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**No. S 152**

SALE OF FOOD ACT
(CHAPTER 283)

FOOD (AMENDMENT) REGULATIONS 2017

In exercise of the powers conferred by section 56(1) of the Sale of Food Act, the Minister for National Development makes the following Regulations:

## Citation and commencement

**1.** These Regulations are the Food (Amendment) Regulations 2017 and come into operation on 1 April 2017.

## Amendment of regulation 9A

**2.** Regulation 9A of the Food Regulations (Rg 1) is amended by inserting, immediately after paragraph (2), the following paragraphs:

"(3) In the case of prepacked foods that have added to it barley beta-glucan and meet the criteria in paragraph (4), the following claim may be made in a label:

"Barley beta-glucans have been shown to lower/reduce blood cholesterol. High blood cholesterol is a risk factor in the development of coronary heart disease.".

(4) The criteria mentioned in paragraph (3) are —

(*a*) the cholesterol, saturated fatty acids and trans fatty acids present in the food are within the following levels:

(i) in the case of solid food —

(A) not more than 20 mg of cholesterol per 100 g;

(B) not more than 1.5 g of saturated fatty acids and trans fatty acids per 100 g; and

(C) not more than 10% of kilocalories from saturated fatty acids and trans fatty acids;

(ii) in the case of liquid food —

(A) not more than 10 mg of cholesterol per 100 ml;

(B) not more than 0.75 g of saturated fatty acids and trans fatty acids per 100 ml; and

(C) not more than 10% of kilocalories from saturated fatty acids and trans fatty acids; and

(*b*) the label of the food must contain —

(i) a statement or statements to the like effect that consumption of at least 3 g of barley beta-glucans in a day has been shown to lower blood cholesterol levels; and

(ii) a nutrition information panel in the form specified in the Twelfth Schedule or in such other similar form as may be acceptable to the Director-General, specifying the amounts of barley beta-glucan, cholesterol, saturated fatty acids and trans fatty acids, contained in the food.".

**Amendment of regulation 11**

**3.** Regulation 11(3) of the Food Regulations is amended by deleting the words "Notwithstanding anything to the contrary, no label" and substituting the words "No label".

**Amendment of regulation 21**

**4.** Regulation 21 of the Food Regulations is amended by inserting, immediately after paragraph (3), the following paragraph:

"(3A) Quillaia extracts (Type I, II or both) may be used only in —

(*a*) soft drinks, at a level not exceeding 50 ppm (calculated as saponins); and

(*b*) alcoholic beverages, at a level not exceeding 40 ppm (calculated as saponins).".

**Amendment of regulation 23**

**5.** Regulation 23(2) of the Food Regulations is amended —

(*a*) by deleting the word "and" at the end of sub-paragraph (*c*); and

(*b*) by deleting the full-stop at the end of sub-paragraph (*d*) and substituting the word "; and", and by inserting immediately thereafter the following sub-paragraph:

"(*e*) L-theanine in the following foods at a level not exceeding 1000 ppm:

(i) brewed tea;

(ii) soft drinks;

(iii) chocolate;

(iv) chocolate confectionery;

(v) sugar confectionery.".

**Amendment of regulation 28**

**6.** Regulation 28 of the Food Regulations is amended by deleting paragraph (6) and substituting the following paragraph:

"(6) Triethyl citrate may be used as a whipping agent in the following foods, at a level not exceeding 2500 ppm:

(*a*) liquid egg products;

(*b*) dried egg products, whether or not heat coagulated;

(*c*) heat coagulated egg products.".

**Amendment of regulation 31**

**7.** Regulation 31 of the Food Regulations is amended by inserting, immediately after paragraph (2), the following paragraph:

"(2A) A person must not import, sell, advertise, manufacture, consign or deliver any polished rice containing inorganic arsenic in excess of 0.2 ppm.".

**Amendment of regulation 86**

**8.** Regulation 86 of the Food Regulations is amended by deleting the words "0.916 and not more than 0.921" in paragraph (*a*) and substituting the words "0.915 and not more than 0.924".

**Amendment of regulation 88**

**9.** Regulation 88 of the Food Regulations is amended by deleting "125" in paragraph (*c*) and substituting "118".

**Amendment of regulation 91**

**10.** Regulation 91(2) of the Food Regulations is amended by deleting the word "Margarine" and substituting the words "Despite regulation 11(4), margarine".

**Amendment of regulation 168**

**11.** Regulation 168(1) of the Food Regulations is amended by deleting sub-paragraph (*g*).

**Amendment of regulation 227**

**12.** Regulation 227 of the Food Regulations is amended by deleting the words "may contain sulphur dioxide as a preservative and".

**Amendment of regulation 250A**

**13.** Regulation 250A(2) of the Food Regulations is amended by deleting the words "saturated fat" in sub-paragraphs (*a*) and (*b*) and substituting in each case the words "saturated fatty acids".

