A	protease from Shinzan and, 316
Abees sweet potato, dietary fiber	spatial distribution in fruit, 311
contents of, 13	Acute encephalitis, CDV infection and, 63
Acetyl CoA carboxylase (ACC-1), 90	Ad-2, 91
Acid/aspartyl proteases, 279	Ad-5, 65, 68, 90–91
Actinidia arguta fruits, 294	effect of infection on, 66
Actinidia deliciosa, 293	human obesity, association with, 66
Actinidia eriantha, 299, 302	induced obesity, 90-91
Actinidia genus fruits	mechanism of, 91
allergenic properties, 317	mechanism of action, 67, 91
components, 299-316	Ad-31, 91
actinidin, 310-316	Ad-36, 65, 68, 87–91
calcium oxalate, 304-305	animal models, 88-89
organic acids, 300-301	effect of infection on, 65
pigments, 305-310	human obesity, association with, 65, 89
sugar and sugar alcohol, 299-300	induced obesity, 87-90
vitamin C, 301-303	mechanism of, 89-90
health benefits and, 317-318	mechanism of action, 67, 89-90
lutein and β-carotene, 309	Ad-37, 65, 67, 91
perspectives, 318–319	effect of infection on, 65
species and cultivars, 295-299	human obesity, association with, 65
A. arguta, 297–299	mechanism of action, 67
A. chinensis, 296–298	Adenoviruses, 65, 68, 84-90
A. deliciosa, 295–296, 298	SMAM-1, 65, 68, 85–87
A. eriantha, 299	type 5, 65, 68, 90–91
A. kolomikta, 299	type 36, 65, 68, 87–90
A. rufa, 298–299	type 37, 65, 90
Actinidia kolomikta, 297	Adenovirus type 5, see Ad-5
Actinidin in Actinidia genus	Adenovirus type 36, see Ad-36
fruits, 310–316	Adenovirus type 37, see Ad-37
actinidin concentration and protease	Adipogenic pathogens,
activity, 314	see also individual pathogens
cultivars, differences among, 313-316	effects of, 64–66
enzyme supplement and, 313	mechanism of action, 67-68
food proteins, effects on, 311–313	Aeromonas sp., 176
fruit growth and ripening, changes	Albumin, 275
during, 311	Alexandrium tamarense, 173–174

Algae	Astaxanthin, in marine-derived food
cultivation, 249-250	ingredients, 239, 258-259
fucans/fucanoids and other	Astropecten latespinosus, 170, 178
polysaccharides from, 271–272	Astropecten polyacanthus, 169, 170, 174, 178, 181
hydrocolloids, polysaccharides	Astropecten scoparius, 170, 178
from, 269–271	Astropecten vappa, 170
polysaccharides from, 240-241, 269-274	Atelopus chiriquiensis, 161
transgenics, 250–252	Atelopus oxyrhynchus, 161, 176
diatoms, 251	Atelopus varius ambulatorius, 161
dinoflagellates, 251–252	Atelopus varius varius, 160
green algae, 252-253	Atelopus zeteki, 162
macroalgae, 253	Atergatis floridus, 163-166, 174, 181
Alicyclobacillus acidoterrestris, 128	Atergatopsis germaini, 163-165, 167
Allergenic properties, of Actinidia	Autoimmune thyroiditis, RAV-7 and, 76-77
genus fruits, 317	Avian leukosis viruses, 73, 75
Alteromonas, 272	Avian retroviruses viruses, 73
Alteromonas tetraodonis, 174, 181	Ayamurasaki sweet potato, antioxidative and
Ambystoma tigrinum, 159	radical scavenging activities, 15
Amphidinium, 252	
Amphidinium carteri, 262	В
Amukeke chips, 37–38	Baby kiwi fruit, see Actinidia genus fruits
α-Amylase influence, SPS syrup and, 26–27	Babylonia formosae, 169
Annelids	Babylonia japonica, 168
tetrodotoxin in, 172-173	Bacillus sp., 174, 281, 283
toxicity of, 173	Bacteria, tetrodotoxin in, 174-176
Anthocyanins, 2–3	Bacteroides thetaiotaomicron, 83-84
in Actinidia genus fruits, 308-310	Batata, see Sweet potato
health benefits associated with, 16	BDV, see Borna disease virus (BDV)
refrigerated fruit juices, contents of, 119-120	Beauregard sweet potato
in sweet potato, 14-16	protein contents of, 9
Antioxidant activity, in refrigerated fruit	starch composition and, 23-24
juices, 120–122	Beauveria bassiana, 256
Aphanizomenon, 247	Beniazuma sweet potato, protein contents of, 9
Aphanizomenon flos-aquae, 261	Betaphycus gelatinum, 270
Apple juice, see also Refrigerated fruit juices	Beverage, from sweet potato, 40
consumption of, 104	Biddulphia sinensis, 262
Aromatic profile, of refrigerated fruit	Birgus latro, 166
juices, 113–114	Blue-ringed octopus, tetrodotoxin in, 165, 168
Arothron firmamentum, 158	Body mass index (BMI) in humans
Arothron hispidus, 158	Ad-36 and, 89
Arothron manilensis, 158	CP and, 77–78
