

Index

<u>Index terms</u>	<u>Links</u>
A	
Acetic acid, <i>Escherichia coli</i>	43
Adenovirus	161 165
<i>Aeromonas hydrophila</i>	143
pH	142
temperature	142
water activity	142
Aflatoxicol	105 106
Aflatoxin	102
Aflatoxin B ₁	
carcinogenesis	103 105
relationship between metabolism and toxicology	104
structure	103
Aflatoxin B _{2a}	105 106
Algal toxin	113
Alkaloid	71
Almond	79
<i>Alternaria</i> toxin	111
Amoebiosis	208
distribution	203 209
epidemiology	209
life cycle	209
prevention and control	209
public health significance	209
transmission	209
Amplified fragment length polymorphism	
probiotic strain	245
starter strain	245
Amylolytic enzyme	8

<u>Index terms</u>	<u>Links</u>
Angiostrongylosis	176 178
distribution	176 179
epidemiology	176
life cycle	176 178
prevention and control	176
public health significance	176
transmission	176
Animal origin	4
Anisakiosis	178
distribution	179 180
epidemiology	180
life cycle	180 181
prevention and control	180
public health significance	180
transmission	180
Antibiotic resistance marker, genetic modification	219 227
Antinutritional, defined	71
Apricot	79
Arabinans, structure	9
Astrovirus	161 166
 B	
<i>Bacillus cereus</i>	145
pH	142
temperature	142
water activity	142
Bacteria	141
cleaning	150
contaminated raw materials	149
control of microbial hazards	148
disinfection	150
effect of fermentation processes on survival	147
function in fermentation	7
hazard analysis critical control point	150
limits for growth	142

Index terms**Links**

Bacteria (<i>Continued</i>)		
pathogens of concern in fermented products	142	
presence of pathogens in raw materials	146	
quantitative risk assessment	150	
zoning	149	
Bacterial toxin	112	
Bacteriocin		
classification	45	
lactic acid bacteria	45	
Balantidiosis	210	
distribution	203	210
epidemiology	210	
life cycle	210	
prevention and control	211	
public health significance	210	
transmission	210	
Bean	79	
Beer		
biogenic amine	124	
nitrosamine	133	
Biogenic amine	119	
beer	124	
cheese	124	
dairy product	124	
factors affecting synthesis	122	
in fermented food	122	
fish	123	
formation in food	119	
health effects	125	
histamine	125	
meat	124	
microorganisms producing	121	
precursors	119	120
produced during processing	119	
vegetable	124	

<u>Index terms</u>	<u>Links</u>
Biogenic amine (<i>Continued</i>)	
wine	124
Bioprocessing operations	16
Biotechnology, food	239
Biotin	5
Blastocystosis	209
distribution	203 210
epidemiology	210
life cycle	209
prevention and control	210
public health significance	209
transmission	210
Bongkrek poisoning	112
Bongkrekic acid	112
 C	
Calcium	5
Calicivirus	161
Camembert surface-ripened cheese	
flow diagram	38
process condition	38
<i>Campylobacter</i>	143
pH	142
temperature	142
water activity	142
Capillariosis	181
distribution	179 182
epidemiology	182
life cycle	182
prevention and control	182
public health significance	181
transmission	182
Carbon	5
Carbon dioxide, lactic acid bacteria	46

Index terms**Links**

Carcinogenesis, aflatoxin B ₁	103	105
Cassava root		
flow diagram	21	22
household processing	84	
industrial processing	85	
process condition	21	22
Cellulase	12	
Cereal beer		
flow diagram	23	
process condition	23	
Cereal bread		
flow diagram	25	
process condition	25	
Cestode	187	
distribution	179	
main hosts	179	
source of infection	179	
Cheddar cheese, hazard analysis critical control point	266	
Cheese		
biogenic amine	124	
genetic modification	222	
safety evaluation	232	
hazard analysis critical control point	266	
histamine	120	
Chemical hazard		
endogenous compound	71	
toxin	101	
Cleaning	15	
bacteria	150	
safety	40	
Clonorchiosis	192	
distribution	192	194
epidemiology	192	
life cycle	192	193
prevention and control	192	