**Amendment of regulation 252**

**14.** Regulation 252(6) of the Food Regulations is amended by deleting the full-stop at the end of sub-paragraph (*e*) and substituting a semi-colon, and by inserting immediately thereafter the following sub-paragraph:

"(*f*) Beta-palmitin, with at least 52% of total palmitic acid esterified at the beta position, in an amount not exceeding 80% of the total fat content of infant formula.".

**Amendment of regulation 260**

**15.** Regulation 260(1) of the Food Regulations is amended by deleting the word "kilograms" in sub-paragraph (*c*) and substituting the words "grams or kilograms, as appropriate".

**Amendment of Part I of Fourth Schedule**

**16.** Part I of the Fourth Schedule to the Food Regulations is amended —

(*a*) by deleting the words "Flour intended for use in the manufacture of biscuits" under the heading "Selected Foods" and substituting the words "Flour, all types";

(*b*) by deleting the item "Ginger, dry root" and its corresponding entry;

(*c*) by inserting, corresponding to the item "Hamburgers and similar products", the following entry in the appropriate column as shown:

"

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Hamburgers and similar products | | | | | 2,500 | | |

";

(*d*) by inserting, immediately after the item "Hamburgers and similar products", the following item and its corresponding entry in the appropriate column as shown:

"

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Herbs and spices | 150 | | | | | | |

";

(*e*) by inserting, corresponding to the item "Meat, canned, cured, pickled, salted or smoked whether cooked or uncooked", the following entry in the appropriate column as shown:

"

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Meat, canned, cured, pickled, salted or smoked whether cooked or uncooked | | | | | 2,500 | | |

"; and

(*f*) by inserting, corresponding to the item "Sausages, or sausage meat", the following entry in the appropriate column as shown:

"

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Sausages, or sausage meat | | | | | 2,500 | | |

".

## Amendment of Part II of Fifth Schedule

**17.** Part II of the Fifth Schedule to the Food Regulations is amended —

(*a*) by inserting, immediately after the word "including" in paragraph 2(*a*), the words "beet red,"; and

(*b*) by inserting, immediately after paragraph 4, the following paragraph:

"5. Spirulina extract or cyanobacterial-phycocyanin extracted from *Spirulina platensis* that conforms to the following specifications:

(*a*) not more than 2 mg/kg lead;

(*b*) not more than 2 mg/kg arsenic;

(*c*) not more than 1 mg/kg mercury;

(*d*) negative for microcystin toxin.".

## Amendment of Sixth Schedule

**18.** The Sixth Schedule to the Food Regulations is amended —

(*a*) by inserting, immediately after the item "Polyglycerol esters of fatty acids", the following item:

"Polyglycerol polyricinoleate;"; and

(*b*) by deleting the following item:

"Quillaia (only in soft drinks, not exceeding 200 parts per million);".

**Amendment of Seventh Schedule**

**19.** Item 2 of Part II of the Seventh Schedule to the Food Regulations is amended by inserting, immediately after the entry "Sodium ferric pyrophosphate", the following entry:

"Sodium ferrous citrate".

**Amendment of Eighth Schedule**

**20.** The Eighth Schedule to the Food Regulations is amended —

(*a*) by deleting the following items:

(i) Alpha-acetolactate decarboxylase (from a genetically modified strain of *Bacillus subtilis*);

(ii) Alpha-amylase (endo-amylase from a genetically modified strain of *Bacillus licheniformis*);

(iii) Alpha-amylase (from *Bacillus subtilis*);

(iv) Aminopeptidase (from *Aspergillus oryzae*);

(v) Asparaginase (from a genetically modified strain of *Aspergillus oryzae* or *Aspergillus niger*);

(vi) Beta-galactosidase (lactase from *Kluyveromyces lactis*);

(vii) Beta-glucanase (endo-glucanase from *Bacillus subtilis*);

(viii) Beta-glucanase (endo-glucanase from *Hunicola insolens*);

(ix) Cellulase (from *Trichoderma longibrachiatum*);

(x) Chymosin (produced by *Escherichia coli*);

(xi) Endo-protease (metallo protease from *Bacillus amyloliquefaciens*);

(xii) Glucoamylase (amyloglucosidase from *Aspergillus niger*);

(xiii) Glucose oxidase (from *Aspergillus niger*);

(xiv) Glycerophospholipid cholesterol acyltransferase (from a genetically modified strain of *Bacillus licheniformis*);

(xv) Hemicellulase (endo-1,4-β-xylanase from a genetically modified strain of *Aspergillus niger* or *Bacillus subtilis*);

(xvi) Hexose oxidase (from a genetically modified strain of *Hansenula polymorpha*);

(xvii) Invertase (from *Saccharomyces cerevisiae*);