Arothron mappa, 158	SMAM-1 and, 86
Arothron nigropunctatus, 158	Boniato, see Sweet potato
Arothron reticularis, 158	Borna disease virus (BDV), 64, 67, 81-83, 92
Arothron sp., 152	effect of infection on, 64
Arothron stellatus, 158	human obesity, association with, 64
Arrowworms, tetrodotoxin in, 173	induced obesity, 64, 67, 81-83
Arthrospira, 247	mechanism of, 82-83
Aspergillus fischeri, 131	mechanism of action, 67, 82-83

Brachycephalus ephippium, 161	in sweet potato, 10–13, 16, 31 Carotenoids
Bread supplemented with SPF	
development and storage stability of, 33–34	in <i>actinidia</i> genus fruits, 307–309
dough enhancers, 33–34	in marine-derived food ingredients, 239, 257–261
macroscopic and sensory evaluation of, 33	
Bryum, 268	astaxanthin, 239, 258–259
Byssochlamys fulva, 131	β-carotene, 239, 257–258
Byssochlamys nivea, 131	refrigerated fruit juices, contents of, 117–119
C	Catecholamine levels, CDV obesity
C	impact on, 69, 72
Calcium oxalate, in <i>Actinidia</i> genus	CDV, see Canine distemper virus (CDV)
fruits, 304–305	CEBP α gene, 90
Camote, see Sweet potato	CEBP β gene, 90
Candida lambica, 129	Cephalothrix linearis, 172
Candida pelliculosa, 127	Cephalothrix sp., 172
Candida sake, 129	Cerebratulus lacteus, 172
Canine distemper virus (CDV),	Charonia sauliae, 148, 168–139, 177
63–64, 67, 69–73, 92	poisoning due to digestive gland of, 147-148
acute encephalitis, 63	Chelonodon patoca, 158, 179, 219–220
alters hypothalamic integrity, 71	Chick Embryo Lethal Orphan virus
cytokine production, 72–73	(CELO), 85, 91
down regulates	China, puffer poisoning cases in, 148–152
long leptin receptor and increases leptin, 71	Chinese potato, see Sweet potato
melanin-concentrating hormone, 71–72	Chitin and chitosan, polysaccharides
effect of infection on, 64	from, 273–274
F gene mRNA levels, 70	Chitinolytic enzymes, 281
of genus Morbillivirus, 63	Chlamydia pneumoniae (CP), 66, 68, 77-78
hit-and-run effect, 62, 70, 72	coronary artery stenosis and, 78
human obesity, association with, 64	coronary heart disease (CHD) and, 77
induced obesity, 63, 69	effect of infection on, 66
mechanism of, 70-73	higher BMI and, 77-78
mechanism of action, 67, 70-73	human obesity, association with, 66
neuropeptides and, 72	mechanism of action, 67, 78
nucleoprotein transcripts, 70	Chlamydia pssittaci, 78
obesity impact, 69	Chlamydia trachomatis, 78
on brains and reproductive organs, 69	Chlamydomonas reinhardtii, 250, 252
on catecholamine levels, 69, 72	Chlorella minutissima, 263, 267
on insulin levels, 69	Chlorella protothecoides, 257, 259
on leptin levels, 69, 71	Chlorella sp., 245-248, 250, 252
on lipid and fat cells, 69	Chlorella vulgaris, 257
on lipogenesis, 69	Chlorophyll
on tyrosine hydroxylase, 69	in actinidia genus fruits, 305–307
replication in rain, 70	in marine-derived food ingredients,
Canthigaster ribulata, 157	239, 260–261
Capillary isotachophoresis, detection	Chymotrypsins, 279
method for TTX, 185, 189–190	Cilera abana, see Sweet potato
Carcinoscorpius rotundicauda, 152, 162, 166, 181	Coarse inginyo, 37
β-Carotene, 2–3	CODEX, General Standard for
in marine-derived food ingredients, 239,	Fruit Juices and Nectars, 104
257–258	Coenobitidae, 166
237 230	Cochooniant, 100

Collagen, 274	Enzymes
Collagenases, 279–280	chitinolytic, 281
Color, of refrigerated fruit juices, 122–124	digestive proteases, 278–280
Colostethus inguinalis, 161	extremophilic, 282–283
CP, see Chlamydia pneumoniae (CP)	food industry and, 277–283
Crypthecodinium, 250	lipases, 280–281
Crypthecodinium cohnii, 245, 262–263	marine-derived food ingredients,
Cryptotethya crypta, 254	242–243, 276–283
Ctenidium, 268	polyphenol oxidases, 281
Cyanobacteria, exopolysaccharides from, 272	from red algae, 283
Cyanospira capsulata, 272	transglutaminase, 281–282
Cyanothece, 272	Eriphia scabricula, 167
Cyclotella, 250	Eriphia sebana, 163, 167
Cynops ensicauda, 159, 180	Escherichia coli, in refrigerated fruit
Cynops pyrrhogaster, 159, 180, 220	juices, 130–131
Cytokine production, and CDV, 72–73	ESI-TOF/MS, see Electrospray ionization-time
Cytomegalovirus, 77	of flight/mass (ESI-TOF/MS)