<u>Index terms</u>	<u>Links</u>
Clonorchiosis (<i>Continued</i>)	
public health significance	192
transmission	192
<i>Clostridium botulinum</i>	145
pH	142
temperature	142
water activity	142
Codes of Good Manufacturing Practice	54
Codes of Hygiene Practice	54
Codex Alimentarius Commission	
GATT Uruguay Round of Multilateral Trade Negotiations	57
hazard analysis critical control point	53
World Trade Organization Agreement on Sanitary and Phytosanitary Measures	57
Commercial food enzyme, recombinant DNA technology	221
Commercial sterility	16
Composition, fermented fish product	48 49
Convicine	76
characterized	76
risks	82
Cooling	16
Cryptosporidiosis	200
distribution	202 203
epidemiology	202
life cycle	202
prevention and control	204
public health significance	200
transmission	202
Cucurbitacin	77
characterized	77
Cured food, nitrosamine	131
Cyanobacterial toxin	113
Cyanogenic glycoside	72
acute intoxication	78
characterized	72

Index terms**Links**

Cyanogenic glycoside (<i>Continued</i>)		
chronic intoxication syndromes	78	
risks	77	
Cyanoginosin	113	114
Cyclosporiosis	204	
distribution	203	204
epidemiology	205	
life cycle	204	
prevention and control	205	
public health significance	204	
transmission	205	
Cysticercosis	188	
distribution	179	190
epidemiology	190	
life cycle	190	191
prevention and control	190	
public health significance	188	
transmission	190	
D		
Dairy product, biogenic amine	124	
Degradation		
enzyme	87	
microorganism	87	
Degradation products	86	
Deoxynivalenol	109	
Diacetyl, lactic acid bacteria	47	
Dioctophymosis	182	
distribution	179	182
epidemiology	182	
life cycle	182	
prevention and control	183	
public health significance	182	
transmission	182	

<u>Index terms</u>	<u>Links</u>
Diphyllobothriosis	187
distribution	179 188
epidemiology	188
life cycle	188 189
prevention and control	188
public health significance	188
transmission	188
Disinfection, bacteria	150
E	
Echinostomosis	193
distribution	194 195
epidemiology	195
life cycle	195
prevention and control	195
public health significance	195 196
transmission	195
Endogenous compound	71
Enzootic hematuria	76
Enzyme	8
degradation	87
degrading cell wall components	9
genetic modification	
risks	228
safety evaluation	229 232
<i>Escherichia coli</i>	144
acetic acid	43
lactic acid	43
pH	142
temperature	142
water activity	142
<i>Escherichia coli</i> O157:H7	144
Ethanol, lactic acid bacteria	47
Ethyl carbamate	126
applications	128

Index terms**Links**

Ethyl carbamate (<i>Continued</i>)		
factors affecting synthesis	128	
formation	127	
health effects	129	
Ethyl carbamide	126	
produced during processing	119	
Eukaryote algal toxicosis	114	
F		
Fasciolopsiosis	197	
distribution	194	197
epidemiology	197	
life cycle	197	
prevention and control	197	
public health significance	196	197
transmission	197	
Fasciolosis	195	
distribution	194	195
epidemiology	197	
life cycle	195	
prevention and control	197	
public health significance	195	
transmission	197	
Fermentation		
applications	253	
factors	255	
food fermentation components	4	
enzyme	8	
food ingredients	4	
microorganism	6	
importance in public health	257	
industrialized societies	1	2
pitfalls	255	
processes	14	
tropical developing regions	1	2