(xviii) Lipase (triacylglycerol acylhydrolase from a genetically modified strain of *Aspergillus niger*);

(xix) Lipase, triacylglycerol (from a genetically modified strain of *Aspergillus oryzae*);

(xx) Maltogenic amylase (amylase from a genetically modified strain *of Bacillus subtilis*);

(xxi) Papain;

(xxii) Pentosanase (xylanase or hemicellulase from a genetically modified strain of *Aspergillus oryzae*);

(xxiii) Polygalacturonase (from *Aspergillus niger*);

(xxiv) Protease (from *Bacillus subtilis*);

(xxv) Serine protease with trypsin specificity (from a genetically modified strain of *Fusarium venenatum*);

(xxvi) Transglutaminase (transferase prepared from *Streptoverticillium mobaraense* variant);

(*b*) by inserting, immediately above the Schedule heading "PERMITTED GENERAL PURPOSE FOOD ADDITIVES", the following words:

"PART 1"; and

(*c*) by inserting, immediately after Part 1, the following Part:

"PART 2

PERMITTED ENZYMES

**(A) Enzymes derived from animal sources**

| Enzyme | EC Number | Source |
|---|---|---|
| Catalase | 1.11.1.6 | Bovine liver |
| Lactoperoxidase | 1.11.1.7 | Bovine milk |
| Lipase, triacylglycerol | 3.1.1.3 | Bovine stomach; salivary glands or forestomach of calf, kid or lamb; porcine or bovine pancreas |
| Lysozyme | 3.2.1.17 | Egg whites |
| Pancreatin (or pancreatic elastase) | 3.4.21.36 | Pancreas of the hog or ox |
| Pepsin | 3.4.23.1 | Bovine or porcine stomach |
| Phospholipase A2 | 3.1.1.4 | Porcine pancreas |
| Rennet | 3.4.23.4 | Aqueous extracts from the fourth stomach of calves, kids, lambs, and adult bovine animals, sheep and goats |
| Thrombin | 3.4.21.5 | Bovine or porcine blood |
| Trypsin | 3.4.21.4 | Porcine or bovine pancreas |

**(B) Enzymes derived from plant sources**

| Enzyme | EC Number | Source |
|---|---|---|
| Alpha-amylase | 3.2.1.1 | Malted cereals |
| Actinidin | 3.4.22.14 | Kiwifruit (*Actinidia deliciosa*) |
| Beta-amylase | 3.2.1.2 | Malted cereals |
| | | Sweet potato (*Ipomoea batatas*) |
| Bromelain | 3.4.22.4 | Pineapple fruit/stem (*Ananas comosus* and *Ananas bracteatus* (L)) |
| Ficin | 3.4.22.3 | *Ficus* spp. |
| Lipoxidase | 1.13.11.12 | Soyabean whey or meal |
| Papain | 3.4.22.2 | *Carica papaya* (L) (Fam. *Caricaceae*) |

**(C) Enzymes derived from microbial sources**

| Enzyme | EC Number | Production organism | Donor organism | Donor gene |
|---|---|---|---|---|
| 1,4-alpha-glucan branching enzyme | 2.4.1.18 | *Bacillus subtilis* | *Rhodothermus obamensis* | 1,4-alpha-glucan branching enzyme |
| | | *Geobacillus stearothermophilus*[2] | | |
| Alpha-acetolactate decarboxylase | 4.1.1.5 | *Bacillus amyloliquefaciens* | | |
| | | *Bacillus subtilis* | | |
| | | *Bacillus subtilis* | *Bacillus brevis* | Alpha-acetolactate decarboxylase |
| Alpha-amylase | 3.2.1.1 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus niger*[1] | Alpha-amylase |
| | | *Aspergillus niger*[1] | *Rhizomucor pusillus* | Alpha-amylase |
| | | *Aspergillus oryzae* | | |
| | | *Bacillus amyloliquefaciens* | | |
| | | *Bacillus amyloliquefaciens* | *Bacillus amyloliquefaciens* | Alpha-amylase |
| | | *Bacillus licheniformis* | | |
| | | *Bacillus licheniformis* | *Bacillus amyloliquefaciens* | Alpha-amylase |
| | | *Bacillus licheniformis* | *Bacillus licheniformis* | Alpha-amylase |
| | | *Bacillus licheniformis* | *Bacillus licheniformis and Bacillus amyloliquefaciens* | Alpha-amylase |
| | | *Bacillus licheniformis* | *Geobacillus stearothermophilus*[2] | Alpha-amylase |
| | | *Bacillus licheniformis* | *Pseudomonas stutzeri* | Alpha-amylase |
| | | *Bacillus subtilis* | | |
| | | *Bacillus subtilis* | *Bacillus megaterium* | Alpha-amylase |