Cytotoxicity test, detection method for	Ethanol, SPF fermentation to, 36
TTX, 185, 195–196	Eucheuma denticulatum, 270
	Eukrohnia hamata, 173
D	Eupenicillium, 131
Demania alcala, 167	Euphausia superba, 268
Demania reynaudi, 163–165, 167	Exopolysaccharides
Demania toxica, 167	cyanobacteria and, 272
Diatoms algae transgenics, 251	extremophiles and, 272
Dietary fiber, in sweet potato, 13–14, 31	Extremophiles
Digestive proteases, 278–280	marine-derived food ingredients
Dinoflagellates	sources, 253–254
algae transgenics, 251–252	polysaccharides from, 272
tetrodotoxin in, 173–174	sources of LC-PUFAs, 267
Diodon hystrix, 152	Extremophilic enzymes, 243, 282–283
Dunaliella bardawil, 253	, , , , , , , , , , , , , , , , , , ,
Dunaliella salina, 247, 250, 252, 257–258	F
Dunaliella sp., 245-246, 248-249,	FABMS, see Fast atom bombardment mass
252–253, 258, 276	spectrometry (FABMS)
Dysidea avara, 255	Fast atom bombardment mass spectrometry
,,	(FABMS), 173–174
E	TTX, detection method for, 185, 192-193
Ectocarpus siliculosus, 253	Fat cells, CDV obesity impact on lipids and, 69
Elastase, 279–280	Fatty acids contents, of refrigerated
Electrophoresis, detection method	fruit juices, 112–113
for TTX, 185, 189	Fatty acid synthetase (FAS), 90
Electrospray ionization-time of	F gene mRNA levels, and CDV, 70
flight/mass (ESI-TOF/MS), 161–162	Fiber one cereal, 34–36
TTX, detection method for, 185, 193–194	Fine patterned puffer, poisoning
Endomycopsis fibuligera, 36	due to liver of, 147–148
Entomophthora obscura, 266	Fish
Enzyme-linked immunoassay (EIA), 197	LC-PUFAs and, 264–266
Enzyme-linked immunosorbent	marine-derived food ingredients
assay (ELISA) system, 196	and, 256–257

Flaccisagitta enflata, 173	GPDH gene, 90
Flaccisagitta scripassae, 173	Gracilaria, 245, 270–271
Flatworms	Grapefruit juice, see also Refrigerated fruit juices
tetrodotoxin in, 170-171	consumption of, 104
toxicity of eggs laid by, 171	Grape kiwi fruit, see Actinidia genus fruits
Flavonoids contents, of refrigerated fruit	Grapsus albolineatus, 167
juices, 119–120	Grateloupia, 270
Flavor, of refrigerated fruit juices, 113-114	Green algae transgenics, 252–253
Food industry, enzymes and, 277–283	Guava juice, see also Refrigerated fruit juices
Food ingredients production, marine	consumption of, 104
biotechnology for, 237–284	Gut microbiota, 66-67, 83-84
Food Standards Agency, UK, 108	effect of infection on, 66
Free amino acids contents, of refrigerated	human obesity, association with, 66
fruit juices, 112–113	induced obesity, 83–84
French-fries, from sweet potato, 41–42	mechanism, 84
Frogs, tetrodotoxin in, 160–162	mechanism of action, 67, 84
Fruit and vegetables, see also	Gymnodinium simplex, 262
Refrigerated fruit juices	Gyrodinium cohnii, 262
consumption of, 105	•
epidemiological studies, 105-106	Н
protective effect of, 105–106	Haematococcus pluvialis, 247, 249,
Fungi, sources of LC-PUFAs, 266	252, 257, 259
Furan formation, in refrigerated fruit	Haematococcus sp., 252, 259
juices, 111–112	Halobacterium mediterranei, 272
Fusarium, 129	Halosydna brevisetosa, 173
	Hapalochlaena maculosa, 180
G	Hard red spring wheat (HRSW), 33
G. crassissima, 271	Harmothoe imbricata, 173
Gas chromatography-mass	Hayward fruit, see Actinidia genus fruits
spectrometry (GC-MS), 111	Hazard Analysis and Critical Control Points
detection method for TTX, 185, 191	(HACCP) system, 106
Gastropods	Health benefits, of Actinidia genus
poisoning due to digestive gland	fruits, 317–318
of, 147–148	Helicobacter pylori, 77–78
tetrodotoxin in, 168-169	Hemigrapsus sanguineus, 200
toxicity and toxin composition of, 169	Hermenia acanthopeltis, 173
GC-MS, see Gas chromatography-mass	High-performance liquid chromatography
spectrometry (GC-MS)	(HPLC), 151
Gelatin, 274–275	operating conditions for analysis of
Gelidium, 270	newt toxins, 188
Geodia cydonium, 255	TTX, detection method for, 185-188
Geotrichum sp., 129	HIPEF-treated juice, 118-119, 124
Gigartina, 270	Hit-and-run effect of CDV, 70, 72, 92
"Giza 69", 13	Hizikia fusiforme, 246
GLUT-4, 90	¹ H NMR spectrometry,
Gobies	see NMR spectroscopy
intoxication in uremic patient in	Hort16A fruit, see Actinidia genus fruits