<u>Index terms</u>	<u>Links</u>
Fermented fish product	
composition	48 49
shelf life	48 49
Fermented food	
diversity	13
food safety	
practical intervention	259
supply chain	221
food-borne disease	255
genetic modification	
functional microorganisms	224
now in market	224
research needs	271
Fermented sausage	
fermentation process validation	152
microbiological challenge test	153
carrying out	154
<i>Escherichia coli</i> O157:H7	154
planning	153
purpose	153
simplified identification procedure for food-borne microbial hazards	151
Fish	5
biogenic amine	123
flow diagram	35 36
process diagram	35 36
Fish sauce	
flow diagram	36
process diagram	36
Fish-rice paste	
flow diagram	35
process diagram	35
Flaxseed	80
Fluke. <i>See</i> Trematode	
Folic acid	5
Food, biotechnology	239

Index terms**Links**

Food contamination, sources	258	
Food group	4	
Food hygiene		
defined	53	
hazard analysis critical control point	57	
history	54	
Food safety		
defined	53	
fermented food		
practical intervention	259	
supply chain	221	
history	54	
reasons for concerns	54	
research needs	271	
Food-borne disease		
fermented food	255	
outbreaks related to fermented products	141	
precursors	119	120
Food-borne virus	160	
culture	160	
diagnosis	160	
features	160	
Fruit wine		
flow diagram	31	32
process condition	31	32
Fumonisin	110	
<i>Fusarium</i> toxin	108	
 G		
Gari		
flow diagram	21	
hazard analysis critical control point	60	
bagging	65	
cooling	65	
fermentation	65	

<u>Index terms</u>	<u>Links</u>
Gari (<i>Continued</i>)	
flow diagram	60 61
grating	65
hazards of concern	60
intended use	60
peeling	60
product description	60
raw material	60
roasting	65
serving	65
storing	65
washing	61
process condition	21
Gastrointestinal tract, probiotic strain	239
GATT Uruguay Round of Multilateral Trade Negotiations, Codex Alimentarius Commission	57
Genetic modification	219
acceptance	222
antibiotic resistance marker	219 227
benefits	220 223 229
cheese	222
safety evaluation	232
enzyme	
risks	228
safety evaluation	229 232
fermented food product	
functional microorganisms	224
now in market	224
lactic acid bacteria	
safety evaluation	232
structured assessment risk	234
microorganism	
benefits	228
consumer safety determination	230

Index terms**Links**

Genetic modification (<i>Continued</i>)		
environmental consequences determination	230	
risks	228	
safety evaluation	229	232
schematic benefit vs. risk ratio	225	
perception	219	
plant, schematic benefit vs. risk ratio	226	
probiotic strain	246	
risk	219	
risk assessment parameters	223	
risks	227	
soy sauce	222	
safety evaluation	229	
soybean, safety evaluation	229	
starter strain	246	
wheat, safety evaluation	229	
Giardiasis	207	
distribution	203	208
epidemiology	208	
life cycle	208	
prevention and control	208	
public health significance	208	
transmission	208	
Glucosinolate	77	
characterized	77	
risks	82	
Glycoalkaloid	75	
characterized	75	
Glycoside	71	
antinutritional	73	
bitter-tasting	73	
characterized	71	
structure	72	
toxic	73	
toxin concentration variation among varieties and cultivars	83	

<u>Index terms</u>	<u>Links</u>
Gnathostomosis	183
distribution	179 183
epidemiology	183
life cycle	183 184
prevention and control	183
public health significance	183
transmission	183
Gongylonemosis	183
distribution	179 185
epidemiology	185
life cycle	185
prevention and control	185
public health significance	184
transmission	185
Grading	15
safety	39
Growth factor	5
 H	
Hazard analysis critical control point	53
application areas	56
application guidelines	67
bacteria	150
benefits	56
characterized	55
cheese	266
Codex Alimentarius Commission	53
corrective action	70
critical control point monitoring	69
critical limit	68
determining critical control points	68
documentation	70
food hygiene	57
food preparation	58
consumer susceptibility	59