| Enzyme | EC Number | Production organism | Donor organism | Donor gene |
|---|---|---|---|---|
| | | *Bacillus subtilis* | *Alicyclobacillus pohliae* | Alpha-amylase |
| | | *Bacillus subtilis* | *Geobacillus stearothermophilus*[2] | Alpha-amylase |
| | | *Geobacillus stearothermophilus*[2] | | |
| | | *Geobacillus stearothermophilus*[2] | *Geobacillus stearothermophilus*[2] | Alpha-amylase |
| | | *Microbacterium imperiale* | | |
| | | *Pseudomonas fluorescens* | *Thermococcales* | Alpha-amylase |
| | | *Rhizopus oryzae* | | |
| | | *Trichoderma longibrachiatum*[3] | *Aspergillus kawachii* | Alpha-amylase |
| Alpha-arabinofuranosidase | 3.2.1.55 | *Aspergillus niger*[1] | | |
| Alpha-galactosidase | 3.2.1.22 | *Aspergillus niger*[1] | | |
| Alpha-glucosidase (or maltase) | 3.2.1.20 | *Aspergillus niger*[1] | | |
| | | *Aspergillus oryzae* | | |
| | | *Trichoderma longibrachiatum*[3] | *Aspergillus niger*[1] | Alpha-glucosidase (or maltase) |
| Aminopeptidase | 3.4.11.1 | *Aspergillus oryzae* | | |
| | | *Lactococcus lactis* | | |
| Amylomaltase | 2.4.1.25 | *Bacillus amyloliquefaciens* | *Thermus thermophilus* | Amylomaltase |
| Asparaginase | 3.5.1.1 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus niger*[1] | Asparaginase |
| | | *Aspergillus oryzae* | | |
| | | *Aspergillus oryzae* | *Aspergillus oryzae* | Asparaginase |
| | | *Bacillus subtilis* | *Pyrococcus furiosus* | Asparaginase |
| Aspergillopepsin I | 3.4.23.18 | *Aspergillus niger*[1] | | |
| | | *Aspergillus oryzae* | | |

| Enzyme | EC Number | Production organism | Donor organism | Donor gene |
|---|---|---|---|---|
| | | *Trichoderma longibrachiatum*[3] | *Trichoderma longibrachiatum*[3] | Aspergillopepsin I |
| Aspergillopepsin II | 3.4.23.19 | *Aspergillus niger*[1] | | |
| Beta-amylase | 3.2.1.2 | *Bacillus amyloliquefaciens* | | |
| | | *Bacillus subtilis* | | |
| Beta-fructofuranosidase (invertase or saccharase) | 3.2.1.26 | *Aspergillus japonicus* | | |
| | | *Aspergillus niger*[1] | | |
| | | *Saccharomyces cerevisiae* | | |
| Beta-galactosidase (or lactase) | 3.2.1.23 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus oryzae* | Beta-galactosidase (or lactase) |
| | | *Aspergillus oryzae* | | |
| | | *Bacillus circulans* ATCC 31382 | | |
| | | *Bacillus subtilis* | *Bifidobacterium bifidum* | Beta-galactosidase (or lactase) |
| | | *Kluyveromyces lactis*[4] | | |
| | | *Kluyveromyces marxianus*[5] | | |
| | | *Saccharomyces sp.* | | |
| Beta-glucanase (endo-beta glucanase or endo-1,3-beta-glucanase) | 3.2.1.6 | *Aspergillus niger*[1] | | |
| | | *Aspergillus oryzae* | | |
| | | *Bacillus amyloliquefaciens* | | |
| | | *Bacillus amyloliquefaciens* | *Bacillus amyloliquefaciens* | Beta-glucanase (endo-beta glucanase or endo-1,3-beta-glucanase) |
| | | *Bacillus subtilis* | | |
| | | *Bacillus subtilis* | *Bacillus subtilis* | Beta-glucanase (endo-beta glucanase or endo-1,3-beta-glucanase) |