Taiwan, 151–152	HPLC, see High-performance liquid
local variation of toxicity in, 161	chromatography (HPLC)
tetrodotoxin (TTX) in, 159-161	Human adenoviruses, 85

Human food systems	K
SPF production and utilization	Kappaphycus alvarezii, 270
for, 28–38, 30, 34	Kara-imo, see Sweet potato
sweet potato starch utilization in,	Kenya, sweet potato processing and utilization
18–29 (see also SPS syrup)	in, 44–47
	,
sweet potato utilization as value-added	Kiwi berry fruit, see Actinidia genus fruits
product in, 17–18	Kiwifruit, see Actinidia genus fruits
Human Genome Project, 212	Kloeckera apis, 127, 129
Human obesity association with	Koganesengan sweet potato, protein contents
ad-5, 66	of, 9
ad-36, 65	Koinostylochus sp., 171
ad-37, 65	Krill, sources of LC-PUFAs, 268
BDV, 64	Kumar, see Sweet potato
CDV, 64	Kumara, see Sweet potato
CP, 66	Kunuzaki, from sweet potato, 40
gut microbiota, 66	
infections in, 92–93	L
inflammation and, 92-93	Lactobacillus brevis, in refrigerated fruit
macrophage colony-stimulating factor	juices, 129
(MCSF), 93	Lactobacillus plantarum, 274
RAV-7, 64	in refrigerated fruit juices, 129-130
scrapie agent, 65	Lagocephalus gloveri, 157, 213, 216
SMAM-1, 65	Lagocephalus inermis, 157-158, 216
Hydrocolloids, polysaccharides from, 269-271	Lagocephalus lunaris, 157-158, 179, 213, 216
Hydroponic sweet potato starch (HSPS)	Lagocephalus sceleratus, 157, 216
syrup, 27–28	Lagocephalus wheeleri, 157, 216
Hyperglycemia, in ME7-infected mice, 80	Laminaria, 245–246, 253
Hyperlipidemia, RAV-7 induced, 74, 77	Laminaria japonica, 245, 246, 270–271
Нурпеа, 270	Laminaria saccharina, 246
Hypothalami, of CDV infected rats, 70–71	LC-MS, see Liquid chromatography-mass
Hypothalamic integrity, and CDV, 71	spectrometry (LC-MS)
,,,	Lepidonotus helotypus, 173
I	Leptin levels
IL-β transcripts, 73	CDV obesity impact on, 69, 71
IL-6 transcripts, 73	and leptin receptor, CDV down
Immunoassay, detection method	regulates, 71
for TTX, 185, 196–197	Leptodius sanguineus, 167
Infectobesity concert, 62	Lineus fuscoviridis, 172
Insulin levels, CDV obesity impact on, 69, 90	Lipases, 280–281
IR spectrometry, detection method for	Lipids
*	•
TTX, 185, 191–192	CDV obesity impact on fat cells and, 69
Isochrysis galbana, 264	marine-based long-chain PUFAs
	(LC-PUFAs), 239, 261–268
J	extremophiles as source of, 267
Jania sp., 173	fish as source of, 264–266
Japan, puffer poisoning cases in, 147–148	fungi as source of, 266
Japanese potato, see Sweet potato	krill as source of, 268
J6/66 sweet potato	macroalgae and mosses as source
composition of starch processed from, 23–24	of, 267–268
protein contents of, 9	microalgae as source of, 262–264

transgenic organisms as source of, 266–267	Marine enzymes
marine-derived food ingredients,	food industry and, 277–283
239, 261–269	chitinolytic enzymes, 281
sterols, 268–269	digestive proteases, 278–280
Lipogenesis, CDV obesity and, 69	enzymes from red algae, 283
Liquid chromatography-mass	extremophilic enzymes, 282-283
spectrometry (LC-MS), 310	lipases, 280–281
detection method for TTX, 185, 192-194	polyphenol oxidases, 281
Lophozozymus pictor, 163–165, 167	transglutaminase, 281–282
Lymphotropic RNA virus, 63	sources of, 276–277
	Marine organisms, 238
M	Marine sponges, sources of marine-derived
Macroalgae	food ingredients, 254-256
algae transgenics, 253	Matobolwa, from sweet potato, 38
and mosses, sources of LC-PUFAs, 267-268	Matteuccia, 268
Macrophage colony-stimulating	Measles virus (MV), 63
factor (MCSF), in human obesity, 93	Melanin-concentrating hormone (MCH), 69
Mandazis, from sweet potato, 46-47	CDV down regulation, 71-72
Mango juice, see also Refrigerated fruit juices	Michembe from sweet potato, 38
consumption of, 104	Microalgae, sources of LC-PUFAs, 262-264
Marchantia, 268	Mineral contents, in sweet potato, 13
Marine-based long-chain PUFAs (LC-PUFAs)	Mnium, 268
lipids, 239, 261–268	Morbillivirus, CDV of genus, 63
production technologies, 262-264	Mortierella alpina, 266–267
sources of	Mortierella elongata, 266
extremophiles as source of, 267	Mortierella isabellina, 266