Index terms**Links**

Hazard analysis critical control point (<i>Continued</i>)		
handling	59	
intrinsic properties of food	58	
volume of food prepared	59	
gari	60	
bagging	65	
cooling	65	
fermentation	65	
flow diagram	60	61
grating	65	
hazards of concern	60	
intended use	60	
peeling	60	
product description	60	
raw material	60	
roasting	65	
serving	65	
storing	65	
washing	61	
hazard analysis	68	
health education	59	
historical development	53	
management commitment	55	
prerequisites	55	
principles	67	
togwa	259	
training	55	59
verification	70	
World Health Organization	53	
Hazard identification procedure, fermented sausage	151	
Health education, hazard analysis critical control point	59	
Heating	16	
Helminth		
classification	177	
distribution	179	194

<u>Index terms</u>	<u>Links</u>
Helminth (<i>Continued</i>)	
main hosts	179 194
source of infection	179 194
Hemicellulase	9
Hepatitis virus	162 167
Heterofermenter	42
Heterophyosis	197
Histamine	
biogenic amine	125
cheese	120
Homofermenter	42
Household processing, cassava root	84
Hydrogen peroxide, lactic acid bacteria	46
I	
Industrial processing, cassava root	85
Inositol	5
Iron	5
K	
Koikuchi-shoyu	
flow diagram	27
process condition	27
L	
Lactic acid, <i>Escherichia coli</i>	43
Lactic acid bacteria	1
antimicrobial factors associated with	43
bacteriocin	45
benefits of lactic acid fermentation	254
carbon dioxide	46
characterized	41
diacetyl	47
ethanol	47

Index terms**Links**

Lactic acid bacteria (<i>Continued</i>)		
genetic modification		
safety evaluation		232
structured assessment risk		234
hydrogen peroxide		46
low molecular weight compound		47
low pH		42
nutrient depletion		48
organic acid		42
overcrowding		48
principal genera associated with food		42
reuterin		47
virulence factor		240
<i>Lactobacillus</i> species		242
Lager beer		
flow diagram		23
process condition		23
Legume		
flow diagram		26 27
process condition		26 27
Linseed		80
<i>Linum usitatissimum</i>		80
Lipase		12
<i>Listeria monocytogenes</i>		146
pH		142
temperature		142
water activity		142
Low molecular weight compound, lactic acid bacteria		47
Lup Cheong		
flow diagram		34
process condition		34
M		
Magnesium		5
Malt alkaloid		133 134

<u>Index terms</u>	<u>Links</u>
Manganese	5
<i>Manihot esculenta</i>	80
Meat	4
biogenic amine	124
flow diagram	33 34
process condition	33 34
Methylazoxymethanol glycoside	75
characterized	75
risks	81
Microbial activity, safety	41
Microbial cell mass	1
Microbial enzyme	1
Microbial toxin	101
Microbiological challenge test, fermented	
sausage	153
carrying out	154
<i>Escherichia coli</i> O157:H7	154
planning	153
purpose	153
Microbiological hazard	
bacteria	141
parasite	175
virus	159
Microorganism	6
added food ingredients	5
degradation	87
examples	7
function in fermentation	7
genetic modification	
benefits	228
determining environmental consequences	230
general scheme to determine safety to consumers and some environmental consequences	230
risks	228
safety evaluation	229 232

Index terms**Links**

Microorganism (<i>Continued</i>)	
schematic benefit vs. risk ratio	225
natural fermentation in raw substrate	6
nutrients required by	5
Milk	4
flow diagram	37
process condition	37
Milk cheese	
flow diagram	38
process condition	38
Mineral	5
Mixed starter culture	
preheated substrate	6
raw substrate	6
Mixing	16
safety	41
Moisture adjustment	15
safety	40
Mold, function in fermentation	7
N	
Nanophyetosis	198
Nematode	175
distribution	179
main hosts	179
source of infection	179
Nicotinic acid	5
Nisin	45
Nitrogen	5
Nitrosamine	129
beer	133
cured food	131
formation	130
health effects	133