| Enzyme | EC Number | Production organism | Donor organism | Donor gene |
|---|---|---|---|---|
| | | *Disporotrichum dimorphosphorum* | | |
| | | *Humicola insolens* | | |
| | | *Rasamsonia emersonii*[6] | | |
| | | *Trichoderma longibrachiatum*[3] | | |
| Beta-glucosidase | 3.2.1.21 | *Aspergillus niger*[1] | | |
| Carboxylesterase | 3.1.1.1 | *Rhizomucor miehei*[7] | | |
| Carboxypepti dase C | 3.4.16.5 | *Aspergillus niger*[1] | *Aspergillus niger*[1] | Carboxypepti dase C |
| Catalase | 1.11.1.6 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus niger*[1] | Catalase |
| | | *Micrococcus luteus*[8] | | |
| Cellulase | 3.2.1.4 | *Aspergillus niger*[1] | | |
| | | *Penicillium funiculosum* | | |
| | | *Rasamsonia emersonii*[6] | | |
| | | *Trichoderma longibrachiatum*[3] | | |
| | | *Trichoderma longibrachiatum*[3] | *Trichoderma longibrachia tum*[3] | Cellulase |
| | | *Trichoderma viride* | | |
| Chymosin | 3.4.23.4 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger var. awamori* | *Camelus dromedarius* | Chymosin |
| | | *Escherichia coli K-12* strain GE81 | | |
| | | *Kluyveromyces lactis*[4] | | |
| | | *Kluyveromyces lactis*[4] | *Calf prochymosin B* | Chymosin |
| Cyclodextrin glucanotransfer ase | 2.4.1.19 | *Bacillus licheniformis* | *Thermoanaero bacter sp.* | Cyclodextrin glucanotransfer ase |
| | | *Paenibacillus macerans*[9] | | |
| Deaminase | 3.5.4.6 | *Aspergillus melleus* | | |
| Dextranase | 3.2.1.11 | *Chaetomium erraticum* | | |

| Enzyme | EC Number | Production organism | Donor organism | Donor gene |
|---|---|---|---|---|
| | | *Chaetomium gracile* | | |
| | | *Penicillium lilacinum* | | |
| Endo-arabinase | 3.2.1.99 | *Aspergillus niger*[1] | | |
| Endo-protease | 3.4.21.26 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus niger*[1] | Endo-protease |
| Glucan 1,3-beta-glucosidase | 3.2.1.58 | *Trichoderma harzianum* | | |
| Endo-1,3-beta-xylanase | 3.2.1.32 | *Humicola insolens* | | |
| Endo-1,4-beta-xylanase | 3.2.1.8 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus niger*[1] | Endo-1,4-beta-xylanase |
| | | *Aspergillus niger*[1] | *Rasamsonia emersonii*[6] | Endo-1,4-beta-xylanase |
| | | *Aspergillus oryzae* | | |
| | | *Aspergillus oryzae* | *Aspergillus aculeatus* | Endo-1,4-beta-xylanase |
| | | *Aspergillus oryzae* | *Humicola lanuginosa*[10] | Endo-1,4-beta-xylanase |
| | | *Bacillus amyloliquefaciens* | | |
| | | *Bacillus licheniformis* | *Bacillus licheniformis* | Endo-1,4-beta-xylanase |
| | | *Bacillus subtilis* | | |
| | | *Bacillus subtilis* | *Bacillus subtilis* | Endo-1,4-beta-xylanase |
| | | *Disporotrichum dimorphosphorum* | | |
| | | *Humicola insolens* | | |
| | | *Rasamsonia emersonii*[6] | | |
| | | *Trichoderma longibrachiatum*[3] | | |
| | | *Trichoderma longibrachiatum*[3] | *Aspergillus niger*[1] | Endo-1,4-beta-xylanase |
| | | *Trichoderma longibrachiatum*[3] | *Aspergillus tubingensis* | Endo-1,4-beta-xylanase |
| | | *Trichoderma longibrachiatum*[3] | *Thermopoly spora flexuosa*[11] | Endo-1,4-beta-xylanase |

| Enzyme | EC Number | Production organism | Donor organism | Donor gene |
|---|---|---|---|---|
| Glucoamylase (or amyloglucosidase) | 3.2.1.3 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus niger*[1] | Glucoamylase (or amyloglucosidase) |
| | | *Aspergillus niger*[1] | *Penicillium oxalicum* | Glucoamylase (or amyloglucosidase) |
| | | *Aspergillus niger*[1] | *Talaromyces emersonii* | Glucoamylase (or amyloglucosidase) |
| | | *Aspergillus niger*[1] | *Trametes cingulata* | Glucoamylase (or amyloglucosidase) |
| | | *Aspergillus oryzae* | | |
| | | *Rhizopus delemar* | | |
| | | *Rhizopus niveus* | | |
| | | *Rhizopus oryzae* | | |
| | | *Trichoderma longibrachiatum*[3] | *Trichoderma longibrachiatum*[3] | Glucoamylase (or amyloglucosidase) |
| Glucose isomerase (or xylose isomerase) | 5.3.1.5 | *Actinoplanes missouriensis* | | |
| | | *Bacillus coagulans* | | |
| | | *Microbacterium arborescens* | | |
| | | *Streptomyces olivaceus* | | |
| | | *Streptomyces olivochromogenes* | | |
| | | *Streptomyces murinus* | | |
| | | *Streptomyces rubiginosus* | | |
| | | *Streptomyces rubiginosus* | *Streptomyces rubiginosus* | Glucose isomerase (or xylose isomerase) |
| Glucose oxidase | 1.1.3.4 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus niger*[1] | Glucose oxidase |

