenic foodborne viruses	34
	Parasites	36
	<b>Chemicals – environmental contaminants, food business use or naturally occurring</b>	<b>38</b>
	Government regulations and monitoring	38
	Chemicals hazards in food businesses	39
	Naturally occurring substances	43
	<b>Physical contaminants in food</b>	<b>50</b>
	<b>Key messages from Chapter 2</b>	<b>53</b>

<b>Chapter 3</b>	<b>Controlling food safety hazards – premises and people</b>	<b>55</b>
	<b>Food business premises and equipment</b>	<b>55</b>
	Safe products cannot be made in an unsafe environment	55
	Fit-for-purpose equipment	67
	Cleaning and sanitising	78
	Pest control and animal exclusion	91
	<b>Food safety – the responsibility of all who operate or work for a food business</b>	<b>96</b>
	Staff experience and training	96
	The health of food handlers	98
	Food hygiene essentials	101
	<b>Key messages from Chapter 3</b>	<b>111</b>
<b>Chapter 4</b>	<b>Controlling food safety hazards – your product recipes</b>	<b>113</b>
	<b>Adding acid to food</b>	<b>113</b>
	<b>Reducing the available water in food</b>	<b>120</b>
	<b>When to measure pH and water activity</b>	<b>122</b>
	<b>Adding chemical preservatives</b>	<b>123</b>
	Nitrites and nitrates	123
	Nisin	124
	Sulphur dioxide and sulphites	125
	<b>Combining hurdles to control pathogenic microorganisms</b>	<b>126</b>
	<b>Key messages from Chapter 4</b>	<b>129</b>
<b>Chapter 5</b>	<b>Controlling food safety hazards – your ingredients</b>	<b>131</b>
	<b>Purchasing your ingredients</b>	<b>131</b>
	Purchasing from a supplier – approved supplier programs	131
	Regulatory requirements and product specifications	133
	<b>Steps to follow when receiving deliveries</b>	<b>137</b>
	Goods receipt form	138
	Overview of what to check for	140
	Checking the temperature of potentially hazardous foods	141
	Checking food for adequate protection against contamination	145
	Traceability	145
	<b>Use of your own vehicles when purchasing ingredients</b>	<b>146</b>
	<b>Storing your ingredients safely</b>	<b>147</b>

	Recommended storage practices for different food categories	149
	Food storage containers and covers	153
	Re-packing and portioning bulk ingredients	155
	Stock rotation	155
	Separation of rejected or discarded foods	156
	<b>Key messages from Chapter 5</b>	<b>159</b>
<b>Chapter 6</b>	<b>Controlling food safety hazards – preparing, cooking and cooling safely</b>	<b>161</b>
	<b>The planning phase – it pays to think before you make</b>	<b>161</b>
	<b>Basic steps for safely preparing food</b>	<b>161</b>
	Chilling as you go	163
	Washing and sanitising fruit and vegetables	163
	Thawing frozen foods	165
	Food preparation equipment	166
	Labelling and keeping track of individual components	167
	Making unplanned changes	167
	Clearing and cleaning as you go	168
	Preparing products containing food allergens	168
	<b>Cooking – some like it hot, but not pathogens ...</b>	<b>169</b>
	Commercial sterilisation	170
	Measuring the temperature of food	173
	Pasteurisation	178
	<b>Cooling – now your product is hot you must cool it down ... carefully</b>	<b>188</b>
	Reducing portion sizes before chilling	189
	Chilling equipment	189
	Chilling in appropriate containers	191
	Freezing post pasteurisation	192
	<b>Chilling without a prior cooking step</b>	<b>193</b>
	<b>Microbiological testing provides important evidence</b>	<b>193</b>
	<b>Key messages from Chapter 6</b>	<b>195</b>
<b>Chapter 7</b>	<b>Controlling food safety hazards – packaging, shelf-life and labelling</b>	<b>197</b>
	<b>Packaging your products</b>	<b>197</b>
	Packaging materials	198

	Purchasing packaging	200
	Caring for packaging materials	202
	Temperature control during packaging	204
	Controlling the atmosphere around food	204
	Packaging and heat processed products	207
	Packaging seals and closures	209
	Secondary and tertiary packaging	214
	Using contract packers	214
	<b>Product shelf-life and food safety</b>	<b>216</b>
	Do your products require a use-by or best-before date?	217
	Determining appropriate use-by dates: in house	219
	Determining appropriate use-by dates: technical experts	220
	<b>Labelling your products</b>	<b>224</b>
	Mandatory statements and declarations	224
	Product traceability	229
	Directions for use and storage	230
	Legibility of writing on labels	234
	Minimum recommended labelling	235
	Requirements for unlabelled products	236
	<b>Key messages from Chapter 7</b>	<b>237</b>
<b>Chapter 8</b>	<b>What if something goes wrong?</b>	<b>239</b>
	<b>Food recalls – overview and definitions</b>	<b>239</b>
	Reasons for food recalls	239
	Legal obligations	240
	Initiation of recalls	240
	Levels of recalls	241
	Priorities in the recall process	242
	Notification and reporting requirements	243
	An effective recall requires fast facts	246
	Retrieval of recalled products	246
	The fate of recalled products	246
	<b>Writing a recall plan</b>	<b>247</b>
	Roles and responsibilities	247
	Notification procedures and contact details	248
	Access to production and distribution records	249

	Product retrieval and disposal	250
	Trialling and reviewing the recall plan	250
	<b>Key messages from Chapter 8</b>	<b>251</b>
<b>Chapter 9</b>	<b>Food microbiology: further facts</b>	<b>253</b>
	Sources of information	269
	Useful contacts	275
	Glossary	279