<u>Index terms</u>	<u>Links</u>
Nitrosamine (<i>Continued</i>)	
produced during processing	119
tobacco smoke	134
Nomenclature	
probiotic strain	242
starter strain	242
Norwalk-like virus	161 163
Nuoc-mam	
flow diagram	36
process diagram	36
Nutrient depletion, lactic acid bacteria	48
 O	
Ochratoxin A	105
Okadaic acid	115
Oligosaccharide	76
antinutritional	73
bitter-tasting	73
characterized	76
toxic	73
Olive	
flow diagram	30
process condition	30
Opisthorchiosis	198
Organic acid, lactic acid bacteria	42
 P	
Palm wine	
flow diagram	32
process condition	32
Pantothenic acid	5
Paragonimosis	199
distribution	194 200
epidemiology	200

Index terms**Links**

Paragonimosis (<i>Continued</i>)		
life cycle	200	201
prevention and control	200	
public health significance	196	199
transmission	200	
Parasite	175	
Pasteurization	154	
Patulin	107	
Pectolytic enzyme	9	
pH, lactic acid bacteria	42	
<i>Phaseolus lunatus</i>	79	
Physical processing, safety	39	
Physical separation	15	
safety	40	
Phytase	12	
Phytic acid	12	
structure	13	
Plaa-raa		
flow diagram	35	
process diagram	35	
Plant, genetic modification, schematic benefit vs. risk ratio	226	
Plant cell wall		
middle lamella	9	11
primary cell wall	9	11
secondary cell wall	9	11
structure	9	11
Plant origin	4	
Potassium	5	
Power flour	60	
Preheated substrate		
mixed starter culture	6	
pure culture	6	
Probiotic strain		
amplified fragment length polymorphism	245	

<u>Index terms</u>	<u>Links</u>
Probiotic strain (<i>Continued</i>)	
gastrointestinal tract	239
genetic modification	246
host	242
nomenclature	242
randomly amplified polymorphic DNA	245
restriction enzyme analysis	245
safety assessment	239
procedures	242
techniques	240
taxonomic basis	242
transfer of antibiotic resistance	246
Process conditions	17
Process unit operations	15
bioprocessing operations	16
flow diagram	17
physical operations	15
thermal processing operations	16
Protease	9
Protozoa	200
classification	202
distribution	203
main hosts	203
source of infection to man	203
<i>Prunus species</i>	79
Ptaquiloside	76
characterized	76
risks	82
Pure culture	
preheated substrate	6
sterilized substrate	8
Pyridoxine	5
Q	
Quantitative risk assessment, bacteria	150

Index terms**Links****R**

Randomly amplified polymorphic DNA		
probiotic strain	245	
starter strain	245	
Raw substrate, mixed starter culture	6	
Recombinant DNA technology	219	
commercial food enzyme	221	
Red grape wine		
flow diagram	31	
process condition	31	
Restriction enzyme analysis		
probiotic strain	245	
starter strain	245	
Reuterin, lactic acid bacteria	47	
Riboflavin	5	
Risk assessment, genetic modification	223	
Rotavirus	161	165
S		
Safety		
antimicrobial factor significance	48	
classification of food hazards	39	40
cleaning	40	
examples of threats	3	
grading	39	
microbial activity	41	
mixing	41	
moisture adjustment	40	
physical processing	39	
physical separation	40	
size reduction	41	
sorting	39	
transport	39	
washing	40	

<u>Index terms</u>	<u>Links</u>
Salami	
flow diagram	33
process condition	33
<i>Salmonella</i>	144
pH	142
temperature	142
water activity	142
Saponin	76
characterized	76
risks	82
Sapporo-like virus	161 164
Sarcocystosis	205
distribution	203 206
epidemiology	206
life cycle	205
prevention and control	206
public health significance	205
transmission	206
Sauerkraut	
flow diagram	28
process condition	28
Sausage	
raw	
flow diagram	34
process condition	34
raw fermented	
flow diagram	33
process condition	33
Saxitoxin	115
Seafood	5
Shelf life, fermented fish product	48 49
<i>Shigella</i>	144
pH	142
temperature	142
water activity	142