| Enzyme | EC Number | Production organism | Donor organism | Donor gene |
|---|---|---|---|---|
| | | *Aspergillus niger*[1] | *Penicillium chrysogenum* | Glucose oxidase |
| | | *Aspergillus oryzae* | *Aspergillus niger*[1] | Glucose oxidase |
| | | *Penicillium chrysogenum* | | |
| Glutaminase | 3.5.1.2 | *Bacillus amyloliquefaciens* | | |
| Glycerophospho lipid cholesterol acyltransferase | 2.3.1.43 | *Bacillus licheniformis* | *Aeromonas salmonicida subsp. salmonicida* | Glycerophospho lipid cholesterol acyltransferase |
| Hexose oxidase | 1.1.3.5 | *Hansenula polymorpha*[12] | *Chondrus crispus* | Hexose oxidase |
| Inulinase | 3.2.1.7 | *Aspergillus niger*[1] | | |
| Lipase, monoacylglycerol | 3.1.1.23 | *Penicillium camembertii* | | |
| Lipase, triacylglycerol | 3.1.1.3 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Candida antarctica* | Lipase, triacylglycerol |
| | | *Aspergillus niger*[1] | *Fusarium culmorum* | Lipase, triacylglycerol |
| | | *Aspergillus oryzae* | | |
| | | *Aspergillus oryzae* | *Fusarium oxysporum* | Lipase, triacylglycerol |
| | | *Aspergillus oryzae* | *Humicola lanuginosa*[10] | Lipase, triacylglycerol |
| | | *Aspergillus oryzae* | *Rhizomucor miehei*[7] | Lipase, triacylglycerol |
| | | *Aspergillus oryzae* | *Humicola lanuginosa*[10] *and Fusarium oxysporum* | Lipase, triacylglycerol |
| | | *Candida rugosa* | | |
| | | *Hansenula polymorpha*[12] | *Fusarium heterosporum* | Lipase, triacylglycerol |
| | | *Mucor javanicus*[13] | | |
| | | *Penicillium roquefortii*[14] | | |
| | | *Rhizomucor miehei*[7] | | |
| | | *Rhizopus arrhizus* | | |

| Enzyme | EC Number | Production organism | Donor organism | Donor gene |
|---|---|---|---|---|
| | | *Rhizopus niveus* | | |
| | | *Rhizopus oryzae* | | |
| Lysophospholipase | 3.1.1.5 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus niger*[1] | Lysophospholipase |
| | | *Trichoderma longibrachiatum*[3] | *Aspergillus nishimurae* | Lysophospholipase |
| Maltogenic alpha-amylase | 3.2.1.133 | *Bacillus licheniformis* | *Geobacillus stearothermophilus*[2] | Maltogenic alpha-amylase |
| | | *Bacillus subtilis* | *Geobacillus stearothermophilus*[2] | Maltogenic alpha-amylase |
| Maltotetraohydrolase | 3.2.1.60 | *Bacillus licheniformis* | *Pseudomonas stutzeri* | Maltotetraohydrolase |
| Mannan endo-1,4-beta-mannosidase | 3.2.1.78 | *Aspergillus niger*[1] | | |
| | | *Bacillus amyloliquefaciens* | | |
| | | *Bacillus subtilis* | | |
| | | *Trichoderma longibrachiatum*[3] | | |
| | | *Trichoderma longibrachiatum*[3] | *Trichoderma longibrachiatum*[3] | Mannan endo-1,4-beta-mannosidase |
| Metalloproteinase[15] | 3.4.24.4 | *Aspergillus oryzae* | | |
| | | *Bacillus amyloliquefaciens* | | |
| | | *Bacillus amyloliquefaciens* | *Bacillus amyloliquefaciens* | Metalloproteinase |
| | | *Bacillus coagulans* | | |
| | | *Bacillus subtilis* | | |
| | | *Bacillus subtilis* | *Bacillus amyloliquefaciens* | Metalloproteinase |
| | | *Geobacillus caldoproteolyticus* | | |
| | | *Geobacillus stearothermophilus*[2] | | |