fish, 264–266	Mortierella ramanniana, 266
fungi, 266	Mouse bioassay, detection method for
krill, 268	TTX, 184-186, 196
macroalgae and mosses, 267-268	
microalgae, 262-264	N
transgenic organisms, 266–267	Nassarius glans, 149
Marine biotechnology, for food ingredients	Nata de coco dessert, 17
production, 237–284	Natica alapailionis, 169
Marine-derived food ingredients	Natica lineata, 168-169, 176, 180, 219
categories of, 239–243, 257–283	Natica pseustes, 170
enzymes, 242–243, 276–283	Natica vitellus, 149, 168–169, 219
lipids, 239, 261–269	Navicula incerta, 262
photosynthetic pigments, 239, 257–261	Navicula pelliculosa, 262
polysaccharides, 240–241, 269–274	Neosartorya fischeri, in refrigerated
proteins, 241, 274–276	fruit juices, 131
sources of, 244–257	Neoxanthias impressus, 167
algae cultivation, 249-250	Neuropeptides expression and CDV, 72
algae transgenics, 250–252	Neurotropic negative-stranded RNA virus, 63
extremophiles, 253–254	Newts
fish and seafood byproducts, 256–257	local and sexual variation of toxicity in, 160
macroalgae, 245–246	tetrodotoxin (TTX) in, 159–160
macro- and microalgae, 244–253	Nigeria, traditional utilization of
marine sponges, 254–256	sweet potatoes in, 6
microalgae, 246–253	Niotha clathrata, 149, 168–169, 176, 219
, = 200	,,,,,,,,

Nitzschia, 250	astaxanthin, 239, 258-259
Nitzschia frustulum, 262	β-carotene, 239, 257–258
N-3 LC-PUFAs, see Marine-based long-chain	chlorophylls, 239, 260-261
PUFAs (LC-PUFAs)	marine-derived food ingredients, 239,
NMR spectroscopy, detection method for	257–261
TTX, 185, 194-195	Physcomitrella patens, 267
Nonenzymatic browning evaluation, in	Phytophthora infestans, 266
refrigerated fruit juices, 111-112	Pigments in Actinidia genus fruits, 305-310
Nostoc, 247, 272	anthocyanins, 308-310
Nostoc commune, 247	carotenoids, 307-309
Nostoc flagelliforme, 247	chlorophyll, 305–307
Notocomplana roreana, 171	Pilumnus vespertilio, 167
Notophthalmus viridescens, 159, 180	Pineapple juice, see also
Notoplana humilis, 171	Refrigerated fruit juices
Nucleoprotein transcripts, of CDV, 70	consumption of, 104
Nutrients, in refrigerated fruit juices, 105	Planocera multitentaculata, 170-171, 170-172
	Planocera reticulata, 170-171
0	Platypodia granulosa, 167
O. maculosus, 174	Plsiomonas sp., 176
Oliva hirasei, 146, 149, 169, 219	Pogonatum sp., 268
Oliva miniacea, 149, 169, 219	Pogonatum urnigerum, 268
Oliva mustelina, 149, 169, 219	Polinices didyma, 168, 219
Omega-3 LC-PUFAs, see Marine-based	Polinices tumidus, 168
long-chain PUFAs (LC-PUFAs)	Polypedates sp., 161
On-the-go food, 17	Polyphenol oxidase, 281
Orange-fleshed sweet potatoes, source of	refrigerated fruit juices, inactivation
provitamin A, 10	in, 126–127
Orange juice, see also Refrigerated fruit juices	Polysaccharides from
consumption of, 104, 106	algae, 240-241, 269-274
Organic acids, in Actinidia genus	fucans/fucanoids and other
fruits, 300-301	polysaccharides from, 271-272
Osteopetrosis, 73	hydrocolloids, 269-271
	chitin and chitosan, 273-274
P	cyanobacteria, 272
Prachaeturichtys palynena, 160	extremophiles, 272
Paralytic shellfish poisons (PSPs), 152	marine-derived food ingredients,
Paramesotriton hongkongensis, 159	240–241, 269–274
Paramyxoviruses, 63	Polytrichum, 268
Parasagitta elegans, 173	Pomacea canaliculata, 219
Passion fruit juice, see also	Porphyra sp., 245, 246, 253
Refrigerated fruit juices	Porphyridium cruentum, 263–264
consumption of, 104	PPAR-γ gene, 90–91
Patents, on sweet potato products, 40-41	Pro-opiomelanocortin (POMC) cell bodies,
Pectinesterases activity, of refrigerated	loss of, 71
fruit juices, 124–126	Protamine, 275–276
Penicillium, 129	Proteases, 278–280
Phaeodactylum tricornutum, 250–251,	Proteins
251, 262–264, 266–267	marine-derived food ingredients
Photosynthetic pigments	from, 241, 274–276
carotenoids, 239, 257–261	in sweet potato leaves and roots, 8-10, 31

Provitamin A, orange-fleshed	sensory characterization by descriptive
sweet potatoes and, 10	analysis of, 34–35
Pseudoalteromonas, 272	Red algae, enzymes from, 283
Pseudomonas sp., 176	Red calcareous alga, tetrodotoxin in, 173