<u>Index terms</u>	<u>Links</u>	
Size reduction	15	
safety	41	
Sodium	5	
<i>Sorghum</i> species	81	
Sorting	15	
safety	39	
Sourdough bread		
flow diagram	25	
process condition	25	
Soy sauce		
flow diagram	27	
genetic modification	222	
safety evaluation	229	
process condition	27	
Soybean, genetic modification, safety evaluation	229	
Soybean tempeh		
flow diagram	26	
process condition	26	
<i>Staphylococcus aureus</i>	146	
pH	142	
temperature	142	
water activity	142	
Starchy roots and tubers		
flow diagram	21	22
process condition	21	22
Starter strain		
amplified fragment length polymorphism	245	
genetic modification	246	
nomenclature	242	
randomly amplified polymorphic DNA	245	
restriction enzyme analysis	245	
safety assessment	239	
procedures	242	243
techniques	240	
taxonomic basis	242	

<u>Index terms</u>	<u>Links</u>
Starter strain (<i>Continued</i>)	
transfer of antibiotic resistance	246
Sterilization	16
Sterilized substrate, pure culture	8
T	
T-2 toxin	109
Taeniosis	188
distribution	179 190
epidemiology	190
life cycle	190 191
prevention and control	190
public health significance	188
transmission	190
Tannase	13
Tannin	71
Tape ketella	
flow diagram	22
process condition	22
Tapeworm. <i>See</i> Cestode	
Tempe kedele	
flow diagram	26
process condition	26
Tenuazonic acid	111
Thermal processing operations	16
Thiamine	5
Tobacco smoke, nitrosamine	134
Toddy wine	
flow diagram	32
process condition	32
Togwa	60
hazard analysis critical control point	259
Toxic nitrogen compound, produced during processing	119

<u>Index terms</u>	<u>Links</u>	
Toxin	101	
removal by processing		
degradation products	86	
enzymes	87	
microorganisms	87	
modern industrial processing	84	
traditional household	84	
unit operations influencing	85	
Toxoflavin	112	
Toxoplasmosis	206	
distribution	203	207
epidemiology	207	
life cycle	206	
prevention and control	207	
public health significance	206	
transmission	207	
Training, hazard analysis critical control point	55	59
Transport	15	
safety	39	
Trematode	192	
distribution	194	
main hosts	194	
source of infection	194	
Trichinellosis (trichinosis)	185	
distribution	179	186
epidemiology	187	
life cycle	185	
prevention and control	187	
public health significance	185	
transmission	187	
Trichothecene	109	
V		
Vegetable		
biogenic amine	124	

<u>Index terms</u>	<u>Links</u>
Vegetable (<i>Continued</i>)	
flow diagram	28 30
process condition	28 30
<i>Vibrio cholerae</i>	143
pH	142
temperature	142
water activity	142
<i>Vibrio parahemolyticus</i>	143
pH	142
temperature	142
water activity	142
<i>Vibrio vulnificus</i>	144
Vicine	76
characterized	76
risks	82
Virulence factor, lactic acid bacteria	240
Virus	159
contamination of foods	168
risk assessment	168
stability of virus particle	159
virus survival in fermented foods	169
water	159
Vitamin	5
W	
Washing	15
safety	40
Water	5
virus	159
Water activity	5
Wheat, genetic modification, safety evaluation	229
Wheat mixed grain sourdough bread	
flow diagram	25
process condition	25

Index terms**Links**

Wine, biogenic amine	124	
World Health Organization, hazard analysis critical control point	53	
World Trade Organization Agreement on Sanitary and Phytosanitary Measures, Codex Alimentarius Commission	57	
Y		
Yeast, function in fermentation	7	
<i>Yersinia enterocolitica</i>	144	145
pH	142	
temperature	142	
water activity	142	
Yogurt		
flow diagram	37	
process condition	37	
Z		
Zearalenone	108	
Zoning, bacteria	149	