| Enzyme | EC Number | Production organism | Donor organism | Donor gene |
|---|---|---|---|---|
| Mucorpepsin (or aspartic proteinase) | 3.4.23.23 | *Aspergillus oryzae* | | |
| | | *Aspergillus oryzae* | *Rhizomucor miehei*[7] | Aspartic proteinase |
| | | *Cryphonectria parasitica* | | |
| | | *Rhizomucor miehei*[7] | | |
| Pectin esterase | 3.1.1.11 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus niger*[1] | Pectin esterase |
| | | *Aspergillus oryzae* | *Aspergillus aculeatus* | Pectin esterase |
| Pectin lyase | 4.2.2.10 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus niger*[1] | Pectin lyase |
| | | *Trichoderma longibrachiatum*[3] | *Aspergillus niger*[1] | Pectin lyase |
| Peroxidase | 1.11.1.7 | *Aspergillus niger*[1] | *Marasmius scorodonius* | Peroxidase |
| Phosphodiesterase I | 3.1.4.1 | *Leptographium procerum* | | |
| Phospholipase A1 | 3.1.1.32 | *Aspergillus oryzae* | *Fusarium venenatum* | Phospholipase A1 |
| Phospholipase A2 | 3.1.1.4 | *Aspergillus niger*[1] | *Porcine pancreas* | Phospholipase A2 |
| | | *Streptomyces violaceoruber* | | |
| | | *Trichoderma longibrachiatum*[3] | *Aspergillus nishimurae* | Phospholipase A2 |
| Phospholipase C | 3.1.4.3 | *Pichia pastoris* | *Isolated from soil* | Phospholipase C |
| 3-Phytase | 3.1.3.8 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus niger*[1] | 3-Phytase |
| 4-Phytase | 3.1.3.26 | *Aspergillus oryzae* | *Peniophora lycii* | 4-Phytase |
| Polygalacturonase (*pectinase*) | 3.2.1.15 | *Aspergillus niger*[1] | | |
| | | *Aspergillus niger*[1] | *Aspergillus niger*[1] | Polygalacturonase (*pectinase*) |
| | | *Aspergillus oryzae* | | |
| | | *Aspergillus oryzae* | *Aspergillus aculeatus* | Polygalacturonase (*pectinase*) |

| Enzyme | EC Number | Production organism | Donor organism | Donor gene |
|---|---|---|---|---|
| | | *Rhizopus oryzae* | | |
| | | *Trichoderma longibrachiatum*[3] | | |
| Protein-glutaminase | 3.5.1.44 | *Chryseobacterium proteolyticum* | | |
| Pullulanase | 3.2.1.41 | *Bacillus acidopullulyticus* | | |
| | | *Bacillus amyloliquefaciens* | | |
| | | *Bacillus licheniformis* | | |
| | | *Bacillus licheniformis* | *Bacillus deramificans* | Pullulanase |
| | | *Bacillus subtilis* | | |
| | | *Bacillus subtilis* | *Bacillus acidopullulyticus* | Pullulanase |
| | | *Bacillus subtilis* | *Bacillus deramificans* | Pullulanase |
| | | *Bacillus subtilis* | *Bacillus naganoensis* | Pullulanase |
| | | *Klebsiella pneumoniae*[16] | | |
| | | *Pullulanibacillus sp.* | | |
| Ribonuclease | 3.1.26.5 | *Penicillium citrinum* | | |
| Serine proteinase[17] | 3.4.21.14 | *Aspergillus melleus* | | |
| | | *Aspergillus oryzae* | | |
| | | *Bacillus amyloliquefaciens* | | |
| | | *Bacillus halodurans* | | |
| | | *Bacillus licheniformis* | | |
| | | *Bacillus subtilis* | | |
| Serine protease (Chymotrypsin) | 3.4.21.1 | *Bacillus licheniformis* | *Nocardiopsis prasina* | Serine protease (Chymotrypsin) |
| Serine protease with trypsin specificity | 3.4.21.4 | *Fusarium venenatum* | *Fusarium oxysporum* | Serine protease with trypsin specificity |
| Tannase | 3.1.1.20 | *Aspergillus oryzae* | | |
| Transglucosidase | 2.4.1.24 | *Aspergillus niger*[1] | | |

| Enzyme | EC Number | Production organism | Donor organism | Donor gene |
|---|---|---|---|---|
| | | *Trichoderma longibrachiatum*[3] | *Aspergillus niger*[1] | Transglucosidase |
| Transglutaminase | 2.3.2.13 | *Streptomyces mobaraensis*[18] | | |
| Urease | 3.5.1.5 | *Lactobacillus fermentum* | | |

[1] Aspergillus niger group includes A. aculeatus, A. awamori, A. ficuum, A. foetidus, A. japonicus, A. phoenicis, A. saitor and A. usamii.
[2] Geobacillus stearothermophilus – former name Bacillus stearothermophilus.
[3] Trichoderma longibrachiatum also known as Trichoderma reesei.
[4] Kluyveromyces lactis – former name Saccharomyces lactis.
[5] Kluyveromyces marxianus – former names Saccharomyces fragilis and Kluyveromyces fragilis.
[6] Rasamsonia emersonii – former name Talaromyces emersonii.
[7] Rhizomucor miehei – former name Mucor miehei.
[8] Micrococcus luteus – former name Micrococcus lysodeikticus.
[9] Paenibacillus macerans – former name Bacillus macerans.
[10] Humicola lanuginosa also known as Thermomyces lanuginosus.
[11] Thermopolyspora flexuosa – former name Nonomuraea flexuosa.
[12] Hansenula polymorpha also known as Pichia angusta.
[13] Mucor javanicus also known as Mucor circinelloides f. circinelloides.
[14] Penicillium roquefortii also known as Penicillium roqueforti.
[15] Metalloproteinase (EC 3.4.24.4) includes vibriolysin (EC 3.4.24.25), pseudolysin (EC 3.4.24.26), thermolysin (3.4.24.27), bacillolysin (EC 3.4.24.28), aureolysin (EC 3.4.24.29), coccolysin (EC 3.4.24.30), mycolysin (EC 3.4.24.31), beta-lytic metalloendopeptidase (EC 3.4.24.32), deuterolysin (EC.3.4.24.39), serralysin (EC 3.4.24.40).
[16] Klebsiella pneumoniae – former name Klebsiella aerogenes.
[17] Serine proteinase (EC 3.4.21.14) includes oryzin (EC 3.4.21.63).
[18] Streptomyces mobaraensis – former name Streptoverticillium mobaraense. ".