Pseudopotamilla occelata, 172, 174	Redigobius caninus, 160
Psychrophilic enzymes, 282	Refrigerated fruit juices
Puffer	anthocyanins contents, 119-120
edible part of, in Japan, 147	antioxidant activity, 120-122
food industry programs for, 208–220	aromatic profile of, 113–114
new developed biotechnology	carotenoids contents, 117-119
and, 208–209	color, 122–124
traditional food puffer liver	consumer preferences for, 104
kimo, revival of, 209	consumption of, 104
nontoxic production, 208-209	E. coli, 130–131
poisoning cases in	fatty acids contents, 112-113
Japan, 147–148	flavonoids contents, 119-120
Taiwan and China, 148-152	flavor of, 113-114
poisoning deaths, 142	free amino acids contents, 112-113
species, 156–158	furan formation in, 111-112
direct sequence analysis approach, 210	inclusion in healthy diet, 104
genome techniques, identification	Lactobacillus brevis, 129
by, 209–213	Lactobacillus plantarum, 129-130
PCR-RFLP technique, 210-211	market for, 104
PCR-SSCP technique, 211–212	Neosartorya fischeri, 131
by protein technique, 213–218	nonenzymatic browning evaluation, 111–112
RAPD-PCR technique, 212	nutrients in, 105
tetrodotoxin in, 156–158	pectinesterases activity, 124–126
toxicity of, 147–148, 156	physicochemicals and quality
Taiwanese puffer, 157	characteristics of, 108–111
toxin chemistry, 197–198	polyphenol oxidase inactivation, 126–127
traditional food puffer liver kimo, 209	processing, 107–108
TTX infestation to nontoxic cultured, 200	quality and safety issues, 104–131
1171 intestation to nontoxic cultured, 200	quality parameters, 106–107
R	Salmonella enteritidis, 131
Rain, CDV replication in, 70	Staphylococcus aureus, 131
Rapana rapiformis, 168–169	vitamin A contents, 117–119
Rapana venosa venosa, 168–169	vitamin C concentration in, 114–117
RAV-7, 64, 67, 73–77	yeast, 127–129
autoimmune thyroiditis, 76–77	Renibacterium salmoninarum, 252
effect of infection on, 64	Rhodotorula rubra, 129
human obesity, association with, 64	Ribbon worms, tetrodotoxin in, 172
induced hyperlipidemia, 74, 77	Rous-associated virus-7 (RAV-7), see RAV-7
	Rous-associated virus-/ (RAV-/), see RAV-/
induced obesity, 74–75	S
specificity of, 75–76	2
mechanism of induced changes, 67, 76–77	Saccharomyces cerevisiae, 128, 267
stunting and, 74	Salmonella enteritidis, in refrigerated
Ready-to-eat breakfast cereals (RTEBC), 34–36	fruit juices, 131
Ready-to-eat sweet potato breakfast cereal	Sargassum confusum, 270
physical properties and sixth graders'	Satamu sweet potato, 6
acceptance of extruded, 35-36	Satsuma bairdi, 219

Satsuma-imo, see Sweet potato	Sphoeroides pachygaster, 216
Scenedesmus, 246	Spirulina (Arthrospira) maxima, 248, 257
Schizochytrium, 263–264	Spirulina (Arthrospira) platensis, 248, 250, 261
Scrapie agent	Spirulina sp., 245–248, 261
effect of infection on, 65	Sporamins A and B proteins, in sweet potato, 9
human obesity, association with, 65	SPS, see Sweet potato starch (SPS)
induced obesity, 65, 67, 78-81	SPS syrup
mechanism of, 80-81	α-amylase influence, 26–27
mechanism of action, 67	enzymatic hydrolysis into glucose syrup, 25
Seafood byproducts, 256–257	pH effects and concentration times on
Shewanella alga, 174	functional properties of, 26
Shewanella putrefaciens, 174, 181	physicochemical and viscometric
Sillago japonica, 160	properties of, 25-26, 29
SMAM-1, 65, 68, 85–87, 92	sensory and consumer evaluation of, 27-28
effect of infection on, 65	Staphylococcus aureus, in refrigerated fruit
human obesity, association with, 65	juices, 131
induced obesity, 85-87	Starfish, tetrodotoxin in, 169-170
mechanism of, 87	Sterols, marine-derived food ingredients
mechanism of action, 67, 87	in, 268–269
Snail poisoning outbreaks and patients, in	Stunting, and RAV-7, 74
Zhoushan City, 150	Stylochoplana clara, 171
Sodium channels	Stylochus ijimai, 171
mechanism of action on, 201-202	Stylochus orientalis, 171
molecular structure of, 202-203	Suberites domuncula, 255
TTX-R, 204–206	Sugar and sugar alcohol, in Actinidia
Soursop juice, see also Refrigerated fruit juices	genus fruits, 299–300
consumption of, 104	Suioh sweet potato greens, nutritional
Space missions, sweet potato vegetarian	contents of, 8–9
products intended for, 38–40	Sweet potato, see also SPF (sweet potato flour)
Spadella angulata, 173	anthocyanins, 14–16
Species and cultivars, of <i>Actinidia</i> genus	antioxidative and radical-scavenging
fruits, 295–299	activities, 14–15
A. arguta, 297–299	beverage, 40
A. chinensis, 296–298	biochemical composition of, 7–16
A. deliciosa, 295–296, 298	β-carotene in, 10–13, 16
A. eriantha, 299	dietary fiber, 13–14
A. kolomikta, 299	French-fry-type product from, 41
A. rufa, 298–299	growing season, 5
Species identification for puffer	health benefit from antihypertensive and
by genome techniques, 209–213	antidiabetic properties of, 15–16
direct sequence analysis approach, 210	in human diets, 6–7
PCR-RFLP technique, 210–211	kunuzaki, 40
PCR-SSCP technique, 211–212	leaves and roots, 5
puffer genome technique, 212–213	mineral contents, 13
RAPD-PCR technique, 212	nutritional composition of, 7–16
by protein technique, 213–218	origin of, 4
SPF, see Sweet potato flour	patents regarding products, 40–41
SPF/whole-wheat bran (SPFWWB)	per capita consumption of, 17
cereal, 34–36	potential in Ugandan food system, 42–44
Sphagnum, 268	potential products, 38–42
1 0 /	r r,

massassing and utilization in Vanua 44 47	mandustion and utilization for human food
processing and utilization in Kenya, 44–47	production and utilization for human food
production of, 7–8	systems, 28–38
products intended for space missions, 38–40	protein content of, 30–31
protein	quality characteristics of, 30–31
in leaves, 8–9	quality evaluation of, 37
in roots, 9–10	ready-to-eat sweet potato breakfast
scientific classification, 4	cereal, 34–36
sporamins A and B proteins in, 9	use as coloring materials, 14
as staple food, 2, 13	use in wheat-based composite flour
starch	products, 36–37
bulk ingredients from cultivars of, 23–24	Sweet potato leaves and roots, 5
composition and properties of, 23-24	proteins in, 8–10
effects of processing technology on yield	Sweet potato starch (SPS)
and quality, 23, 25	bulk ingredients from cultivars of, 23-24
utilization in human food systems, 18-29	composition and properties of, 23-24
starch syrup	effects of processing technology on yield
influence of α-amylase on physical	and quality, 23, 25
properties and consumer	production procedures for, 21-22
acceptability of, 26-27	scanning electron micrographs of
pH effects and concentration times on	granules of, 19
functional properties of, 26	syrup
physicochemical and viscometric	α -amylase influence, 26–27
properties of, 25-26, 29	pH effects and concentration times on
sensory and consumer evaluation	functional properties of, 26
of, 27–28	physicochemical and viscometric
starch utilization [see Sweet potato	properties of, 25–26, 29
starch (SPS)]	sensory and consumer evaluation
textural measurements and product quality of	of, 27–28
restructured French-fries from, 41–42	utilization in human food systems, 18-29
utilization as value-added products, 17-18	Symbiodinium, 252
varieties, 11–12	•
vegetarian products intended for space	T
missions, 38–40	Tachypleus gigas, 162
vitamin A deficiency (VAD) and, 10-11	Taiwan
yam and, 4–5	goby intoxication in uremic patient
Sweet potato flour (SPF)	in, 151–152
breadmaking properties of, 32–33	poisoning incident due to ingestion of
bread supplemented with	unknown fish in, 150
development and storage stability	puffer poisoning cases in, 148–152
of, 33–34	Takifugu chinensis, 157
dough enhancers, 33–34	Takifugu chrysops, 156
macroscopic and sensory	Takifugu exascurus, 157
evaluation of, 33–34	Takifugu flavidus, 156–157
fermentation to ethanol, 36	Takifugu niphobles, 150, 157–158, 174
genetic variation in color of, 36–37	Takifugu oblongus, 152, 157, 191, 216
like products, 37–38	Takifugu obscurus, 156–157
preparation of, 36	Takifugu pardalis, 156, 158, 179
processed in agroecological sites, and	Takifugu poecilonotus, 156, 158
small-scale processing	poisoning due to liver of, 147–148
technologies, 37	Takifugu porphyreus, 156

	003.00 40.0
Takifugu pseudommus, 157, 212	GC-MS, 185, 191
Takifugu rubripes, 156, 171, 212–213	HPLC, 185–188