## Amendment of Ninth Schedule

**21.** The Ninth Schedule to the Food Regulations is amended by deleting the following items and their corresponding entries:

(*a*) Captafol;

(*b*) Carbophenothion;

(*c*) Chlordimeform and its metabolites determined as 4-chloro-o-toluidine and expressed as chlordimeform;

(*d*) Crufomate;

(*e*) Dioxathion;

(*f*) Diphenyl;

(*g*) Etrimfos;

(*h*) Fenchlorphos;

(*i*) Fensulphothion;

(*j*) Formothion;

(*k*) Mevinphos.

**Amendment of Tenth Schedule**

**22.** The Tenth Schedule to the Food Regulations is amended by deleting item (20) of sub-paragraph (*b*) and substituting the following items:

| | | | | |
|---|---|---|---|---|
| " (20) | Infant formula | 0.1 | 0.01 (applicable to infant formula as consumed) | 20 |
| (20A) | Baby food | 0.1 | 0.2 | 20 ". |

**Amendment of Thirteenth Schedule**

**23.** The Thirteenth Schedule to the Food Regulations is amended —

(*a*) by inserting, corresponding to the item "Dairy-based drinks (flavoured and/or fermented)", the following entry in the appropriate column as shown:

"

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Dairy-based drinks (flavoured and/or fermented) | | | | | 200 | |

";

(*b*) by inserting, immediately below the item "Ready-to-drink coffee, coffee substitutes, tea, herbal infusions and other hot cereal and grain beverages (excluding cocoa), and pre-mixes for such products", the following item and its corresponding entry in the appropriate column as shown:

"

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Soybean-based beverages | | | | | 200 | |

";

(*c*) by inserting, immediately below the item "Fermented vegetable and seaweed products, excluding fermented soybean products", the following item and its corresponding entry in the appropriate column as shown:

“

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Vegetable, nut and seed spreads | | | | | 330 | |

”;

(*d*) by inserting, corresponding to the item “Cocoa and chocolate products”, the following entry in the appropriate column as shown:

“

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Cocoa and chocolate products | | | | | 550 | |

”;

(*e*) by inserting, corresponding to the item “Confectionery (including hard and soft candy, nougats and marzipans)”, the following entry in the appropriate column as shown:

“

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Confectionery (including hard and soft candy, nougats and marzipans) | | | | | 700 | |

”;

(*f*) by inserting, corresponding to the item “Seasonings and condiments (excluding sauces)”, the following entry in the appropriate column as shown:

“

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Seasonings and condiments (excluding sauces) | | | | | 30 | |

”; and

(*g*) by inserting, corresponding to the item “Sauces, gravies and dressings, and their mixes”, the following entry in the appropriate column as shown:

“

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Sauces, gravies and dressings, and their mixes | | | | | 350 (except for soybean sauces, where up to | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | 165 ppm is permitted) | |

".

**Amendment of Fourteenth Schedule**

**24.** Item 3 of the Fourteenth Schedule to the Food Regulations is amended by deleting items 1 and 2 under the heading "Criteria for food on which claim is made" and substituting the following items:

" 1. Low in saturated fatty acids (not more than 1.5g saturated fatty acids per 100g, and not more than 10% of kilocalories from saturated fatty acids), or

Free of saturated fatty acids (not more than 0.5g saturated fatty acids per 100g, and not more than 1% of the total fat is trans fatty acids); and

2. Free of trans fatty acids (less than 0.5g trans fatty acids per 100g); and

".

*[G.N. Nos. S 515/2006; S 195/2011; S 175/2012; S 444/2012; S 493/2013; S 816/2014; S 49/2016]*

Made on 31 March 2017.

OW FOONG PHENG
*Permanent Secretary,*
*Ministry of National Development,*
*Singapore.*

[ND 202/1-76 V4; AG/LEGIS/SL/283/2015/1 Vol. 2]

(To be presented to Parliament under section 56(4) of the Sale of Food Act).