Takifugu snyderi, 156, 174, 181	immunoassay, 185, 196–197
Takifugu stictonotus, 157	IR spectrometry, 185, 191–192
Takifugu vermicularis, 157, 219–220	LC-MS, 185, 192–194
Takifugu xanthopterus, 157, 216	mouse bioassay, 184–186, 196
Talaromyces flavus, 131	NMR spectroscopy, 185, 194–195
Taricha granulosa, 159, 180	TLC, 185, 189
Taricha oregon, 159	UV spectroscopy, 185, 190
Taricha rivularis, 180	distribution in animals, 146
Taricha torosa, 159, 180	elaborator, 176–178
Tetraodon alboreticulatus, 157–158	hemilactal type, 144
Tetraodon fangi, 158	hibernation agent, as attractant and, 219-220
Tetraodon nigroviridis, 157–158	infection to animals, mechanisms of, 178-184
Tetraodon ocellatus, 157	infestation to nontoxic cultured puffer
Tetraodon steindachneri, 158, 219–220	fish, 200
Tetraodontiformes, see Tetrodotoxin (TTX)	lacton type, 144
Tetraselmis, 250	mechanisms of accumulation in marine
Tetrodotoxication symptoms, 152-154	animals, 179
Tetrodotoxin (TTX)	pharmacology of, 198-207
4,9-anhydro type, 145	mechanism of action on sodium
bearing organisms, 156–176	channels, 201–202
annelids, 172–173	molecular structure of sodium
arrowworms, 173	channels, 202–203
bacteria, 174-176	site of action and binding of
blue-ringed octopus, 165, 168	TTX, 206–207
dinoflagellate, 173–174	TTX-R sodium channels, 204-206
flatworms, 170–171	poisoning, 145–156
frogs, 160–162	due to ingestion of puffer, 142
gastropods, 168–169	due to liver of finepatterned
gobies, 159–161	puffer, 147–148
horseshoe crab, 162–164	incidents in Japan, 143–148
newts, 159–160	incidents in Taiwan and China, 148–152
puffer, 156–158	incidents in world, 143–152
red calcareous algae, 173	prevention, 155–156
ribbon worms, 172	symptoms and signs, 152–154
starfish, 169–170	treatment, 154–155
toxin accumulation from TTX-producing	site of action and binding of, 206–207
bacteria, 182–183	tautomers, 143
TTX resistibility in, 199	therapeutic applications, 207–208
xanthid crabs, 163–167	Thalamita sp., 167
causative agent, 156–208	TH cell bodies, loss of, 69, 71
chemical structure, 143–145	Thermococcus chitonophagus, 281
detection methods for, 184–197	Thin-layer chromatography (TLC), detection
bioassay, 185–186	method for TTX, 185, 189
capillary isotachophoresis, 185, 189–190	Thraustochytrium, 263–264
cytotoxicity test, 185, 195–196	Tissue culture bioassay (TCBA), 195
electrophoresis, 185, 189	TLC, see Thin-layer chromatography (TLC)
ESI-TOF/MS, 185, 193–194	3T3-L1 preadipocytes, 90
FABMS, 185, 192–193	TNF-α transcripts, 73

Transgenic organisms, sources of in actinidia genus fruits, 301-303 LC-PUFAs, 266-267 concentration in refrigerated fruit Transglutaminase, 281-282 juices, 114-117 Triturus alpestris, 159, 180 Volvox carteri, 250 Triturus cristatus, 180 W Triturus marmoratus, 180 Triturus vulgaris, 159, 180 White-fleshed sweet potato roots, 5 Tropical fruit juices, consumption of, 104 Whole-wheat bran (WWB) cereal, 34–36 Trypsin, 279 TTX, see Tetrodotoxin (TTX) X Tubulanus punctatus, 172 Xanthias lividus, 164-165 TU-82-155 sweet potato, composition of Xanthid crabs tetrodotoxin (TTX) in, 163-167 starch processed from, 23-24 toxicity and toxin composition of, 165, Tutufa lissostoma, 168 Tylototriton andersoni, 159 167-168 Tyrosine hydroxylase (TH), see TH cell bodies Xiphosuridae, 166 "Xushu 18" sweet potato, 24 Ubhatata, see Sweet potato Y Ugandan food system, sweet potato potential Yam in, 42-44 β-carotene content, 4-5 Ulva pertusa, 272 growing season, 5 sweet potato and, 4-5 Umborium suturale, 170 Undaria pinnatifida, 246, 260 Yeast, in refrigerated fruit juices, 127-129 Yongeichthys criniger, 159, 178 Yongeichthys nebulosus, 151, 160 Vibrio alginolyticus, 174, 176 Vibrio fischeri, 181 Z Vibrio parahaemolyticus, 176 Zanthin, 259 ZESPRITM GOLD kiwifruit, Vibrio sp., 174, 181, 272 Vitamin A contents, of refrigerated fruit see Actinidia genus fruits juices, 117-119 Zeuxis castus-like, 169 Vitamin A deficiency (VAD), Zeuxis samiplicutus, 149, 169 sweet potato role in fight Zeuxis scalaris, 149, 168-169 against, 10-11, 47-48 Zeuxis sufflatus, 168, 219 Vitamin C Zosimus aeneus, 163-166